SCH number 2000011033

October 2019

Route 46 Corridor Improvement Project

San Luis Obispo County, California
District 5-SLO-46, PM (32.2/57.8)
3307U0 & 330800

Supplemental Draft Environmental Impact Report

Updated Environmental Assessment
Cholame Section (PM 49.7/54.7)





On State Route 46 from 0.2 mile east of the Shandon Safety Roadside Rest Area to 0.1 miles west of Davis Road.

Prepared by the
State of California Department of Transportation

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

General Information About This Document

What's in this document:
The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA) has prepared this Supplemental Draft Environmental Impact Report/Updated Environmental Assessment (Supplemental Draft EIR/Updated EA) for review and comment. This Supplemental Draft EIR/Update EA focuses on the Cholame Section of the larger Route 46 Corridor Improvement Project (*Corridor Project*) located in San Luis Obispo County, California. The Cholame Section is the second to the last section of the *Corridor Project*, beginning 0.2 miles east of the Shandon Roadside Rest Area, at post mile (PM 49.7) and ending 0.1 miles west of Davis Road at PM 54.7. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and is the lead agency under the California Environmental Quality Act (CEQA).

This supplemental document describes changes to the *Corridor Project* since finalization of the Environmental Impact Report/Finding of No Significant Impact (EIR/FONSI) in 2006 and examines how these changes could affect the existing environment within the limits of the Cholame Section. It is anticipated that readers will review this Supplemental Draft EIR/Updated EA together with the 2006 EIR/FONSI.

What you should do:
Please read this Supplemental Draft EIR/Updated EA and submit comments by the deadline (December 11, 2019). Additional copies of this document and the 2006 EIR/FONSI are available for review at the following locations

- Caltrans District 5 office, 50 Higuera Street, San Luis Obispo, CA.
- Paso Robles City Library, 1000 Spring Street, Paso Robles, CA.
- Shandon Library, 195 N 2nd Street, Shandon, CA 93461

To obtain a hard copy or compact disc of this Supplemental Draft EIR/Updated EA and the 2006 EIR/FONSI, please e-mail Jason.wilkinson@dot.ca.gov.

Submit comments via U.S. mail to Caltrans at the following address:

Jason Wilkinson, Senior Environmental Planner
California Department of Transportation
50 Higuera Street
San Luis Obispo, CA 93401

Submit comments via email to: jason.wilkinson@dot.ca.gov

You may request that Caltrans hold a public hearing to discuss this supplemental document. Please send or e-mail your request to Jason Wilkinson at the address listed above.

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.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attn: Jason Wilkinson, Central Coast Management Branch 3, 50 Higuera Street, San Luis Obispo, CA 93401; (805) 549-3376 (Voice), or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711

SCH# 2000011033
05-SLO-46-PM 49.7/54.7
05-3307A_ 05-1400-0027

Convert the existing two-lane highway to a four-lane divided expressway on State Route 46 from post mile 49.7 to post mile 54.7 in San Luis Obispo County.

SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT REPORT /UPDATED ENVIRONMENTAL ASSESSMENT CHOLAME SECTION

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

THE STATE OF CALIFORNIA
Department of Transportation

Oct. 15, 2019
Date

Timothy M. Gubbins
District 5 Director
California Department of Transportation
CEQA and NEPA Lead Agency

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

Jason Wilkinson, 50 Higuera Street, San Luis Obispo, CA 93401, 805-542-4663

Document Summary

This Supplemental Draft EIR/Updated EA describes changes to the Route 46 Corridor Improvement Project (*Corridor Project*) since finalization of the Environmental Impact Report/Finding of No Significant Impact in 2006 (2006 EIR/FONSI) and examines how these changes could affect the existing environment within the Cholame Section. The Cholame Section is the third section of the *Corridor Project* and extends from post mile (PM) 49.7 to PM 54.7. The first two sections of the *Corridor Project* (Estrella and Shandon) from PM 32.2 to PM 50.2 have been constructed. The Wye is the fourth and final section of the *Corridor Project*, extending from PM 54.1 to 57.8 and is proposed for construction in 2023.

Construction of the Cholame Section would continue to improve the corridor by converting the existing two-lane conventional highway to a four-lane divided expressway. The purpose and need of the *Corridor Project* remain the same as what is described in the 2006 EIR/FONSI. The purpose of the *Corridor Project* is to minimize fatal accidents, improve safety and reduce existing and future peak-hour congestion. The *Corridor Project* is needed due to current and predicted future traffic capacity problems as well as a higher than average collision rate within the Wye Section. This Supplemental Draft EIR/Updated EA only focuses on changes to the *Corridor Project* as they relate to the Cholame Section.

Caltrans has prepared this document as a result of proposed design modifications to the previously identified preferred Cholame Section Alternative 1 (2006 EIR/FONSI). The new design being proposed consists of adjustments to the highway alignment along with incorporation of additional project features, which are described below under the Summary of Changes heading. The alignment modification is being proposed to avoid extraordinarily high utility relocation costs associated with the 2006 EIR/FONSI preferred alternative (Cholame Alternative 1). The highway alignment modification would avoid an underground jet fuel line and would substantially decrease the linear footage of oil and gas lines that would need to be relocated, significantly reducing project costs. The proposed design modifications have led to the development of a new proposed Build Alternative, herein referred to as the Cholame North Modified Alternative (Option A).

In addition to evaluation of a new proposed Build Alternative, this Supplemental Draft EIR/Updated EA also analyses changes in the environmental setting, changes to Best Management Practices (BMP's), minimization and mitigation measures and changes in laws, regulations and guidance since finalization of the 2006 EIR/FONSI, as they relate to the Cholame Section.

The purpose of this Supplemental Draft EIR/Updated EA is to ensure that the environmental documentation addresses potential environmental impacts associated with changes that have occurred to the *Corridor Project* as they relate to the Cholame Section and assigns feasible avoidance, minimization and mitigation measures to off-set potential impacts to the maximum extent possible.

The proposed project is a joint project by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency under NEPA and CEQA.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, often a "lower level" document is prepared for NEPA. One of the most common joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA).

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

The FHWA evaluated the 2003 Environmental Assessment (EA) and determined that the project would not have a significant impact on the human environment and concurrently made a Finding of No Significant Impact (FONSI) based on this assessment. The FONSI was signed by the FHWA on May 19, 2006, prior to Caltrans Assuming NEPA Assignment. However, now that Caltrans assumes federal lead under NEPA, this Updated EA has been evaluated and signed by Caltrans.

After receiving comments from the public and reviewing agencies, a Supplemental Final Environmental Impact Report/Updated Environmental Assessment (Supplemental Final EIR/Updated EA) will be prepared. Caltrans may prepare additional environmental and/or engineering studies to address comments. The Supplemental Final EIR/Updated EA will include responses to comments received on the Supplemental Draft EIR/Updated EA and will identify the preferred alternative. If the decision is made to approve the project, a Notice of Determination (NOD) will be published for compliance with CEQA, and the

Department will decide whether to issue an Updated FONSI or require an Environmental Impact Statement (EIS) for compliance with NEPA. A Notice of Availability (NOA) of the FONSI will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with Executive Order 12372.

This Supplemental Draft EIR/Updated EA is formatted so that the reader can review this document together with the 2006 EIR/FONSI. For consistency, this Supplemental Draft EIR/Updated EA follows the Chapter and Section numbering from the 2006 EIR/FONSI. There are Sections in the 2006 EIR/FONSI that have not changed as a result of the changes to the *Corridor Project*, and the conclusions made remain the same after supplemental environmental review. The 2006 EIR/FONSI sections which remain unchanged are incorporated by reference in this Supplemental Draft EIR/Updated EA in accordance with the California Environmental Quality Act Guidelines Section 15150.

Summary of Changes

S.1 Corridor Section Post Mile Changes

The 2006 EIR/FONSI discussed potential environmental impacts, avoidance, minimization and/or mitigation measures associated with construction of a four-lane expressway from post mile (PM) 32.2 to 56.3. The 2006 EIR/FONSI described the *Corridor Project* as being composed of four sections; Estrella (PM 32.2-41.2); Shandon (PM 41.2-50.2); Cholame (PM 50.2-54.8); and the Wye (PM 54.8-56.3). Table S.1-1 below describes the PM changes with respect to each of the four *Corridor Project* **sections** described in the 2006 EIR/FONSI and provides the names of the smaller **segments** within the larger Estrella and Shandon Sections. The PM overlap between some of the sections allows for lane transitions with the subsequent section.

Table S.1-1: Project Section Post Mile Changes

2006 EIR/FONSI Project Sections	Post Miles	Revised Project Segments	Revised Post Miles	Status
Estrella Section	32.2/41.2	Union Segment	32.2/37.2	Complete 2011
		Whitley 1 Segment	37.2/41.2	Complete 2014
Shandon Section	41.2/50.2	Whitley 2A Segment	40.7/46.3	Complete 2016
		Whitley 2B Segment	46.0/50.2	Complete 2018
Cholame Section	50.2/54.8	Cholame Section	49.7/54.7	Begin construction 2021
Wye Section	54.8/56.3	Wye Section	54.1/57.8	Begin construction 2023

S.2 Design Modifications to Cholame Section Alternative 1

S.2-1 Highway Alignment Changes Associated with the Cholame North Modified Alternative (Option A)

Highway alignment modifications to the 2006 EIR/FONSI preferred alternative (Alternative 1) for the Cholame Section, are being proposed to avoid extraordinary costs associated with the relocation of underground oil, gas, jet fuel and telecommunication lines and potentially hazardous waste impacts associated with relocation of pipelines containing hazardous material. Table 2.3.2-1 on page 17 provides right-of-way cost estimate, including utility relocation costs, for each of the Cholame alternatives that have been evaluated.

The new proposed Build Alternative [Cholame North Modified Alternative (Option A)] would construct all four lanes on a new alignment for the entire length of the Cholame Section (PM 49.7 to 54.7), whereas the 2006 EIR/FONSI preferred Alternative (Alternative 1) would have used a portion of the existing alignment as part of the new four lane divided expressway. Figure S.2-1 on the following page shows the highway alignment for the Cholame North Modified Alternative (Option A) compared to other alternatives that were evaluated [Alternative 1; Alternative 1 Modified; Alternative North Modified (Option B)]. Figure S.2-2 provides a close-up view showing the difference between the Cholame North Modified Alternative (Option A) and (Option B). Chapter 2 of this Supplemental Draft EIR/Updated EA provides a detailed description of the proposed Cholame North Modified Alternative (Option A) as well as a description of alternatives that were considered but eliminated from further discussion.

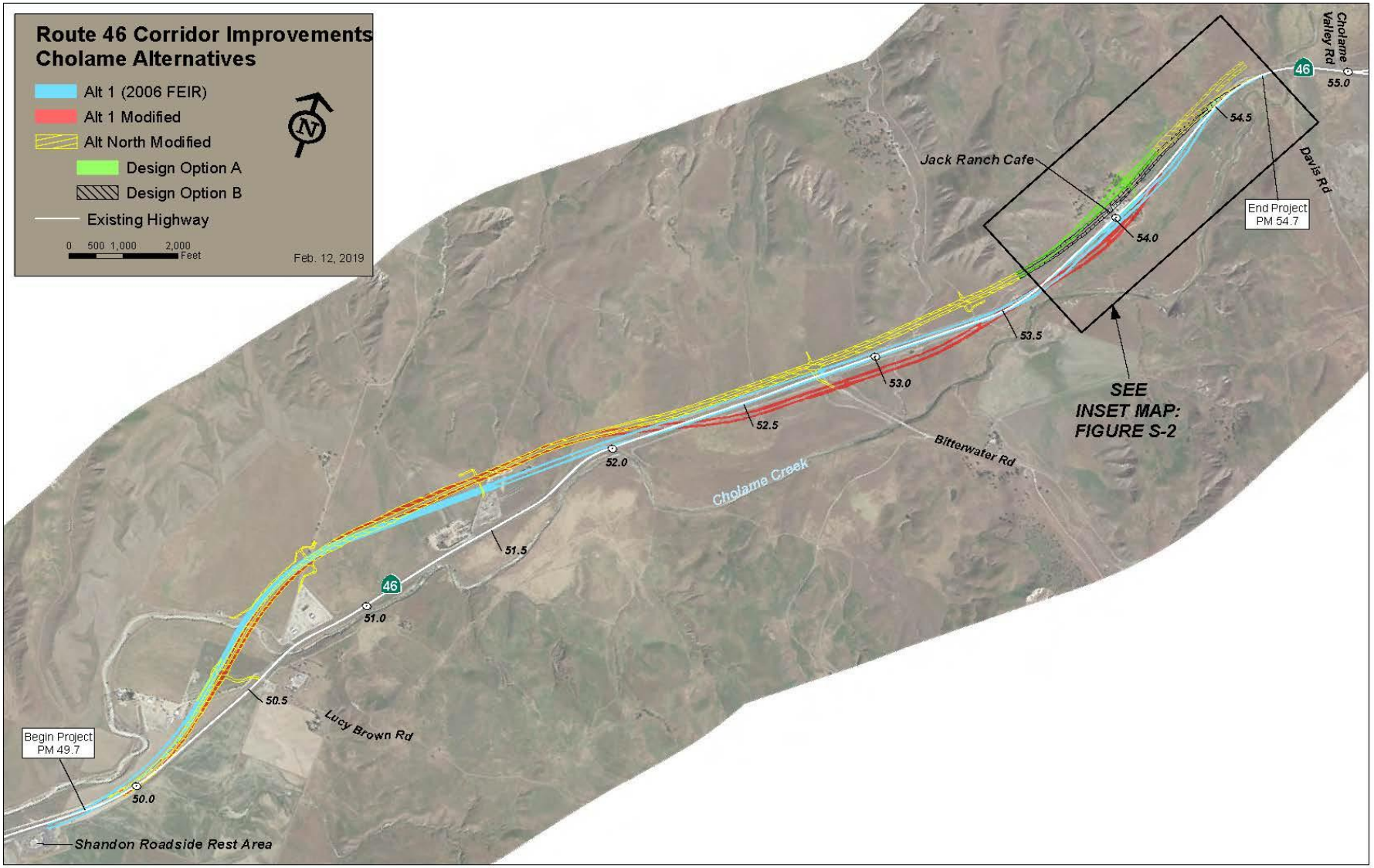


Figure S.2-1 Cholame Alternatives

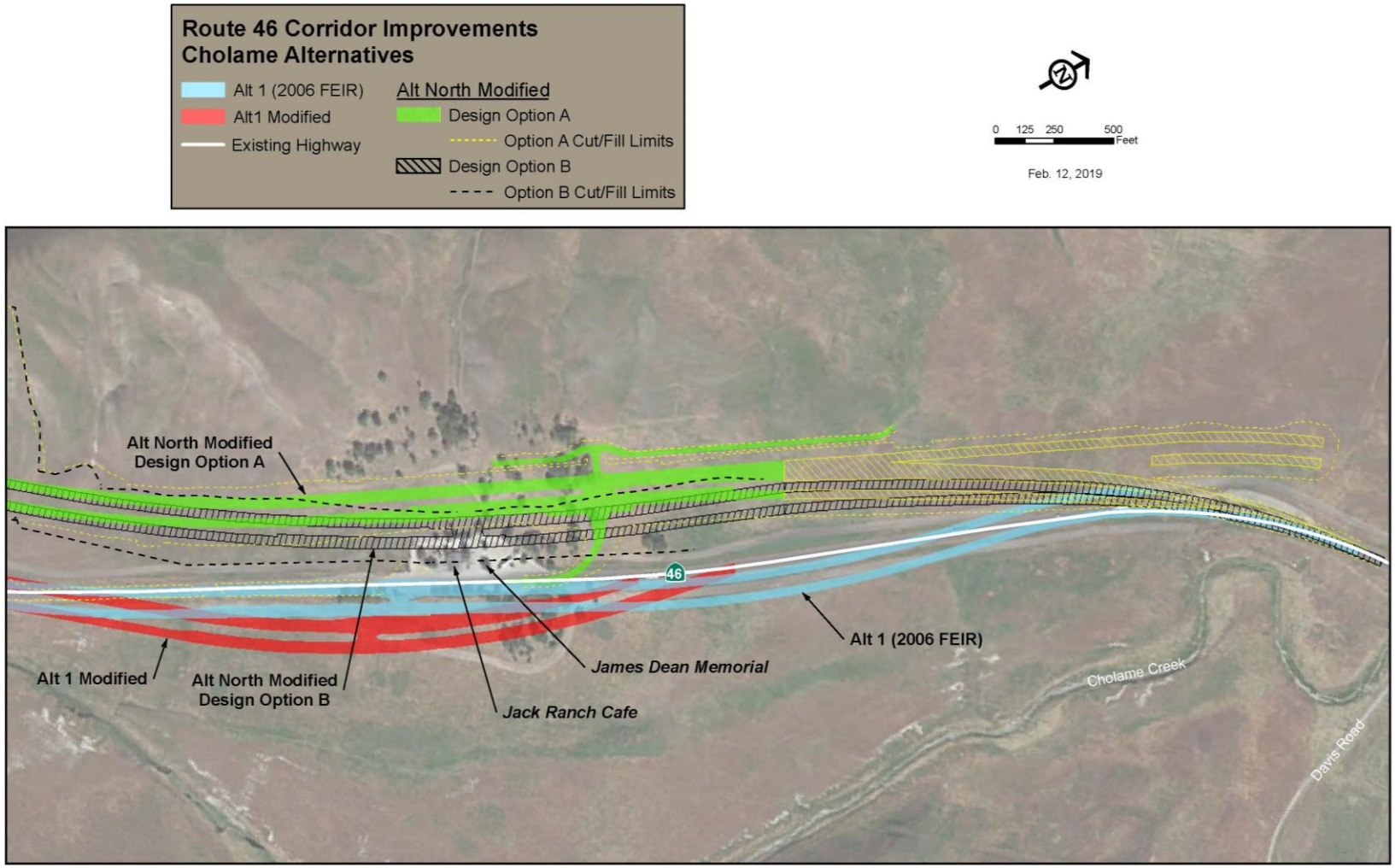


Figure S.2-2 Cholame Alternatives in Vicinity of the Jack Ranch Café

S.2-2 New Project Features Associated with the Cholame North Modified Alternative (Option A)

In addition to the highway alignment modifications, the Cholame North Modified Alternative (Option A) also includes new project features which are analyzed and discussed in this Supplemental Draft EIR/Updated EA.

New project features associated with the Cholame Section.

- Construction of a Rock Slope Protection (RSP) lined channel from PM 50.7 to PM 51.0.
- Construction of two California Highway Patrol (CHP) commercial vehicle enforcement facilities (mini sites), one for eastbound traffic near PM 51.0 and one for westbound traffic near PM 51.2.
- Two new Changeable Message Signs (CMS's) one facing eastbound traffic and one facing westbound traffic near PM 54.0.
- Retain the existing two-lane highway from PM 54.1- 54.4 to facilitate development of a potential design of the Cholame Valley Road and Davis Road connection to the future Wye Section preferred alternative 8b.
- An 1,825-foot-long unpaved engineered fill slope would be constructed at the easternmost end of the Cholame Section, just north of where the proposed four-lane expressway will join the existing two-lane highway (PM 54.3 to PM 54.6). This fill slope would become the future four-lane highway connection used to join the subsequent Wye Section to the new four-lane alignment. The location of the fill slope can be seen on Figures S.2-1 and S.2-2.

S.3 Change in the Environmental Setting

The list below represents changes to the environmental setting that have occurred since finalization of the 2006 EIR/FONSI.

- Addition of a noise receptor (mobile home) within the limits of the Cholame Section that was not evaluated in the 2006 EIR/FONSI.

- Listing of the California tiger salamander on the California Endangered Species Act (CESA) as a state threatened species in 2010

- Listing of the Crotch bumblebee (*Bombus crotchii*) as a state candidate species in June of 2019 after updated biological surveys were complete, therefore this species will be addressed in the Supplemental Final EIR/Updated EA.

- A portion of eastern San Luis Obispo County was designated as a non-attainment area for the National Ambient Air Quality Standards (NAAQS) for 8-hour ozone in 2012.

S.4 Change to Best Management Practices (BMP's), Minimization and Mitigation Measures

Over time, changes have occurred to the BMP's, minimization and mitigation measures discussed in Chapters 3 and 6 of the 2006 EIR/FONSI. Some measures have been omitted, some have changed, and some have been added to the Cholame Section. Discussions associated with these changes are organized by resource and are included in Chapter 3 and summarized in Chapter 6 of this Supplemental Draft EIR/Updated EA. For instance, changes in Air Quality Minimization Measures are analyzed in Chapter 3 under the Air Quality Section (Section 3.1.1) and are summarized in Chapter 6 under Air Quality.

S.5 Change in Laws, Regulations and Guidance

Energy and Greenhouse Gas Emissions and Wildfire

2019 Amendments to the CEQA Guidelines require that an EIR include analysis of a projects' energy impacts [CEQA Guidelines Section 15126.2. Subdivision (b)]; require that lead agencies make significance determination on a projects greenhouse gas emission [CEQA Guidelines Section 15064.4 Subdivision (a)]; and finally include amendments to the initial study checklist for inclusion of questions related to fire hazard impacts for projects located on lands classified as state responsibility areas and on land classified as very high fire hazard severity zones. The questions in the initial study checklist regarding wildfire hazards is written in the context of CEQA Guidelines Section 15064(d)(2).

For a discussion about the projects effects on greenhouse gas emission refer to Section 5.2.7. For discussion about the project effects on energy consumption please refer to Section 3.1.9. The Cholame Section is not located within or near a very high fire hazard severity zone as mapped by CalFire, therefore analysis of the project's potential impacts on wildfire hazards is not included in this document.

National Pollution Discharge Elimination System (NPDES) Permit; Caltrans Municipal Separate Storm Sewer Systems (MS4) Permit; Statewide Storm Water Management Plan (SWMP) and Construction General Permit

Because Caltrans has jurisdiction over storm water conveyances or conveyance systems such as roads with drainage systems, culverts, storm drains etc.…it has been identified by the State Water Resources Control Board (SWRCB) as an MS4 owner or operator. Every 5 years the SWRCB or the Regional Water Quality Control Board (RWQCB) issues National Pollution Discharge Elimination System (NPDES) permits to MS4 owners/operators, such as Caltrans. The most recent MS4 permit was approved by the SWRCB on July 1, 2012 and became effective on July 1, 2013. To comply with the MS4 permit, Caltrans is required to develop a Statewide Stormwater Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction and

maintenance activities. The most recent SWMP became effective on July 20, 2016.

Project approval for the *Corridor Project* occurred in May of 2006. The new Caltrans' Permit, Order No. 2012-0011-DWQ, effective July 1, 2013 states, under the Project Planning and Design section, that the new permit requirements only apply to new and redevelopment projects that have not completed the project initiation phase. Because the project initiation phase for the *Corridor Project* was completed prior to the new NPDES effective date, the *Corridor Project* is grandfathered into the permit requirements listed under the old NPDES permit (Order No. 99-DWQ-06) dated July 15, 1999. However, the *Corridor Project* will be operating under the new NPDES Permit (Order No. 2012-0011-DWQ) but is not required to implement the new permit requirements.

As a requirement of the MS4 Permit, Caltrans must comply with the Construction General Permit (Order 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ) which 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. The most recent Construction General Permit was adopted by the SWRCB on September 2, 2009 and became effective on July 17, 2012.

Please refer to Chapter 3, Section 3.1.4 for a discussion of how these newly adopted regulations have changed the analysis and avoidance, minimization and mitigation measures since the 2006 EIR/FONSI was finalized.

S.6 Potential Changes to Resource Impacts

Caltrans conducted updated analysis on all resources within the limits of the Cholame Section to determine if the proposed changes have the potential to change the environmental impacts and/or findings described in the 2006 EIR/FONSI as they relate to the Cholame Section.

The proposed Cholame North Modified Alternative (Option A) has the potential to increase impacts to visual, biological, farmland and cultural resources. However, with the implementation of avoidance, minimization and mitigation measures, potential impacts to visual, biological and farmland resources can be reduced to below significant. Potential impacts to cultural resources will be mitigated but cannot be reduced to below significant.

Additional avoidance minimization and mitigation measures beyond those described in the 2006 EIR/FONSI are being proposed to reduce impacts to biological, visual and cultural resources. Chapter 3 provides a discussion of each environmental resource that would be affected (negatively or positively) by changes to the *Corridor Project* since the 2006 EIR/FONSI and discusses proposed BMP's, Minimization and Mitigations Measures. For a summary of all

BMPs, Minimization and Mitigation Measures proposed for implementation in the Cholame Section, please refer to Chapter 6.

The paragraphs below briefly summarize the potential increase or change in impacts to cultural, visual, biological and farmland resource as a result of the proposed project changes within the Cholame Section.

Cultural

The Cholame North Modified Alternative (Option A) would result in an adverse effect to a prehistoric cultural resource that is eligible for listing in the National Register. See Section 3.3.3 for further discussion about this resource, the projects potential impacts and proposed minimization and mitigation measures.

Visual

An increase in visual impacts would result from the large cut slopes required to construct the proposed Cholame North Modified Alternative (Option A). Additionally, the proposed CHP inspection station, the CMS signs and the RSP lined channel also have the potential to reduce the visual quality of the area. See Section 3.3.1 for further discussion about potential visual impacts associated with the proposed Build Alternative.

Biological

Several new biological resources have been discovered within the limits of the Cholame Section since certification of the 2006 EIR/FONSI. The following “New Resources” have the potential to be impacted by the project: Scale broom scrub plant community and protruding buckwheat plant as well as habitat for Northern California legless lizard; California glossy snake; American badger; Swainson’s hawk and golden eagle. In addition to potential impacts to newly discovered species, the following previously identified resources discussed in the 2006 EIR/FONSI will see an increase in permanent impacts as a result of the new proposed Build Alternative: A minor increase (.014 acre) impact to Other Waters of the U.S.(below the ordinary high water mark) and .326 acre increase in non-riparian streambank (above the ordinary high water mark); additional 0.36-acre impact to coast horned lizard habitat; 4.52 additional acres of impact to San Joaquin coachwhip habitat; burrowing owl habitat; California horned lark habitat; grasshopper sparrow habitat; San Joaquin kit fox habitat and American badger habitat.

Farmland

The Cholame North Modified Alternative (Option A) will be constructed on an entirely new alignment, resulting in the direct conversion of 169.1 acres of existing farmland into transportation use. Approximately 70 acres of existing highway right-of-way, from post mile 49.7 to post mile 54.1 will be restored back to grassland through removal of the old roadbed and road prism and replanting the area with native grasses. Thus, the total acreage of farmland conversion is offset, resulting in a total net loss of 99.1 acres of farmland. Cholame Alternative 1 (2006

EIR/FONSI preferred alternative) estimated that 111.9 acres of farmland would be converted to transportation use. Therefore, there is not a substantial change in farmland impacts as a result of the new proposed Build Alternative. However, due to a significant change in the highway alignment, farmland impacts are discussed in this Supplemental DEIR/Updated EA under Section 3.3.2.

This page intentionally left blank

Table of Contents

Document Summary iii
Summary of Changes v
S.1 Corridor Section Post Mile Changes v
S.2 Design Modifications to Cholame Section Alternative 1 vi
S.2-1 Highway Alignment Changes Associated with the Cholame North Modified Alternative (Option A) vi
S.2-2 New Project Features Associated with the Cholame North Modified Alternative (Option A) ix
S.3 Change in the Environmental Setting ix
S.4 Change to Best Management Practices (BMP's), Minimization and Mitigation Measures x
S.5 Change in Laws, Regulations and Guidance x
S.6 Potential Changes to Resource Impacts xi
Table of Contents xv
List of Figures xviii
List of Tables xix
Chapter 1 Purpose and Need 1
1.1 Background 1
1.2 Purpose 1
1.3 Need 2
1.3.1 Traffic Capacity Problems 2
1.3.2 Present and Future Traffic and Level of Service 2
1.3.3 Safety 5
1.3.4 Current Deficiencies 5
Chapter 2 Description of the Project Alternatives 9
2.1 Project Description 13
2.2 History of the Project Since Finalization of the 2006 EIR/FONSI 13
2.2.1 Related Projects (Incorporate by Reference) 14
2.2.2 Projects Development (Incorporate by Reference) 14
2.3 Alternatives Under Consideration 14
2.3.1 Cholame Section Alternatives Under Consideration 15
2.3.2 Cost Comparison of the Cholame Alternatives 17
2.3.3 Funding and Programming 17
2.3.4 The Preferred Alternative 17
2.4 Alternatives Considered and Withdrawn 18
2.5 No-Build Alternative 20
Chapter 3 Environmental Setting, Impacts, and Mitigation Measures 25
3.1 Physical Environment 27
3.1.1 Air Quality 27
3.1.2 Geology/Seismic and Soil Types (*Incorporate by Reference*) 43
3.1.3 Hazards and Hazardous Materials 43
3.1.4 Hydrology, Floodplains, Water Quality and Storm Water Runoff 51
3.1.5 Noise 65
3.1.6 Topography (Incorporate by Reference) 73

3.1.7 Paleontology (Incorporate by Reference) 73
3.1.8 Mineral Resources (Incorporate by Reference) 73
3.1.9 Energy 73
3.2 Biological Environment 77
3.2.1 Natural Communities (Vegetation section of the 2006 EIR/FONSI) 77
3.2.2 Wetlands and Other Waters 86
3.2.3 Plant Species (Vegetation section of the 2006 EIR/FONSI) 98
3.2.4 Animal Species 108
3.2.5 Threatened and Endangered Species 132
3.2.6 Invasive Species 151
3.3 Socio-Economic Environment 154
3.3.1 Visual Resources 154
3.3.2 Farmland Resources 163
3.3.3 Cultural Resources 172
3.3.4 Land Use, Planning and Growth (Incorporate by Reference) 177
3.3.5 Populations, Communities and Housing (Incorporate by Reference) 177
3.3.6 Public Services (Incorporate by Reference) 177
3.3.7 Transportation and Traffic (Incorporate by Reference) 177
3.3.8 Utilities and Service Systems 177
3.4 Borrow Sites, Disposal Sites and Construction Staging Areas 177
3.5 Relationship Between Local Short-Term Uses of the Environment and Maintenance and Enhancement of Long-Term Productivity (Incorporate by Reference) 178
3.6 Irreversible and Irretrievable Commitments of Resources (Incorporate by Reference) 178
3.7 Unavoidable Adverse Impacts Irreversible 178
Chapter 4 Cumulative Impacts 179
4.1 Cumulative Impacts 179
Chapter 5 Environmental Significance Checklist 191
5.1 Determining Significance under the California Environmental Quality Act 191
5.2 CEQA Environmental Checklist 191
5.2.1 Aesthetics 192
5.2.2 Agriculture and Forest Resources 193
5.2.3 Air Quality 194
5.2.4 Biological Resources 195
5.2.5 Cultural Resources 196
5.2.6 Energy 197
5.2.7 Greenhouse Gas Emissions 197
5.2.8 Hydrology and Water Quality 198
5.2.9 Noise 199
5.2.10 Tribal Cultural Resources 200
5.2.11 Utilities and Service Systems 200
5.2.12 Wildfire 201
5.2.13 Mandatory Findings of Significance 202
5.3 Climate Change 203

Chapter 6 Avoidance Minimization and Mitigation Summary 225
6.1 Air Quality 225
6.2 Geology/Seismic and Soil Types (Incorporate by Reference) 228
6.3 Hazards and Hazardous Material 228
6.4 Hydrology, Floodplains, and Water Quality 229
6.5 Noise 232
6.6 Topography and Visual Features (Incorporate by Reference) 234
6.7 Paleontological Resources (Incorporate by Reference) 234
6.8 Biological Resources 234
6.8.1 Vegetation 234
6.8.2 Wildlife 240
6.8.3 Invasive Species (New Section) 255
6.8.4 Wetlands & Vernal Pools 257
6.9 Visual Resources 259
6.10 Cultural Resources 264
6.11 Population, Communities, and Housing (Incorporate by Reference) 265
6.12 Public Services (Incorporate by Reference) 265
6.13 Transportation and Traffic (Incorporate by Reference) 265
6.14 Utilities and Service Systems (Incorporate by Reference) 265
Chapter 7 Consultation and Coordination 267
Chapter 8 List of Preparers 269
Chapter 9 Distribution List 271
Chapter 10 Title VI Policy Statement 273
Appendix A List of Technical Studies 275
Appendix B United States Fish and Wildlife Species List 277
Appendix C National Marine Fisheries Service Species List 285
Appendix D Farmland Conversion Impact Rating 289
Appendix E USFWS - No Further Section 7 Consultation Required (E-Mail) and Biological Opinion 291
Appendix F CDFW Incidental Take Permit 319

List of Figures

Figure S.2-1 Cholame Alternatives vii
Figure S.2-2 Cholame Alternatives in Vicinity of the Jack Ranch Café viii
Figure 1.3.2-1 Levels of Service and Traffic Conditions for Two-lane Highways 3
Figure 1.3.4-1 County Road and Private Driveway Access 6
Figure 1.3.4-2 Driveway Access to the Jack Ranch Café 7
Figure 2-1 Project Vicinity Map 11
Figure 2-2 Project Location Map 12
Figure 2.4.3-1 Cholame Alternatives 23
Figure 2.4.3-2 Cholame Alternatives near Jack Rach Cafe 24
Figure 3.1.3-1: Known Hazardous Waste Sites within the Cholame Section 47
Figure 3.1.5-1: Noise Levels of Common Activities 67
Figure 3.1.9-1: Fuel Consumption related to Vehicle Speed 76
Figure 3.2.2-1: Focused Study Areas for Jurisdictional Water Assessment 93
Figure 3.2.2-2: Focused Jurisdictional Water Assessment at Location A of Cholame Creek – Intermittent Stream 94
Figure 3.2.2-3: Focused Jurisdictional Water Assessment at Location B of Cholame Creek – Perennial Stream 95
Figure 3.2.2-4: Focused Jurisdictional Water Assessment at Location C of the White Canyon Drainage – Intermittent Stream 96
Figure 3.2.5-1: Breeding Pools for California Tiger Salamander depicting the maximum dispersal distance of individual salamanders (1.3-miles) 137
Figure 3.3.1-1: Existing view of SR 46 looking east approximately two miles east of the Shandon Roadside Rest Area. 156
Figure 3.3.1-2: Future view looking east from the new alignment of the proposed Cholame North Modified Alternative (Option A) 156
Figure 3.3.1-3: Existing view of SR 46 looking west near the Jack Ranch Café. 157
Figure 3.3.1-4: Simulated westbound view near the Jack Ranch Café as seen from the proposed Cholame North Modified Alternative (Option A). 157
Figure 3.3.2-2: FMMP Farmland Classification Map 168
Figure 3.3.2-3: Land Under Agricultural Preserve and Williamson Act Contract-Cholame Section 169
Figure 4.1-1 Cultural Resource Study Area 181
Figure 4.1-2 Biological Resource Study Areas 185
Figure 5.4-1: 2020 Business as Usual (BAU) Emissions Projection 2014 Edition 208
Figure 5.4-2 Possible Use of Traffic Operation Strategies in Reducing On-Road CO_2 Emissions 209
Source: Matthew Barth and Kanok Boriboonsomsin, University of California, Riverside, May 2010 (http://uctc.berkeley.edu/research/papers/846.pdf) 209

List of Tables

Table S.1-1: Project Section Post Mile Changes v
Table 1.3.2-1 Existing and Predicted Future LOS – Cholame Section 4
Table 1.3.3-1 Recent Accident Totals (Cholame and Wye Sections) 5
Table 2.3.2-1 Estimated Cost for Each Cholame Alternative 17
Table 3.1.1-1: Red Hills Monitoring Site Annual Ozone Summary Data 30
Table 3.1.1-2: Paso Robles Monitoring Site Annual Ozone Summary Data 31
Table 3.1.1-3: Paso Robles Monitoring Site Annual PM_{10} Summary Data 31
Table 3.1.1-4: Paso Robles Monitoring Site Annual Ozone Summary Data 32
Table 3.1.1-5 Daily Peak-Hour Emission Estimates 36
Table 3.1.3-1: Petroleum Product Pipelines in Conflict per Alternative 49
Table 3.1.5-1: Noise Abatement Criteria 66
Table 3.1.5-2 Existing and Predicted Noise Levels – Cholame Section 71
Table 3.1.9-1: Existing and Projected Fuel Consumption for Mobile Sources 75
Table 3.1.9-2: Yearly Fuel Consumption for Construction 75
Table 3.2.2-1: Impacts to Jurisdictional Features Mapped in the Biological Study Area for Cholame North Modified Alternative (Option A) 91
Table 3.2.3-1:Plant Species Occurring or Known to Occur within the Cholame Section 100
Table 3.2.4-1: Animal Species Occurring or Known to Occur within the Cholame Section 109
Table 3.2.5-1 Federal and/or California Endangered Species Act Preliminary Effect Findings 143
Table 3.3.2-1: Dollar Value (millions) of each major agricultural industry 164
Table 3.3.2-2 Conversion Impact Rating Score 2006 vs. 2018 170
Table 4.1-1 Projects Evaluated within the Cultural Resource Study Area 183
Table 4.1-2 Projects Evaluated within the American badger Resource Study Area 187
Table 4.1-3 Projects Evaluated within the Pallid Bat Resource Study Area 189
Table 5.4-1: Modeled Annual CO_2 Emissions and Vehicle Miles Traveled by Alternative 211
Table 5.4-2. Average Required Fuel Economy (mpg) 213

This page intentionally left blank

Chapter 1 Purpose and Need

1.1 Background

The Route 46 Corridor Improvement Project (*Corridor Project*) was initiated by the San Luis Obispo Council of Governments (SLOCOG) to improve operations on State Route 46 between Airport Road, (PM 32.2) in the City of Paso Robles to the east junction of the State Routes 41 and 46, (PM 56.3). The *Corridor Project* proposes to improve the corridor by converting the existing two-lane highway to a four-lane divided expressway. On May 10, 2006, the California Department of Transportation (Caltrans) approved the Final Environmental Impact Report/Finding of No Significant Impact (2006 EIR/FONSI) for the State Route 46 Corridor Improvement Project – *Corridor Project*. Construction of the first two Sections, from PM 32.2 to PM 50.2 (Estrella and Shandon) have been completed.

The intent of this Supplemental Draft EIR/Updated EA is to focus on analyzing potential environmental impacts in the Cholame Section (third Section) of the *Corridor Project* associated with changes that have occurred since finalization of the 2006 EIR/FONSI. Since design of the Cholame Section began in 2014, it became evident that the 2006 EIR/FONSI preferred alternative (Alternative 1) was no longer a viable alternative due to extensive utility relocation costs. Upon this discovery, the project design team began to adjust the highway alignment associated with the Cholame Alternative 1 to reduce utility relocation costs and develop a viable alternative. These alignment adjustments resulted in the preliminary development of two additional alternatives (Cholame Alternative 1 modified; Cholame North Modified Alternative (Design Options A and B). Chapter 2, Section 2.3 describes the new proposed Build Alternative, Cholame North Modified Alternative (Option A). Chapter 2, Section 2.4 provides a discussion about other alternatives that were considered and withdrawn from further development.

1.2 Purpose

The purpose of the *Corridor Project* remains the same as what is described in the 2006 EIR/FONSI. The *Corridor Project* (as thus far completed and currently proposed) serves to minimize fatal accidents, improve safety and reduce congestion on State Route 46 between Paso Robles and Cholame.

1.3 Need

1.3.1 Traffic Capacity Problems

Peak hour traffic congestion has diminished substantially within the Estrella and Shandon Sections (PM 32.2 to PM 50.2) since improvements were constructed. However, the remaining two-lane Sections of the corridor continue to experience peak hour congestion. “Peak hour” is defined as the interval of time during which the average daily traffic is heaviest. The annual average daily traffic (AADT) in 2017 averaged 15,400 vehicles per day within the project limits. Of this, about 17% of the traffic volume were trucks and 60% of the trucks are 5-axle and larger. The projected AADT for 2022 is 16,500 and for the design year 2042 is 22,500. Limited passing opportunities cause traffic to back up behind slower moving vehicles along the remaining two-lane sections of the corridor. Impatient drivers often take unnecessary risks as they attempt to pass and overtake slower vehicles, which could lead to an increase in collision rates.

1.3.2 Present and Future Traffic and Level of Service

Construction of the Whitley 2B Segment was recently completed in July 2019, therefore updated traffic information for Whitley 2B has not been analyzed. However, LOS data was analyzed by Caltrans Division of Traffic Operations for the completed portions of the Project (Estrella Section and Whitley 2A Segment) from PM 32.2 to PM 46.3. The current weekday AM and PM peak hour LOS for the Estrella Section (PM 32.2/41.2) operates at a LOS “A” while the weekend peak hour LOS (Fridays and Sundays) operates at a LOS “B” or better. The peak hour LOS for the Whitley 2A Segment (PM 40.7/46.3) operates at a LOS “B” or better. Prior to the widening project, the LOS for the entire corridor was operating at a level “E” during peak hour. Figure 1.3.2-1 provides an example of LOS as it relates to congestion.

Within the Cholame Section, weekday peak hour traffic is currently operating at LOS “C” whereas weekend peak hour traffic is currently operating at LOS “D”. Without the project, the LOS for design year 2042[1] would degrade to LOS “E” during the weekday and weekend peak hours. With the project, the design year 2042 predicted LOS would improve for all the peak periods, with weekday peak operating at LOS “A” and weekend peak period operating at LOS “C” or better.

Table 1.3.2-1 provides an analysis of traffic conditions for the Cholame Section. The table shows existing (2017) traffic conditions and predicted traffic conditions with and without construction of the proposed build alternatives. The tables also provide information on the percent of total travel

[1] Design Year: 20 years following completion of the project.

time that vehicles must travel in platoons behind slower moving traffic due to inability to pass, which is referred to as Percent Time-Spent Following (PTSF), average travel speed (ATS) and average number of passenger cars per mile per lane (Density).

LEVEL OF SERVICE

for Two-Lane Highways

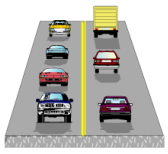
Level of Service	Flow Conditions	Percent Time Spent Following/ AverageTravel Speed (mph)	Technical Descriptions
A		Less than 35% **Greater than or equal to 55 mph**	Free-flow conditions with a high level of passing opportunities. **No delays**
B		35 to 50% **51 to 55 mph**	Free-flow conditions but presence of other vehicles is noticeable. Passing opportunities become more infrequent. **No delays**
C		50 to 65% **46 to 50 mph**	Vehicles occur in a platoon most of the time. Passing demand exceeds passing capacity. **Minimal delays**
D		65 to 80% **41 to 45 mph**	Unstable traffic flow with passing becoming extremely difficult. Passing demand is high, but passing capacity approaches zero. **Delays**
E		Greater than 80% **Less than or equal to 40 mph**	Conditions at or near capacity with a majority of time spent following other drivers. Nearly no passing opportunities **Significant delays**
F		Nearly 100% **Travel speed highly variable**	Heavily congested flow with queues forming at locations where demand exceeds capacity. Vehicle speeds are highly variable. **Considerable delays**

Figure 1.3.2-1 Levels of Service and Traffic Conditions for Two-lane Highways

Table 1.3.2-1 Existing and Predicted Future LOS – Cholame Section

2017 Existing (Cholame, PM 49.7/54.7)

	Westbound			Eastbound		
	PTSF[2]	ATS[3] (mph)	LOS[4]	PTSF	ATS (mph)	LOS
Weekday AM Peak	59.9%	50.1	C	56.4%	50.9	C
Weekday PM Peak	60.1%	48.2	C	63.8%	48.5	C
Friday Peak	74.8%	43.9	D	69.6%	44.2	D
Sunday Peak	73.9%	44.0	D	74.3%	44.3	D

HCM 2016 Two-Lane Highway

2042 No-Build Alternative (Cholame, PM 49.7/54.7)

	Westbound			Eastbound		
	PTSF	ATS (mph)	LOS	PTSF	ATS (mph)	LOS
Weekday AM Peak	67.7%	46.4	D	65.4%	46.8	D
Weekday PM Peak	69.5%	43.3	D	72.4%	43.8	D
Friday Peak	78.8%	38.2	E	74.3%	38.6	E
Sunday Peak	74.5%	38.8	E	76.6%	39.2	E

HCM 2016 Two-Lane Highway

2042 4-Lane Expressway (Cholame, PM 49.7/54.7)

	Westbound			Eastbound		
	Density[5] (pc/mi/ln)	ATS (mph)	LOS	Density (pc/mi/ln)	ATS (mph)	LOS
Weekday AM Peak	9.0	61.3	A	9.7	61.3	A
Weekday PM Peak	9.9	61.3	A	13.6	61.3	B
Friday Peak	16.0	61.3	B	15.4	61.3	B
Sunday Peak	11.9	61.8	B	18.1	61.3	C

HCM 2016 Multilane Highway

[2] Percent Time-Spent Following: The average percent of total travel time that vehicles must travel in platoons behind slower vehicles due to inability to pass on a two-lane highway

[3] Average Travel Speed: The length of the highway segment divided by the average travel time of all vehicles traversing the segment, including all stopped delay times.

[4] Level of Service: A qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience.

[5] Density (pc/mi/ln): Passenger cars per mile per lane.

1.3.3 Safety

Updated collision history data gathered during the 36-month period between September 1, 2012 and August 31, 2015 indicates that the collision rate within the corridor sections that have been constructed (PM 32.15-PM 46.3) continue to be below the statewide average.

Table 1.3.3-1 below shows the number of collisions and collision rates between PM 49.7 and 58.3 from September 1, 2012 to August 31, 2015. While the collision rate within the Cholame Section is less than the statewide average for similar facilities, the collision rate within the Wye Section is higher than the statewide average. In the Wye Section, during the same three-year period, a total of 23 collisions occurred, 11 of those collisions involved injuries and 1 involved a fatality. The collision rates for the 3.6-mile-long Wye Section were above the statewide average for all three categories (Fatal, Fatal + Injury [F+I] and Total). The 0.035 Million Vehicle Miles (MVM) Actual Fatal collision rate is over two times higher than the statewide average (0.016). The Actual Fatal plus Injury (F+I) rate was 0.42 MVM, 1.8 times higher than the statewide average (0.23).

Table 1.3.3-1 Recent Accident Totals (Cholame and Wye Sections)

2012-09-01 to 2015-08-31 (36 months)	No. of Collisions			Collision Rates (per million vehicles miles, MVM)					
				[6]Actual			[7]Average		
Segment	Total	Fatal	Injury	Fatal	F+I	Total	Fatal	F+I	Total
PM 49.7 - 54.7 (Cholame)	24	0	7	0.000	0.09	0.31	0.017	0.25	0.57
PM 54.1 – 58.3 (Wye)	23	1	11	0.035	0.42	0.80	0.016	0.23	0.53

1.3.4 Current Deficiencies

Design Standards

Design standards are developed and tested over time to maximize driver safety and standardize drivers' expectations. The existing two-lane conventional highway consists of 12-foot lanes and outside shoulder widths varying from 4 to 10 feet.

[6] Actual – The collision rate for the highway segment
[7] Average – Statewide average rate for similar highway segments

Caltrans mandatory highway design standards for a 4-lane expressway will continue to be implemented in the construction of the Cholame North Modified Alternative (Option A).

Local Access

At grade intersections at each County Road and private driveway location within the Cholame Section will be constructed. There are a currently eight private driveway access points and two County Road access points in the Cholame Section (Lucy Brown Road and Bitterwater Road). With exception to the Jack Ranch Café, all private and county road accesses will to continue to function the same way. Vehicles will be able to turn right into the driveways and county roads and turn right out of the driveways and county roads (right-in, right-out). Left turn movement into the driveways and county roads will be through a left turn pocket and left turn movement out of the driveways onto the new expressway will be through a median opening, to merge into the through lane. Figure 1.3.4-1 provides a visual representation of how the private driveway and county road would be accessed.

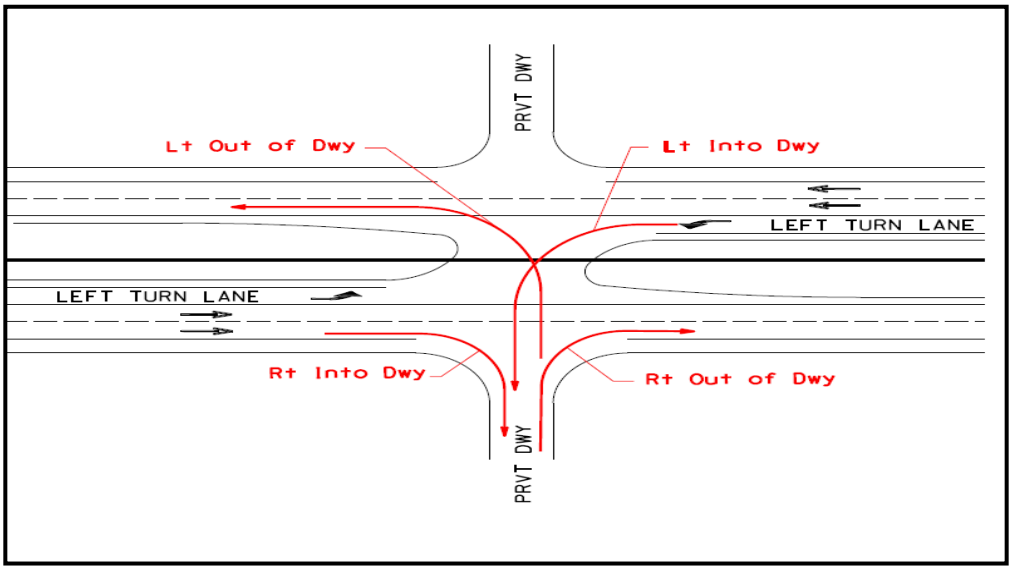


Figure 1.3.4-1 County Road and Private Driveway Access

New access to the Jack Ranch Café will be achieved by constructing an at grade intersection with acceleration and deceleration lanes. The intersection would provide access to a driveway on the south leading to the Jack Ranch Café and driveway to the north leading to an existing unpaved ranch road. Figure 1.3.4-2 provides a visual representation of how the Jack Ranch Café and private driveway to the north would be accessed.

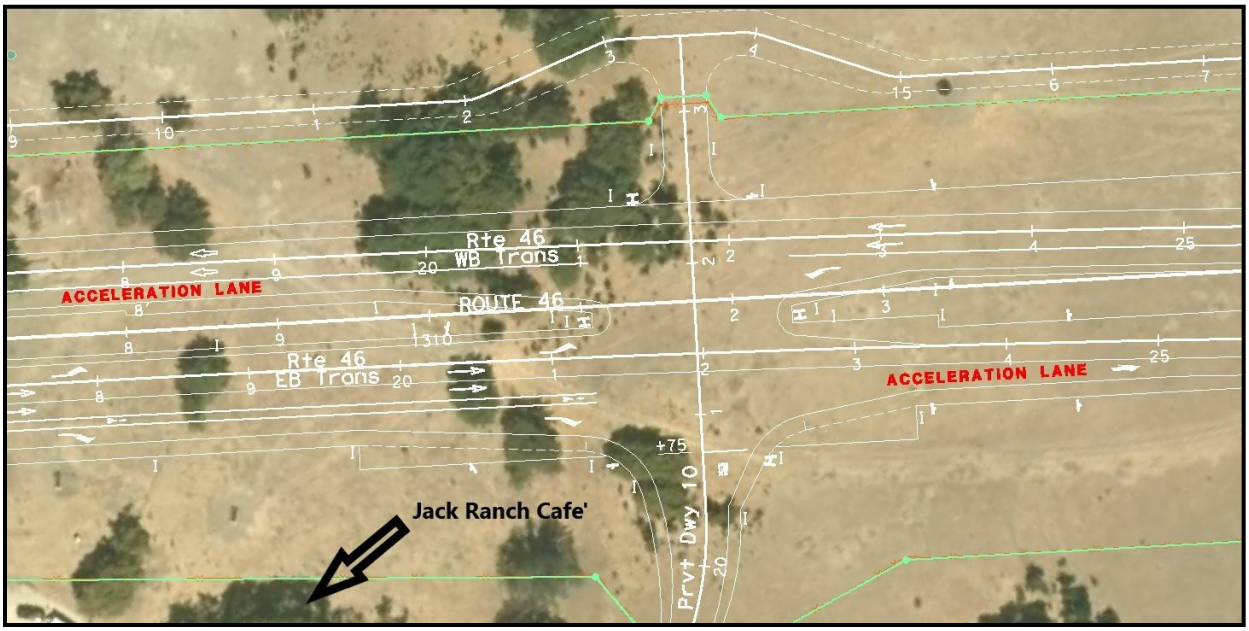


Figure 1.3.4-2 Driveway Access to the Jack Ranch Café

This page intentionally left blank

Chapter 2 Description of the Project Alternatives

This section of the document provides a description of the Cholame North Modified Alternative (Option A) and discusses how this new proposed Build Alternative differs from the Cholame Section preferred alternative (Alternative 1) selected in the 2006 EIR/FONSI. This chapter also includes a description of Cholame Section alternatives that were considered and eliminated from further development.

A vicinity map showing the *Corridor Project* sections and smaller segments for the entire Route 46 Corridor Improvement Project can be viewed in Figure 2-1 below. A location map showing the begin and end limits of the Cholame Section can be seen below in Figure 2-2.

This page intentionally left blank

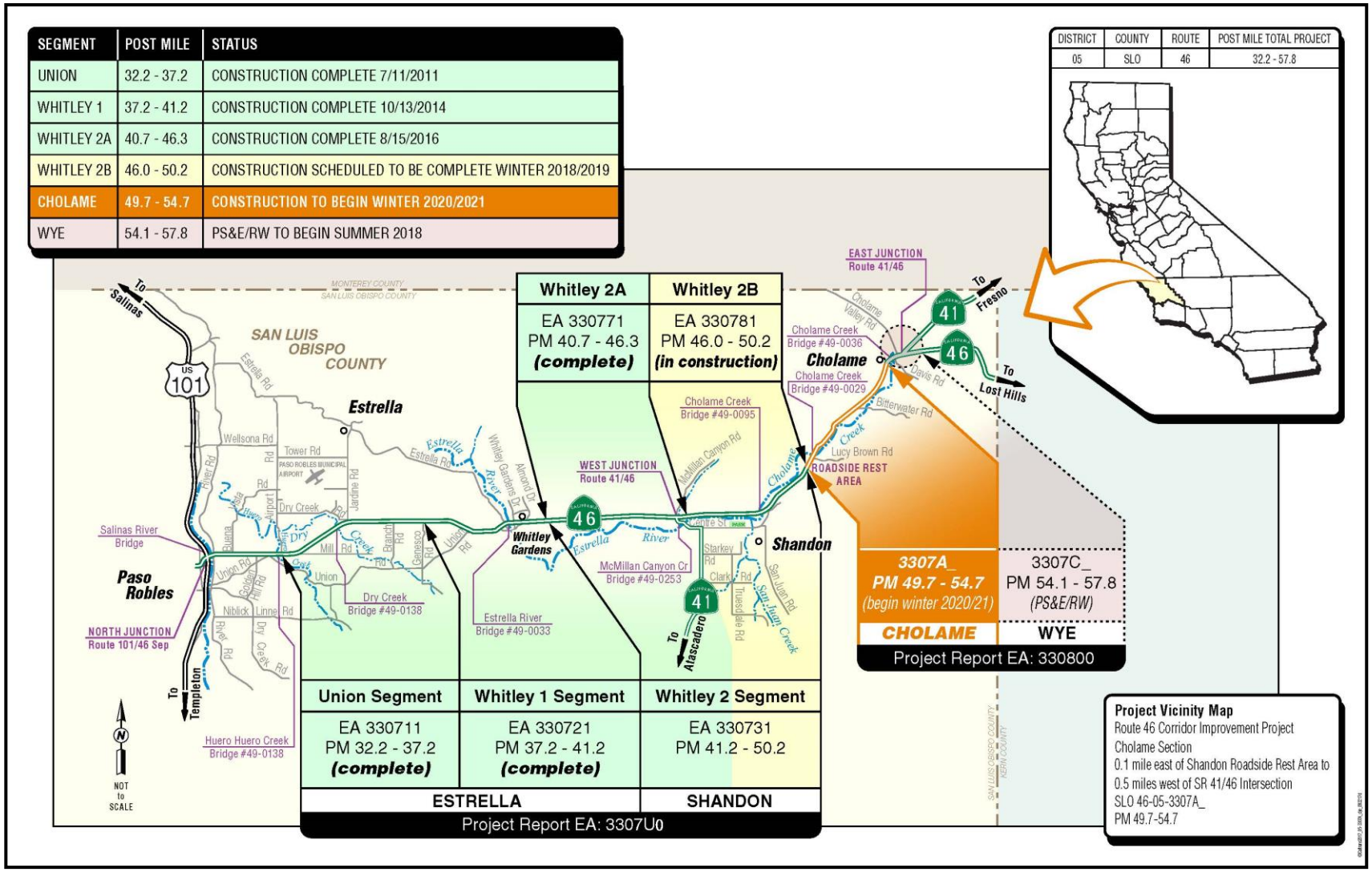


Figure 2-1 Project Vicinity Map

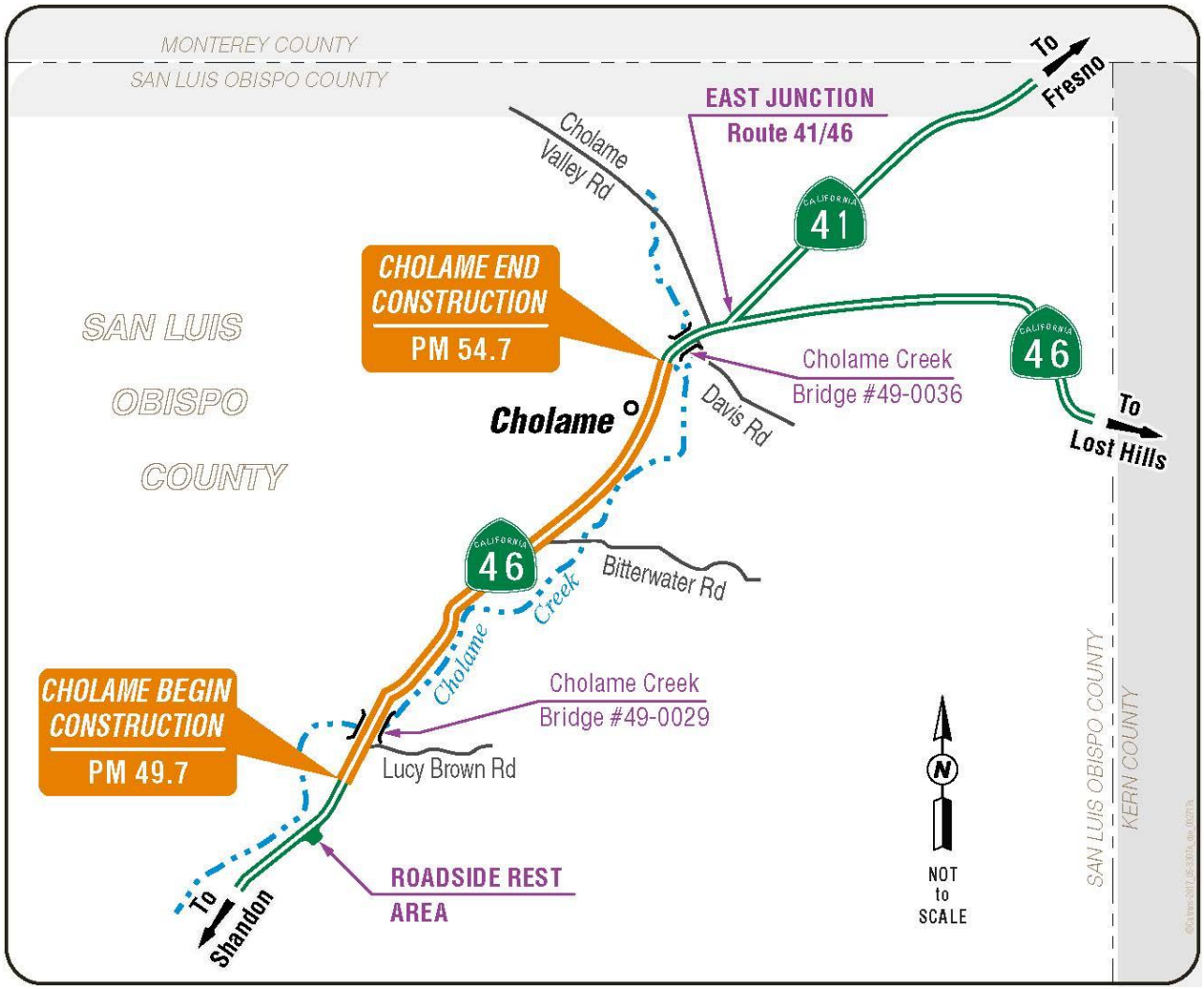


Figure 2-2 Project Location Map

2.1 Project Description

The Cholame Section is the third section of the *Corridor Project* (Figure 2-1). The Cholame Section would continue the widening of the Route 46 Corridor from a two-lane highway to a four-lane divided expressway.

Construction of the Cholame Section would begin at PM 49.7, approximately 0.2 miles east of the Shandon Roadside Rest Area and would continue to post mile 54.7, approximately 0.5 miles west of the State Route 41/46 intersection.

2.2 History of the Project Since Finalization of the 2006 EIR/FONSI

Construction of the Estrella and Shandon Section (Union, Whitley 1, Whitley 2A and Whitley 2B Segments) of the *Corridor Project* converted 18 miles of the previous two-lane highway to a four-lane divided expressway from Airport Road, just east of the City of Paso Robles to the Shandon Roadside Rest Area (PM 32.2-50.2).

Following selection of the Estrella Section preferred alternative (Alternative 8N) and finalization of the EIR/FONSI on May 19, 2006, a Bridge Inspection Report dated September 11, 2006 recommended replacement of the Estrella River Bridge (Br. No. 49-0033) due to Alkali-Silica Reaction (ASR)8. Under Alternative 8N, access to State Route 46 for Estrella Road was routed under the two new bridges spanning Estrella River, via the existing Estrella River Bridge to Whitley Gardens Drive. Due to the Alkali-Silica Reaction and the recommendation from the 2006 Bridge Inspection Report, Caltrans was required to replace the old bridge and relinquish it in a state of good repair to the County of San Luis Obispo. Construction of the new Estrella River bridge took place between April 2013 and January 2014. Relinquishment of the bridge to the County of San Luis Obispo is pending.

[8] Alkali-Silica Reaction (ASR) is a swelling reaction that occurs over time in concrete between the highly alkaline cement paste and the reactive silica found in the cement aggregates.

2.2.1 Related Projects (Incorporate by Reference)

2.2.2 Projects Development (Incorporate by Reference)

2.3 Alternatives Under Consideration

There is one Build Alternative, Cholame North Modified Alternative (Option A), and a No-Build Alternative being considered for the Cholame Section.

In 2006, it was known that there would be utility relocations associated with Cholame Alternative 1 (2006 EIR/FONSI preferred alternative). Of the two viable Cholame Section build alternatives evaluated in the 2006 EIR/FONSI (Alternative 1 and Alternative 2), Alternative 1 had fewer miles of utility pipeline that would have required relocation, greatly reducing the estimated cost. However, in the twelve years following selection of Cholame Alternative 1, utility relocation costs have increased substantially, requiring evaluation of other potential highway alignment options. Caltrans evaluated modifications to the Cholame Alternative 1 alignment by slightly nudging it to the south (Cholame Alternative 1 Modified) as well as two design options under the Cholame North Modified Alternative (Options A and B).

On January 17, 2018 the Caltrans Project Development Team (PDT) formally rejected Cholame Alternative 1, Cholame Alternative 1 Modified and Cholame North Modified Alternative (Option B). Section 2.4 (Alternatives Considered and Withdrawn) provides an explanation for why these alternatives were withdrawn from further consideration.

Table 2.3.2-1 provides an estimate of project costs associated with utility relocation, other right-of-way costs and construction costs associated with Cholame Alternative 1, Cholame Alternative 1 Modified, and Cholame North Modified Alternative (Options A and B).

Major Design Features of the Build Alternative (Incorporate by Reference)

Estrella Section Alternatives Under Consideration (Incorporate by Reference)

Shandon Section Alternatives Under Consideration (Incorporate by Reference)

2.3.1 Cholame Section Alternatives Under Consideration

Preparation of this Supplemental Draft EIR/Updated EA is being written concurrently with the design of the Cholame Section. Therefore, the description of the proposed Build Alternative includes a high level of detail.

Cholame North Modified Alternative (Option A) - Proposed Build Alternative

The Cholame North Modified Alternative (Option A) represents a modification of the Cholame North Alignment Option discussed in the 2006 EIR/FONSI under Section 2.4.3 (Cholame Section Alternatives Withdrawn from Further Consideration). The Cholame North Alignment Option described in the 2006 EIR/FONSI was rejected and withdrawn from further consideration due to public support to avoid impacts to the Jack Ranch Café. Furthermore, the alternative would have been cost prohibitive since it did not adequately avoid existing utilities.

The Cholame North Modified Alternative (Option A) is being developed with the specific intent to avoid the Jack Ranch Café and to minimize utility relocation costs. This new proposed Build Alternative begins at PM 49.7 and ends at PM 54.7. Beginning at PM 49.7, the proposed highway alignment swings to the north, thus avoiding the Tosco pumping plant (now owned by Phillips 66). This alternative remains north of the existing roadway and north of the Jack Ranch Café and James Dean Memorial, reconnecting to the existing two-lane highway at PM 54.7. The Cholame North Modified Alternative (Option A) proposes to construct all four lanes on a new alignment for the entire length of this section (See Figure 2.4.3-1). The new four lane expressway would be separated by a 61.0-foot median.

The Cholame North Modified Alternative (Option A) would involve removal of the existing Cholame Creek Bridge (No. 49-29) and construction of two new bridges over Cholame Creek at PM 50.6 on the new alignment. The new Cholame Creek Bridges would be situated approximately 750 feet north (0.16 miles) of the existing bridge. The Rock Slope Protection (RSP) currently being used to protect the creek bank from erosion at the location of the existing bridge would remain. From the beginning of the Cholame section to the Jack Ranch Café, the existing roadbed would be removed, and the ground regraded and restored back to grassland habitat.

The existing roadbed from PM 54.1 to PM 54.4 would remain to allow for flexibility during the design of the future Wye Section as a potential access road to Davis and Cholame Valley Road. If the roadbed is not needed for the future Wye Section, it will be removed during construction of the Wye.

A 1,300-foot-long RSP lined channel would be constructed adjacent to the north side of the newly proposed four lane expressway, between PM 50.7 and 51.0, just east of the proposed Cholame Creek Bridge. The channel is designed to direct flows along the highway so that water can flow into

Cholame Creek in a controlled way over the RSP protecting the new bridge abutment to minimize erosion of the creek bank. Additional information about this new project feature is discussed in Section 3.1.4 (Hydrology, Floodplains and Water Quality).

This alternative includes construction of two California Highway Patrol (CHP) commercial vehicle enforcement facilities (CHP mini sites) and two permanent changeable message signs (CMS). One CHP inspection site would be constructed for eastbound traffic from PM 51.0 to PM 51.4 and one for westbound traffic from PM 51.2 to PM 51.6. The CMS's, one facing east and one west, would be located at approximately PM 54.0.

While utility conflicts still exist, this alternative fully avoids impacts to underground telecommunication lines and a jet fuel line and substantially decreases the linear footage of gas and oil lines and the number of overhead utility poles that would need to be relocated. The reduction in utility relocation has significantly decreased the cost of constructing the Cholame Section and has allowed for development of a viable alternative. Table 2.3.6-1 provides the current cost estimate for each of the Cholame Section alternatives that have been evaluated.

The Cholame North Modified Alternative (Option A) would require approximately 1,600,000 cubic yards of excavation and embankment, primarily due to the large cut required to construct the alignment behind the Jack Ranch Café and James Dean Memorial site. All the earthwork is balanced, which means that soil will not be needed to be imported or exported, further reducing construction costs as well as air quality impacts and energy usage.

The estimated 2021 Fiscal Year (FY) construction and right of way cost for this alternative is $96 million.

After weighing the costs and benefits associated with each of the alternatives, [Cholame Alternative 1, Cholame Alternative 1 Modified and Cholame North Modified Alternative (B)], the project development team (PDT) has identified the Cholame North Modified Alternative (Option A) as the proposed Build Alternative, subject to public review. Final identification of a preferred alternative will occur after consideration of all comments that are received during the public review and comment period.

Wye Section Alternatives Under Consideration (Incorporate by Reference)

2.3.2 Cost Comparison of the Cholame Alternatives

The current estimated cost for construction year 2021 for each of the Cholame Alternatives that have been analyzed are shown below in Table 2.3.2-1.

Table 2.3.2-1 Estimated Cost for Each Cholame Alternative

Construction Year 2021 Estimated Cost (in Millions of Dollars) Cholame Alternatives				
Alternatives	Utility Relocation Costs	*Other Right-of-Way Costs	Construction Cost	Total Cost
Alternative 1	70.0	4.6	82.4	157.0
Alternative 1 Modified	58.7	3.5	81.9	144.1
North Modified (A)	8.4	4.9	82.7	96.0
North Modified (B)	8.4	5.9	82.7	96.9

*The “Other Right-of-Way Costs” include the cost of property acquisition, regulatory permits and environmental mitigation.

2.3.3 Funding and Programming

The earlier *Corridor Project* sections (Estrella and Shandon) were Prop 1B funded through the Statewide Transportation Improvement Program (STIP) with a combination of Corridor Mobility Improvement Account (CMIA) funds, STIP – Augmentation funds, Regional Transportation Improvement Program (RTIP) funds and Interregional Transportation Improvement program (ITIP) funds. The Cholame Section is programmed in the 2018 STIP with ITIP funds, to be delivered in the 2020/2021 fiscal year. The future Wye Section is programmed in the 2018 STIP with a combination of RTIP and ITIP funds, to be delivered in the 2021/2022 fiscal year. Both the Cholame and Wye sections are fully funded for design, right-of-way and construction.

2.3.4 The Preferred Alternative

Preferred alternatives are not selected until all interested parties have had an opportunity to review and comment on a project during circulation of the draft environmental document. Following public circulation of a draft environmental document, the lead agency (Caltrans) in this case, selects the preferred alternative based on selection criteria such as the degree of environmental impact, cost, satisfying the project purpose and need and the ability of the alternative to accomplish the goals of the project stakeholders including the

public, the Federal Highway Administration, the San Luis Obispo Council of Governments, Caltrans and regulatory agencies.

2.4 Alternatives Considered and Withdrawn

Estrella and Shandon Section Alternatives Withdrawn from Consideration (Incorporate by Reference)

Cholame Section Alternatives Withdrawn from Consideration

For a discussion on the three Cholame alternatives that were withdrawn from consideration in the 2006 EIR/FONSI (Cholame Alternative 4 (PSR); Cholame North Alignment Option (PSR) and Cholame Alternative 3, please refer to the 2006 EIR/FONSI.

The discussion below focuses on Cholame Alternative 1, Cholame Alternative 1 Modified and the Cholame North Modified (Option B). On January 17, 2018 the Caltrans' Project Development Team (PDT) formally rejected these alternatives due to exorbitant project costs, potential hazardous waste concerns and required removal of the Jack Ranch Café.

Cholame – Alternative 1 (2006 EIR/FONSI)

Cholame Alternative 1 was selected as the preferred alternative in the 2006 EIR/FONSI because it would result in fewer impacts to San Joaquin kit fox, other upland species habitat, and would be less costly than Alternative 2 (rejected alternative) due to fewer miles of utility relocation.

Cholame Alternative 1 would shift the alignment to the north of the existing Tosco pumping plant reducing impacts to Cholame Creek and the Tosco Oil Pumping Plant (now owned by Phillips 66). The newly constructed four-lane expressway would rejoin the existing two-lane alignment at PM 52.2. The existing two-lane roadway would be reconstructed into the eastbound lanes of the expressway and two new westbound lanes would be constructed to the north up to post mile 53.6. Beginning at post mile 53.6 to the end of the Cholame Section at post mile 54.7, the roadway would then be widened to the south, converting the existing two-lane roadway into the expressways westbound lanes and constructing two new eastbound lanes to the south of the existing alignment. The four-lane expressway would be separated by a 61.0-foot median throughout the entire Cholame Section.

This alternative would require construction of two new bridges over Cholame Creek at PM 50.6, approximately 0.16 miles north of the existing creek crossing. The existing Cholame Creek Bridge (No. 49-29) would be removed as this structure has been identified as being structurally deficient. Existing rock slope protection used to protect this bridge would be removed and the creek bank restored back to its original slope. The existing roadway to the

west of Bridge No. 49-29 would remain for property access purposes. The existing roadway from east of the existing bridge to where the new alignment rejoins the existing roadway at post mile 54.7 would be removed and the land restored for wildlife habitat.

This alternative would require an estimated 392,000 cubic yards of excavation to complete. In total, 680,000 cubic yards would be needed to construct this alternative, resulting in the need to import approximately 288,000 cubic yards of soil.

Once Caltrans began developing the utility relocation plans, it became evident that the cost of utility relocation was prohibitive. The estimated construction and right of way cost for construction year 2021 for this alternative is $157.0 million, $61 million more than the Cholame North Modified Alternative (Option A). In addition to the exorbitant costs associated with utility relocation, this alternative would require acquisition of portions of the parcels containing the Conoco Phillips (COP) pipeline at Highway 46 and the Hearst Corporation – Jack Ranch Café site (Locations 3 and 4 shown in Figure 3.1.3-1). Due to elevated costs and the need to accept or acquire land containing hazardous waste contamination, this alternative is no longer being considered.

Cholame Alternative 1 (Modified)

This alternative is a modification to the 2006 EIR/FONSI preferred alternative presented above. Prior to evaluating the Cholame North Modified Alternative (Options A and B), Caltrans Design began modifying Cholame Alternative 1 by shifting the alignment to the south of the existing roadway from PM 52.3 to PM 54.3. However, it was not possible to shift the alignment far enough south to reduce the cost of utility relocation without creating a potential floodplain encroachment and unnecessary environmental impacts. Additionally, the highway alignment associated with this alternative would require acquisition of portions of the parcels containing the COP pipeline at Highway 46 and the Hearst Corporation – Jack Ranch Café site (Locations 3 and 4 shown in Figure 3.1.3-1).

Similar to all alternatives, the existing Cholame Creek Bridge (No. 49-29) would be removed and two new bridges would be built over Cholame Creek (PM 50.6). The existing roadbed west of Bridge No. 49-29 would remain for property access purposes, and from east of the existing bridge to the Jack Ranch Café the roadbed would be removed and the ground regraded and restored back to grassland.

The estimated construction and right of way cost for construction year 2021 for this alternative is $144.1 million. This alternative would require acquisition of portions of the parcels containing the COP pipeline at Highway 46 and the Hearst Corporation – Jack Ranch Café site (Locations 3 and 4 shown in Figure 3.1.3-1). Due to elevated costs and the need to accept or acquire land

containing hazardous waste contamination, this alternative is no longer being considered.

Cholame North Modified Alternative (Option B)

The Cholame North Modified Alternative (Option B) represents another modification of the Cholame North Alignment Option discussed in the 2006 EIR/FONSI under Section 2.4.3 (Cholame Section Alternatives Withdrawn from Further Consideration). Like the Cholame North Alignment Option described in the 2006 EIR/FONSI, the Cholame North Modified Alternative (Option B) proposed to widen the highway to the north of the existing alignment from post mile 51.6 to post mile 54.7. However, this alternative would have shifted the alignment to the north just far enough to move it away from the costly utility relocations. Like the 2006 EIR/FONSI Cholame North Alignment Option, this alternative would also have required removing or relocating the Jack Ranch Café and James Dean Memorial and may have resulted in potential hazardous waste concerns due to an existing hazardous waste site on the Café parcel (The Hearst Corporation – Jack Ranch Café site- discussed in Section 3.1.3) as well as in asbestos found in the lead-based paint.

The estimated construction and right of way cost for construction year 2021 for this alternative is 97.0 million.

On August 3, 2016 members of the Caltrans Project Development Team (PDT) held a public meeting with members of the Shandon Advisory Committee and the community of Shandon to present and discuss the Cholame North Modified Alternatives (Options A and B). Community members were not in favor of Design Option B and suggested that Caltrans pursue the option that would avoid the Jack Ranch Café and relocation of the James Dean Memorial.

This alternative has been eliminated as a viable alternative due to public support to avoid impacts to the Jack Ranch Café, James Dean Memorial, and potential hazardous waste concerns.

Wye Section Alternatives Withdrawn from Consideration (Incorporate by Reference)

2.5 No-Build Alternative

The No-Build Alternative would not expand any portion of the existing two-lane highway to a four-lane divided expressway in the Cholame Section. This alternative would not alleviate traffic congestion or bring the roadway up to design standards for safety.

The No-Build Alternative does not satisfy the purpose and need for the project. As discussed in the Purpose and Need Section above, if the improvements to State Route 46 are discontinued, the LOS for the remaining sections of the Corridor Improvement Project (Cholame and Wye) would degrade from an existing LOS “D” to LOS “E”. Additionally, if the No-Build Alternative were to be selected for the Cholame Section, improvements at the Wye would not be completed and the higher than average collision rate at this location would not be addressed as part of the larger Route 46 Corridor Widening Project.

This page intentionally left blank

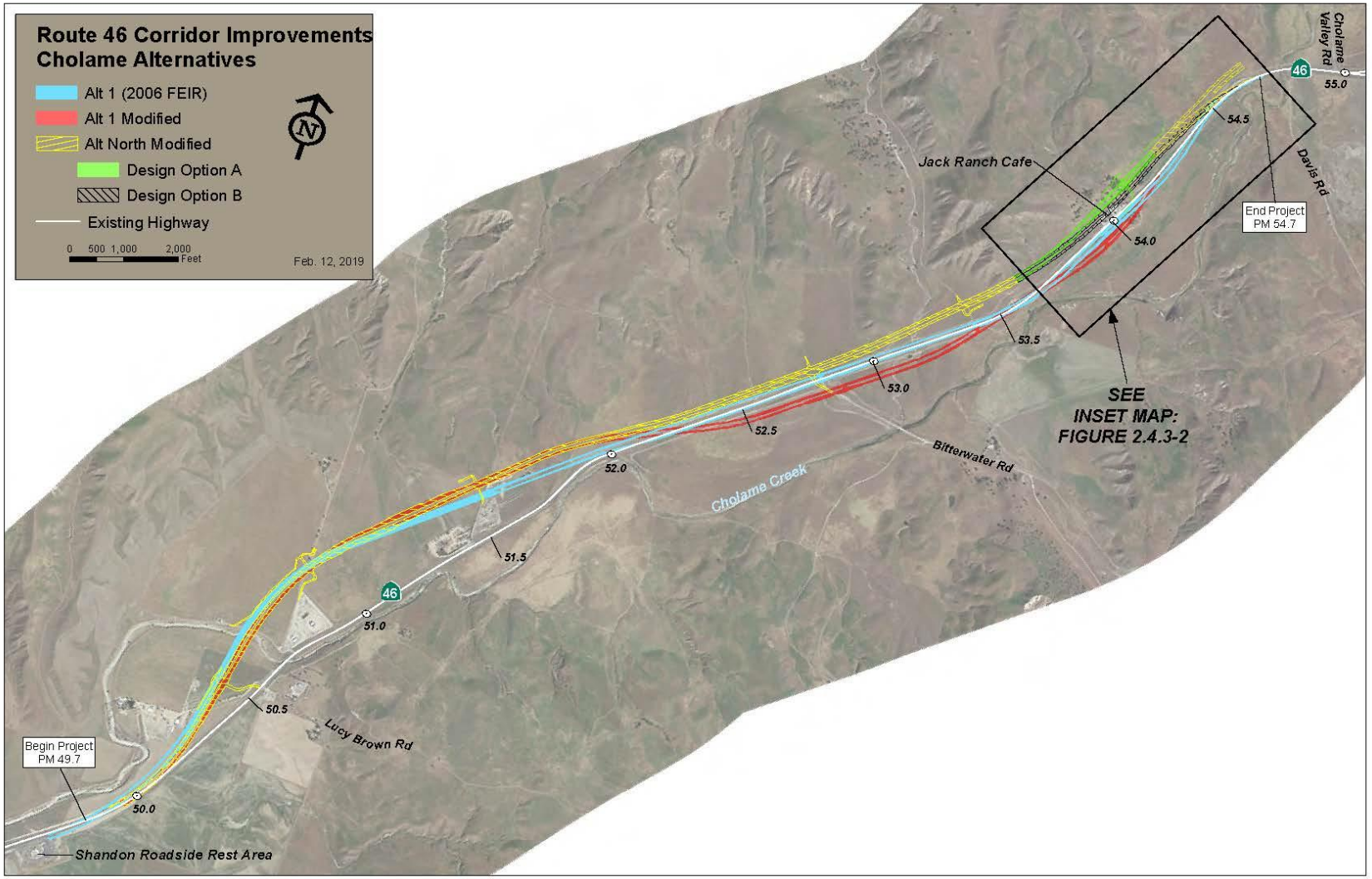


Figure 2.4.3-1 Cholame Alternatives

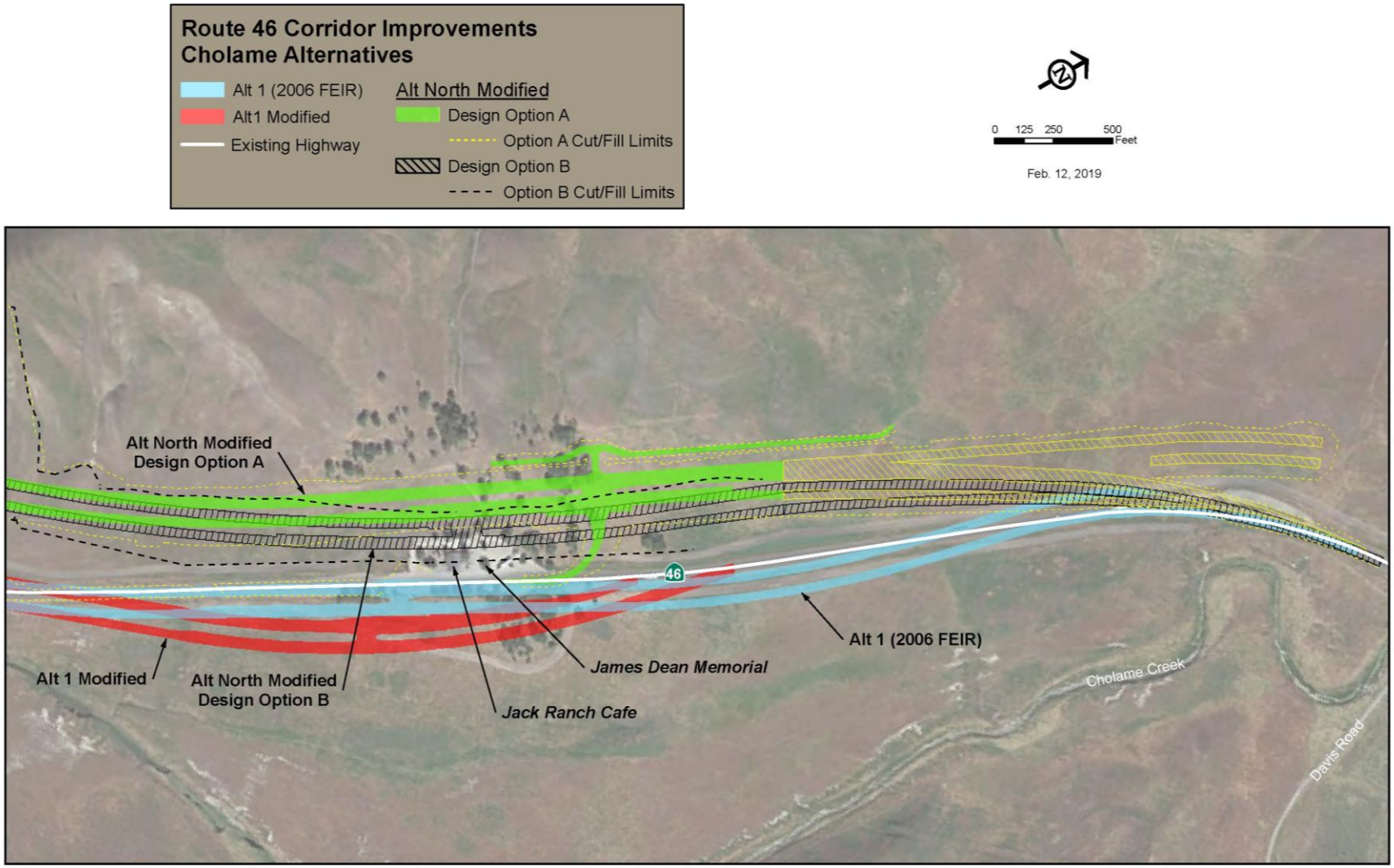


Figure 2.4.3-2 Cholame Alternatives near Jack Rach Cafe

Chapter 3 Environmental Setting, Impacts, and Mitigation Measures

This chapter explains impacts the Project would have on the physical, biological and socio-economic environments in the project area. It describes the existing environment that could be affected by the proposed Build Alternative [Cholame North Modified Alternative (Option A)], potential impacts of the proposed Build Alternative, and avoidance, minimization and/or mitigation measures.

As part of the environmental analysis conducted for this Supplemental Draft EIR/Updated EA, only new information or substantial changes are discussed at length. For consistency, the avoidance, minimization and/or mitigation measures listed in Chapter 6 of the 2006 EIR/FONSI are re-listed in this chapter under each environmental resource, except for biological resources, as this section has been reformatted from the original section in the 2006 EIR. Measures with a strikethrough constitute measures that are either not relevant to the Cholame Section (i.e., measures that were implemented in previously constructed sections or are to be implemented in the future Wye Section) or are no longer being proposed either due to changes in regulations or infeasibility of implementing them. The numbering system under each environmental resource is extended to identify new proposed measures.

The following resources will not be affected by any of the changes described in the Summary of Changes section. Therefore, there is no further discussion regarding these resources in this document.

Land Use – The *Corridor Project* remains consistent with existing and future land use and with state, regional, and local plans (San Luis Obispo County General Plan Land Use and Circulation Element 2015, San Luis Obispo County General Plan Conservation and Open Space Element 2010, San Luis Obispo County General Plan Agricultural Element 2010, San Luis Obispo County General Plan Safety Element 1999, San Luis Obispo County General Plan Shandon Community Plan 2012, Regional Transportation Plan 2014, Federal Transportation Improvement Program 2017).

Coastal Zone – The *Corridor Project* is not in the Coastal Zone (California Coastal Zone Map).

Wild and Scenic Rivers – No rivers classified as wild or scenic exist within the proposed project area.

Parks and Recreational Facilities – There are no parks and recreational facilities within the vicinity of the Cholame Section.

Timberland – No forest or tree stands are present within the Cholame Section (Revised Natural Environmental Study, June 2019).

Growth – The findings in the 2006 EIR/FONSI remain valid. The Cholame Section would not attract new development because of infrastructure limitations in the mostly rural area. Unplanned or non-controlled growth is unlikely to occur due to the current zoning, the designation of farmland as Preserve or under Contract, and the controlled access nature of the expressway designation.

Community Character and Cohesion – The 2006 EIR/FONSI found that no significant impact to the local population or community would result from the construction of the Cholame Alternative 1. Construction of the Cholame North Modified Alternative (Option A) would not change this finding.

The eastern portion of the Route 46 Corridor in San Luis Obispo County is surrounded primarily by agricultural lands. The community of Shandon is a small rural town situated at the junction of State Routes 41 and 46, approximately two miles west the beginning of the project. The community of Cholame lies at the eastern end of the project limits. The town consists of the Jack Ranch Café, Hearst Ranch Wine Tasting Room and the site of the James Dean Memorial. The project will not change the social and economic characteristics of the area.

Relocation and Real Property Acquisition –The 2006 EIR/FONSI reported that the Cholame Alternative 1 would displace one single-family residence. The Cholame North Modified Alternative (Option A) does not alter this finding. The residence that was to be displaced by the Cholame Alternative 1, would also be displaced by the Cholame North Modified Alternative (Option A). No additional residential displacements would occur from the construction of the Cholame North Modified Alternative (Option A). The State compensated the property owner at a price equal to fair market value via a 2010 contract.

In addition to the property that has been relocated, portions of thirteen additional private parcels (residential and non-residential) north of the existing two-lane highway would require partial acquisition for state highway purposes. As described in the 2006 EIR/FONSI, all property owners that would be affected by the project would be compensated for this loss at a price equal to fair market value.

Access to the private parcels would not be affected by the proposed project, as the project would include left and right turn lanes as well as acceleration and deceleration lanes.

Environmental Justice – The findings in the 2006 EIR/FONSI remain valid. The single residents that required relocated from the single property that was fully acquired was not occupied by a minority or low-income family.

Geology, Soils, Seismicity and Topography – The findings in the 2006 EIR/FONSI remain valid. No significant geologic, seismic hazard or soil impacts will result from the construction of the proposed project. Standard geotechnical design will address all potential geologic and seismic impacts. (Preliminary Geotechnical Report, July 19, 2017).

Paleontology – The findings in the 2006 EIR/FONSI remain valid. No significant impacts to paleontology resources are expected to occur as a result of the project. (Paleontology Review, October 21, 2016).

Wildfire – The 2019 CEQA amendments include new requirements to address a project's potential impacts on wildfire hazards if the project is within or adjacent to land classified as very high fire severity zones by local agencies. The Cholame Section is not located within or near a very high fire hazard severity zone as mapped by CalFire, therefore analysis of the project's potential impacts on wildfire hazards is not included in this document.

3.1 Physical Environment

3.1.1 Air Quality

Regulatory Setting

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM)—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$)—and sulfur dioxide (SO_2). In addition, national and state standards exist for lead (Pb), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

Conformity

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

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

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the project has a design concept and scope that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot

analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

Affected Environment

An Air Quality Report was prepared in May of 2006 to analyze air quality impacts resulting from the construction of all 4 Sections of the *Corridor Project* (Estella, Shandon, Cholame and Wye). A Supplemental Air Study Report was completed in June 2014 because the Cholame and Wye Sections were identified as being within a federal nonattainment area for Ozone. The 2014 supplemental report also addressed operational air pollutants (Mobile Source Air Toxics and climate change/carbon dioxide) emissions that were not discussed in the original 2006 Air Quality Report. An addendum to the 2014 Supplemental Air Quality Study Report was prepared in January 2017 to analyze how the changes to the project (i.e., Design Modifications, changes in the environmental setting, BMP's, minimization and mitigation measures and changes to the laws, regulations and guidance) could affect air quality with respect to the Cholame Section.

The project is located within the South-Central Coast Air Basin, which includes Santa Barbara, San Luis Obispo and Ventura Counties.

Meteorology

Meteorological conditions within the Cholame Section remains the same as what is discussed on page 37 of the 2006 EIR/FONSI.

Pollutants

Under Federal law and regulations, Metropolitan Planning Organizations (MPO's) that are in non-attainment of Federal air quality standards must have an FTIP that conforms with an approved Federal Air Quality Plan (also referred to as the State Implementation Plan (SIP).

The Project is located within a nonattainment area for both the 2008 Federal 8-hour and 2015 federal 8-hour ozone levels, and nonattainment for State PM_{10} and 1-hour ozone levels.

On June 4, 2018, EPA published a final rule that designated 51 areas as nonattainment for the 2015 ozone NAAQS (83 FR 25776). These areas included San Luis Obispo County (Eastern part). These designations are effective 60 days after the Federal Register publication, i.e. August 3, 2018. This means that project-level conformity will also apply in these areas for the 2015 ozone NAAQS.

Ozone and particulate matter (PM) are generally categorized as regional pollutants because they, or their precursors affect air quality across a region. Regional pollutants are those that cannot be attributed to any single project. PM is also considered a local pollutant because it tends to accumulate in the air locally. Sources of reactive organic gasses and nitrogen oxide, the principle components of ozone, are motor vehicles, fossil fuel combustion and

industrial processes. PM_{10} may be composed of several types of fine solid or liquid particles, including dust, smoke, ash, mist and fumes. Sources of particulates include combustion of fuels, agricultural practices, construction activities, road dust, industrial processes, along with natural sources such as sea spray, forest fire smoke, and windblown dust.

Air quality monitoring stations located throughout the nation are maintained by the local air districts and State air quality regulating agencies. There are two ambient air monitors near the Project. The Red Hills monitor is located about 6 miles southeast of the Cholame Section and only monitors ozone. The Paso Robles station is in downtown Paso Robles, about 20 miles from the Cholame Section and monitors ozone and PM_{10}. Tables 3.1.1-1, 3.1.1-2, and 3.1.1-3 list the data collected by the two monitors from 2013 to 2018.

Data collected at permanent monitoring stations are used by the EPA to identify regions as attainment, nonattainment, or maintenance, depending on whether the regions meet the requirements stated in the primary NAAQS. The EPA imposes additional restrictions on nonattainment areas. Different classifications of nonattainment (e.g., marginal, moderate, serious, severe, and extreme) are used to classify each air basin on a pollutant-by-pollutant basis. The classifications are used to develop air quality management strategies to improve air quality and comply with the NAAQS. Table 3.1.1-4 lists the primary standards for the criteria pollutants, the attainment statuses in the eastern portion of San Luis Obispo County, and provides brief descriptions of the health effects associated with exposures to these pollutants and the typical sources of these pollutants.

Table 3.1.1-1: Red Hills Monitoring Site Annual Ozone Summary Data

San Luis Obispo County **Annual Ozone Summary Data**	**Year**	**2015 National 8-hr standard: 0.070 ppm**	**Maximum Concentration (ppm)**	
		Exceedance Days (AD)	**1-hr**	**8-hr**
Monitoring Site: Red Hills	2013	9	0.0870	0.0810
	2014	7	0.0830	0.0780
	2015	4	0.0820	0.0750
	2016	6	0.1110	0.0860
	2017	6	.0790	0.0720
	2018	5	0.0810	0.0730

Table 3.1.1-2: Paso Robles Monitoring Site Annual Ozone Summary Data

San Luis Obispo County **Annual Ozone Summary Data**	Year	**2015 National 8-hr standard: 0.070 ppm**	**Maximum Concentration (ppm)**	
		Exceedance Days (AD)	**1-hr**	**8-hr**
Monitoring Site: Paso Robles-Santa Fe Avenue	2013	0	0.0720	0.0670
	2014	0	0.0700	0.0650
	2015	0	0.0730	0.0680
	2016	0	0.0910	0.0660
	2017	1	0.0830	0.0740
	2018	2	0.0870	0.0710

Table 3.1.1-3: Paso Robles Monitoring Site Annual PM_{10} Summary Data

SLO - **Annual PM_{10}** (standard) - local daily **Paso Robles - Santa Fe Avenue** Micrograms/Cubic-Meter (µg/m3) **Annual Maximum**		
Year	**1-Day Average**	**Site**
2013	89.1	B
2014	82.5	B
2015	37.5	B
2016	43.0	B
2017	58.3	B
2018	66.9	B

Table 3.1.1-4: Paso Robles Monitoring Site Annual Ozone Summary Data

Pollutant	Averaging Time	State[1] Standard	Federal[2] Standard	Principal Health and Atmospheric Effects	Typical Sources	State Project Area Attainment Status	Federal Project Area Attainment Status
Ozone (O_3)	1 hour	0.09 ppm[3]	---[4]	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.	Nonattainment	Nonattainment - Marginal
	8 hours	0.070 ppm	0.070 ppm (4^{th} highest in 3 years)				
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Attainment	Attainment
	8 hours	9.0 ppm [1]	9 ppm				
	8 hours (Lake Tahoe)	6 ppm	---				
Respirable Particulate Matter (PM_{10})[5]	24 hours	50 µg/m^3 [6]	150 µg/m^3 (expected number of days above standard < or equal to 1)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic & other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.	Nonattainment	Attainment
	Annual	20 µg/m^3	--- [5]				
Fine Particulate Matter ($PM_{2.5}$)[5]	24 hours	---	35 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic & other aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.	Attainment	Attainment
	Annual	12 µg/m^3	12.0 µg/m^3				
	24 hours (conformity process[7])	---	65 µg/m^3				
	Secondary Standard (annual; also for conformity process[5])	---	15 µg/m^3 (98^{th} percentile over 3 years)				

Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm[8]	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.	Attainment	Attainment
	Annual	0.030 ppm	0.053 ppm				
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	0.075 ppm[9] (99^{th} percentile over 3 years)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Attainment	Attainment
	3 hours	---	0.5 ppm[10]				
	24 hours	0.04 ppm	0.14 ppm (for certain areas)				
	Annual	---	0.030 ppm (for certain areas)				
Lead (Pb)[11]	Monthly	1.5 µg/m^3	---	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.	Attainment	Attainment
	Calendar Quarter	---	1.5 µg/m^3 (for certain areas)				
	Rolling 3-month average	---	0.15 µg/m^3 [12]				
Sulfate	24 hours	25 µg/m^3	---	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Attainment	N/A
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	---	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	Attainment	N/A
Visibility Reducing Particles (VRP)	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	---	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.	Unclassified	N/A
Vinyl Chloride[11]	24 hours	0.01 ppm	---	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes	Unclassified	N/A

Adapted from Sonoma-Marin Narrows Draft EIR and California ARB Air Quality Standards chart (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

Greenhouse Gases and Climate Change: Greenhouse gases do not have concentration standards for that purpose. Conformity requirements do not apply to greenhouse gases.

---

[1] State standards are "not to exceed" or "not to be equaled or exceeded" unless stated otherwise.

[2] Federal standards are "not to exceed more than once a year" or as described above.

[3] ppm = parts per million

[4] Prior to 6/2005, the 1-hour ozone NAAQS was 0.12 ppm. Emission budgets for 1-hour ozone are still be in use in some areas where 8-hour ozone emission budgets have not been developed, such as the S.F. Bay Area.

[5] Annual PM_{10} NAAQS revoked October 2006; was 50 µg/m³. 24-hr. $PM_{2.5}$ NAAQS tightened October 2006; was 65 µg/m³. Annual $PM_{2.5}$ NAAQS tightened from 15 µg/m³ to 12 µg/m³ December 2012 and secondary annual standard set at 15 µg/m³.

[6] µg/m³ = micrograms per cubic meter

[7] The 65 µg/m³ $PM_{2.5}$ (24-hr) NAAQS was not revoked when the 35 µg/m³ NAAQS was promulgated in 2006. The 15 µg/m³ annual $PM_{2.5}$ standard was not revoked when the 12 µg/m³ standard was promulgated in 2012. The 0.08 ppm 1997 ozone standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (7/20/2013). Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for newer NAAQS are found adequate, SIP amendments for the newer NAAQS are approved with a emission budget, EPA specifically revokes conformity requirements for an older standard, or the area becomes attainment/unclassified. SIP-approved emission budgets remain in force indefinitely unless explicitly replaced or eliminated by a subsequent approved SIP amendment. During the "Interim" period prior to availability of emission budgets, conformity tests may include some combination of build vs. no build, build vs. baseline, or compliance with prior emission budgets for the same pollutant.

[8] Final 1-hour NO_2 NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause re-designation to nonattainment in some areas after 2016.

[9] EPA finalized a 1-hour SO_2 standard of 75 ppb (parts per billion [thousand million]) in June 2010. Nonattainment areas have not yet been designated as of 9/2012.

[10] Secondary standard, set to protect public welfare rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.

[11] The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the ARB and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and $PM_{2.5}$ as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.

[12] Lead NAAQS are not considered in Transportation Conformity analysis.

Environmental Consequences

Regional and Project Level Air Quality Conformity

As described in the Regulatory Section above, regional conformity is demonstrated by showing that the project is included in a conforming RTP and the FTIP. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as what is described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis. Conformity analysis does not apply at all for state standards. Therefore, conformity analysis for 1-hour ozone and PM_{10} is not required, since San Luis Obispo County is in federal attainment for these two pollutants.

The Cholame Section is listed in the 2014 Regional Transportation Plan and the Final 2019 RTP and is listed in the financially constrained 2017 FTIP, which was found to conform by the San Luis Obispo Council of governments (SLOCOG) on October 12, 2016. The design concept and scope of the proposed project is consistent with the project description in the 2010 RTP, 2018 RTIP, and the "open to traffic" assumptions of the SLOCOG's regional emissions analysis. Therefore, the Cholame Section of the *Corridor Project* conforms on both the regional and project level.

Mobile Source Air Toxics

FHWA released updated guidance in October 2016 (FHWA, 2016) for determining when and how to address mobile source air toxics (MSAT) impacts in the NEPA process for transportation projects. FHWA identified three levels of analysis:

- No analysis for exempt projects or projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; and
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Projects with no impacts generally include those that a) qualify as a categorical exclusion under 23 CFR 771.117, b) qualify as exempt under the FCAA conformity rule under 40 CFR 93.126, and c) are not exempt, but have no meaningful impacts on traffic volumes or vehicle mix.

Projects that have low potential MSAT effects are those that serve to improve highway, transit, or freight operations or movement without adding substantial new capacity or creating a facility that is likely to substantially increase emissions. The large majority of projects fall into this category. Projects with high potential MSAT effects include those that:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of Diesel Particulate Matter in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000, or greater, by the design year; and
- Are proposed to be located in proximity to populated areas or, in rural areas, in proximity to concentrations of vulnerable populations (i.e., schools, nursing homes, hospitals).

Based on the ARB Land Use Handbook (Cal/EPA and ARB, 2005), it is generally recommended in California that projects perform an emissions analysis to address CEQA requirements if any of the following criteria are met:

- The project changes capacity or realigns a freeway, or urban road with AADT of 100,000 or more and there are sensitive land uses within 500 feet of the roadway.
- The project changes capacity or realigns a rural road (non-freeway) with AADT of 50,000 or more and there are sensitive land uses within 500 feet of the roadway.

A quantitative emissions analysis was not conducted for the proposed project because it does not involve meaningful MSAT effects for two main reasons. First, there are no sensitive air receptors within 500 feet of the existing and

proposed highway within the Cholame Section. Sensitive air receptors are typically defined as schools, daycare facilities, hospitals, healthcare facilities, convalescent homes, etc. Secondly, the predicted design year AADT is 22,500 vehicles, well under the 50,000-vehicle threshold.

Operational Emissions

Emissions analysis is often conducted for long-term (operational) emissions, which result after a project is constructed. Operational emissions are considered long term pollutants that are anticipated to occur continuously throughout the life of the project. In the case of this project, operational emissions would result from the operation of the new proposed four-lane expressway.

The 2006 EIR/FONSI did not include long-term (operational) emissions analysis. However, due to changes in the environmental setting (recent non-attainment designation for 8-hour ozone in eastern San Luis Obispo County) as well as updated guidance, this Supplemental Draft EIR/Updated EA includes operational emissions analysis to ensure that the proposed Cholame section Build Alternative would not cause new violations of the NAAQS, worsen existing violations, or delay timely attainment of the NAAQS. With respect to ozone, regional and project level conformity has been met as described under the regional and project level air quality conformity heading above.

The CT-EMFAC 2017 model is used to support the California Air Resources Board's regulatory and air quality planning efforts and to meet the Federal Highway Administration's transportation planning requirements. The most recent model utilized peak-hour traffic data and emissions factors to calculate the CO, reactive organic gas (ROG), NO_x, PM_{10}, $PM_{2.5}$, and CO_2 emissions for the Baseline (2016), Build Alternative 2042, and No-Build Alternative 2042. The results of the modeling are summarized in Table 3.1.1-5.

Table 3.1.1-5 Daily Peak-Hour Emission Estimates

Scenario	(grams/peak-hr.)					(tons/peak-hr.)
	CO	**$PM_{2.5}$**	**PM_{10}**	**NOx**	**ROG**	**CO_2**
2016 Baseline	12,965.40	493.7	1,396.60	8,719.10	1,072.90	4.329
2042 Build Alternative	3,701.10	445.1	1,707.60	2,049.90	280.40	3.817
2042 No-Build Alternative	3,809.10	435	1,696.90	1,471.60	281	3.517

As shown in Table 3.1.1-5, the 2042 Build Alternative and 2042 No-Build Alternative pollutant emissions are lower than the 2016 Baseline existing conditions, with the exception of PM_{10}. This overall reduction can be attributed

to recent rulemakings expected to decrease future emissions, including on-road diesel fleet rules, the Smartway/Phase I Heavy-Duty Vehicle Greenhouse Gas Regulation, and Advanced Clean Car Standards. These regulations require upgrading or replacing on-road heavy-duty diesel vehicle engines, improving the fuel efficiency of heavy-duty vehicles, and increased control of emissions from passenger vehicles. Additionally, mobile source emission rates are expected to decline as engine efficiency improvements continue to be made and older, more polluting engines are phased out over time.

The emissions analysis indicates that the 2042 Build Alternative PM2.5, PM_{10}, NO_x, and CO_2 emissions would be higher than those of the 2042 No-Build Alternative. This differs from the emission estimates in the 2006 EIR/FONSI and can be attributed to the expected increase in vehicle speeds on the highway. The optimal vehicle speed for the combustion of fossil fuels and the subsequent release of emissions occurs at about 55 miles per hour. This congestion relief project will expand the existing two-lane highway to a four-lane divided expressway, raising the posted speed limit from 55 to 65 miles per hour. As vehicle speeds increase above 45 miles per hour, the PM, NO_x, and CO_2 emissions are expected to increase as well.

The use of a more precise CT-EMFAC model and updated traffic data also contributes to the change in emission estimates. Current peak-hour traffic volumes are significantly higher than the 1998 annual average daily traffic (AADT) figures used to estimate emissions in the 2006 EIR/FONSI. The increased volume of traffic and longer planning horizon (2026 vs. 2042) result in higher emission estimates.

Construction Emissions

Short-term (construction) emissions are pollutants that are generated during construction of the project. A quantitative analysis of short-term emissions is not included in this Supplemental Draft EIR/Updated EA, as construction emissions have been substantially reduced due to new off-road diesel regulations implemented since the certification of the 2006 EIR/FONSI. The California Air Resources Board's adoption of The California Off-Road Diesel Vehicle Regulations in 2007 and EPA's Clean Air Nonroad Diesel Rule have enforced increasingly stringent emissions minimization measures, in addition to actively phasing in cleaner engines to construction fleets.

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment are also expected and would include carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs), directly-emitted particulate matter (PM_{10} and $PM_{2.5}$), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from NO_x and VOCs in the presence of sunlight and heat.

Site preparation and roadway construction typically involves clearing, cut-and-fill activities, grading, removing or improving existing roadways, building bridges, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. These activities could temporarily generate enough PM_{10}, $PM_{2.5}$, and small amounts of CO, SO_2, NO_x, and VOCs to be of concern. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site could deposit mud on local streets, which could be an added source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Construction activities for large development projects are estimated by the United States Environmental Protection Agency (U.S. EPA) to add 1.2 tons of fugitive dust per acre of soil disturbed per month of activity. If water or other soil stabilizers are used to control dust, the emissions can be reduced by up to 50 percent. The Department's Standard Specifications (Section 14) on dust minimization require use of water or dust palliative compounds and will reduce potential fugitive dust emissions during construction.

In addition to dust-related PM_{10} emissions, heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, VOCs and some soot particulate (PM_{10} and $PM_{2.5}$) in exhaust emissions.

Traffic will operate as usual on the existing two-lane highway during construction, therefore there are no expected delays or additional congestion that could lead to temporary increases in congestion related pollutants.

SO_2 is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Under California law and ARB regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel (not more than 15 ppm sulfur), so SO_2-related issues due to diesel exhaust will be minimal.

Some phases of construction, particularly asphalt paving, may result in short-term odors in the immediate area of each paving site(s). Such odors would quickly disperse to below detectable levels as distance from the site(s) increases.

Most of the construction impacts to air quality are short-term in duration and, therefore, will not result in long-term adverse impacts to air quality conditions. Implementation of the following standardized measures, some of which may

also be required for other purposes such as storm water pollution control, will reduce any air quality impacts resulting from construction activities.

Construction Conformity

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

The CEQA determination found that no significant long-term air quality impacts would result from the construction of the Cholame North Modified Alternative (Option A).

Avoidance, Minimization, and/or Mitigation Measures

For consistency, the minimization measures below coincide with the air quality measures listed in Chapter 6 of the 2006 EIR/FONSI. Measures with a strikethrough constitute measures that are no longer being proposed due to the infeasibility of implementing them.

Impact/reason for protective measure(s) – The following measures (1 – 9) are intended to minimize the amount of PM_{10} produced during construction of the Cholame North Modified Alternative (Option A).

Minimization Measure 1 – Reduce the amount of disturbed areas where possible.

Minimization Measure 2 – Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 25 mph. Reclaimed (non-potable) water would be used whenever possible.

Minimization Measure 3 – All dirt stock-pile areas would be sprayed daily as needed.

Minimization Measure 4 – Permanent dust control measures identified in the approved project re-vegetation and landscape plans would be implemented as soon as possible following completion of any soil disturbing activities.

Minimization Measure 5 – All roadways, driveways, sidewalks, etc. to be paved would be completed as soon as possible unless seeding or soil binders are used.

Minimization Measure 6 – All trucks hauling dirt, sand, soil, or other loose materials on public roads are to be covered or would maintain at least two feet of freeboard in accordance with California Vehicle Code Section 23114.

Minimization Measure 7 – Sweep streets at the end of the day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water would be used where feasible.

Minimization Measure 8 – Fugitive dust emissions from any source during this project will not exceed 20% opacity, with the exception of specific pieces of equipment that are allowed to emit at higher opacity limits under a permit. Should 20% opacity be exceeded, the Contractor must expand their dust control effort to bring the emissions to below the limit.

Impact/reason for protective measure(s) – The following measures (9 – 14) are intended to reduce the amount of combustion emissions produced during project construction. Minimizing the production of primary pollutants would also reduce the production of secondary pollutants during construction.

~~Minimization Measure 9 – Caltrans would use after-treatment control devices on some of the most highly used and high emitting pieces of construction equipment. The determination of the number and type of equipment that shall be retrofitted with these devices shall be discussed and agreed to in conjunction with the SLOAPCD staff prior to the bidding process for each sub-phase of construction.~~

This measure has been eliminated. Caltrans 2015 Standard Specification Section 4-9.02 (Air Pollution Control) requires that the contractor comply with all local air-pollution-control rules, regulations, ordinances and statutes that apply to work performed under the Contract, including those provided in Government Code § 11017 (Public Contract Code § 10231), which states that all state agencies shall comply with all local air pollution control rules, regulations and ordinances which are more stringent than any applicable state air pollution control statute, rule or regulation. In addition, Caltrans' cannot dictate that the contractor tamper with their equipment as this would invalidate equipment warranty and has the potential to result in damage to the equipment. This measure was eliminated from the 2006 EIR/FONSI through preparation of a CEQA/NEPA Re- validations and Addendum to File completed on August 30, 2010.

Minimization Measure 10 – Schedule truck trips to minimize impacts to traffic flow.

~~Minimization Measure 11 – Should Caltrans and the SLOAPCD review of emission estimates indicate that planned construction activities would be substantially greater than the APCD's Tier 3 emission threshold, then phasing of construction activities will be one option form emission reduction.~~

This measure has been eliminated. Phasing of construction activities based on emission estimates and is being eliminated due to legal and contractual issues due to liquidated damages clause in State Contracts. Additionally, Caltrans 2015 Standard Specification Section 4-9.02 (Air Pollution Control) requires that the contractor comply with all local air-pollution-control rules, regulations, ordinances and statutes that apply to work performed under the Contract, including those provided in Government Code § 11017 (Public Contract Code § 10231), which states that all state agencies shall comply with all local air pollution control rules, regulations and ordinances which are

more stringent than any applicable state air pollution control statute, rule or regulation.

Minimization Measure 12 – Construction equipment would be operated in proper tune according to manufacturer's specifications.

Minimization Measure 13 – Use only California Air Resources Board approved fuel for all diesel-powered equipment used during construction.

Minimization Measure 14 – To the extent feasible, use electric grid power to replace diesel-powered generators and to power air compressors and light sources.

Minimization Measure 15 – Diesel equipment shall not be allowed to idle for more than 10 minutes.

~~Minimization Measure 16 – Install catalytic converter after-treatment control devices on some of the project's higher usage, higher emitting pieces of non-road, diesel-powered construction equipment during each sub-phase of the construction project. The determination of the number and type of equipment that shall be retrofitted with these devices shall be based on finalized emissions estimates calculated for each sub-phase. Caltrans and the Air Pollution Control District shall work together to determine the appropriate level of control prior to the opening of the bidding process for each sub-phase of construction.~~

This measure has been eliminated. Caltrans 2015 Standard Specification Section 4-9.02 (Air Pollution Control) requires that the contractor comply with all local air-pollution-control rules, regulations, ordinances and statutes that apply to work performed under the Contract, including those provided in Government Code § 11017 (Public Contract Code § 10231), which states that all state agencies shall comply with all local air pollution control rules, regulations and ordinances which are more stringent than any applicable state air pollution control statute, rule or regulation. In addition, Caltrans' cannot dictate that the contractor tamper with their equipment as this would invalidate equipment warranty and has the potential to result in damage to the equipment. This measure was eliminated from the 2006 EIR/FONSI through preparation of a CEQA/NEPA Re- validations and Addendum to File completed on August 30, 2010.

In addition to the measures listed above, implementation of the following standardized measures, some of which may also be required for other purposes such as storm water pollution control, will reduce air quality impacts resulting from construction activities:

- The construction contractor must comply with the Department's Standard Specifications in Section 14.
    - Section 14 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including

air pollution control district and air quality management district regulations and local ordinances.

  - Section 14 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are described in Section 18.

- Water or dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emissions or at the right-of-way line, depending on local regulations.

  - Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.

  - Trucks will be washed as they leave the right-of-way as necessary to control fugitive dust emissions.

  - Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.

  - A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts.

  - Construction areas will be kept clean and orderly.

  - Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.

  - All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust (particulate matter) during transportation.

  - Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to decrease particulate matter.

  - To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

- Mulch will be installed or vegetation planted as soon as practical after grading to reduce windblown particulate

3.1.2 Geology/Seismic and Soil Types (*Incorporate by Reference*)

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

- 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 (EO) 12088, Federal Compliance with Pollution Control Standards, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment,

reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne 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

The affected environment, as it pertains to hazardous waste concerns, has not changed since finalization of the 2006 EIR/FONSI. The presence of petroleum product pipelines remain within the limits of the Cholame Section and would continue to be the most likely area for encountering hazardous materials during construction.

An Initial Site Assessment (ISA) Memo was prepared in March 2019. The March 2019 ISA consisted of updated records searches from the Solid Waste Information System (SWIS), California Environmental Protection Agency (Cal EPA) and Envirostor/Geo Tracker websites to evaluated potential hazardous waste concerns within the limits of the Cholame Section. The ISA Memo identified the following sites, which are also shown in Figure 3.1.3-1.

1. Shandon Pumping Station
2. Lucy Brown Road Pipeline Site
3. Conoco-Phillips (COP) pipeline at Highway 46
4. Hearst Corporation – Jack Ranch Café

The Shandon Pumping Station and the Lucy Brown Pipeline site (sites 1 and 2) are open cases involving potential soil and subsurface groundwater contamination from crude oil, diesel and gasoline. These sites are no longer leaking however, the plume could still be moving toward the southwest with the groundwater gradient. Both cases are inactive, meaning that further regulatory oversight activities for cleanup are pending by the lead agency, the Regional Water Quality Control Board (RWQCB).

The pipeline at Highway 46 and the Hearst Corporation – Jack Ranch sites (#'s 3 and 4) involve potential soil and subsurface groundwater contamination from crude oil, diesel and gasoline. Both cases have been closed, meaning no further regulatory oversight activities are required by the lead agency, the RWQCB. When a site is closed it means that the source of contamination has

been removed and the concentrations of petroleum hydrocarbons in soil and groundwater plumes have reached asymptotic levels[9]

A Site Investigation Report (SIR) was prepared in March of 2019 to provide information about the potential presence of petroleum hydrocarbons in soil within the vicinity of the proposed Cholame Creek Bridge (Br. No. 49.29). The investigation did not reveal petroleum hydrocarbons in the soil near the location of the proposed bridge. Therefore, the risk of encountering hazardous waste during construction of the new Cholame Creek Bridges is low.

[9] The level (usually a contaminant concentration expressed in milligrams per kilogram) below which continued remedial action will generally produce negligible or insufficient reduction in target contaminants.

This page intentionally left blank

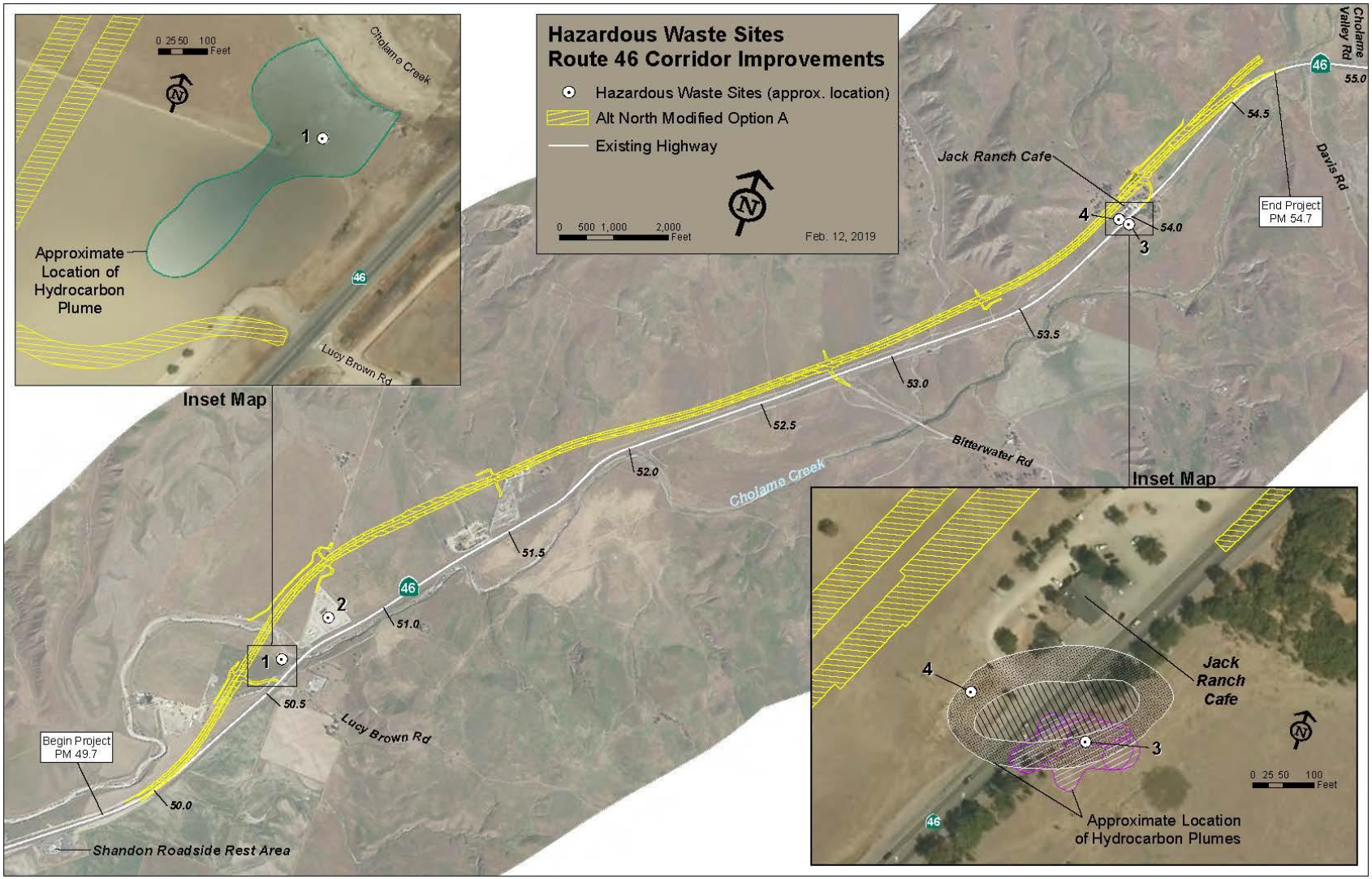


Figure 3.1.3-1: Known Hazardous Waste Sites within the Cholame Section

This page intentionally left blank

Environmental Consequences

The proposed highway alignment associated with the Cholame North Modified Alternative (Option A) would not interfere with or require acquisition of land containing any portion of the four hazardous waste sites listed above. However, the highway alignments associated with all Alternatives discussed in Section 2.4.3 (Cholame Section Alternatives Withdrawn from Consideration) would intersect portions of site 3 and 4, requiring acquisition of property containing hazardous materials. Caltrans is required to investigate all properties for contamination before being considered for incorporation into the State right-of-way. It is Caltrans policy that acquisition of contaminated properties only be allowed once the benefits and risks are documented, available risk reduction mechanisms are employed, and a policy exception is approved by Department management.

The Cholame North Modified Alternative (Option A) would result in a substantial reduction in the linear footage of petroleum product pipelines that would require relocation compared with Cholame Alternative 1 and Cholame Alternative 1 Modified (Table 3.1.3-1).

Table 3.1.3-1: Petroleum Product Pipelines in Conflict per Alternative

Alternative	Description	Length (ft)
Cholame North Modified Alternative (Option A)	Oil Pipelines	5,220
	Natural Gas Line	2,605
	Natural Gas Line (Idle)	2,605
Alternative 1	Oil Pipelines	23,972
	Natural Gas Line	17,147
	Natural Gas Line (Idle)	1,926
	Jet Fuel Line	4,859
Alternative 1 Modified	Oil Pipelines	21,186
	Natural Gas Line	10,995
	Natural Gas Line (Idle)	2,150
	Jet Fuel Line	4,208

Aerially deposited lead (ADL) from the historical use of leaded gasoline, exists along roadways throughout California. If encountered, soil with elevated concentrations of lead as a result of ADL on the state highway system right of way within the limits of the project will be managed under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This ADL Agreement allows such soils to be safely reused within the project limits as long as all requirements of the ADL Agreement are met. It's important to note that soil testing for ADL has been conducted along the existing alignment within the Cholame Section.

No significant regulated ADL was found in the soil. There will not be any ADL encountered along the Cholame North Modified Alternative)

Hazardous waste concerns would be reduced with the proposed Cholame North Modified Alternative (Option A) due to avoidance of the four hazardous waste sites and the reduction in the linear footage of petroleum pipeline relocations compared with the alternatives that have been withdrawn from further consideration.

The Cholame North Modified Alternative (Option A) does not have the potential to result in significant impacts by exposing humans to hazards or hazardous materials or by generating hazardous waste.

Avoidance, Minimization and Mitigation Measures

For consistency, the minimization measures below coincide with the Hazards and Hazardous Materials BMP's listed in Chapter 6 of the 2006 EIR/FONSI. These measures were written to apply to all *Corridor Project* Sections. However, some of the measures and/or information pertain to sections of the project that have already been constructed or to the future Wye Section. Therefore, strikethroughs have been used to identify measures that do not pertain to the Cholame Section.

BMP Measure 1 – If suspected contaminated soil is discovered during construction of the project, all work would cease in the suspected contaminated area. The suspected material would be sampled in place to determine the content and concentration of the hazardous material. All hazardous materials found would be removed, handled, and disposed of in accordance with state and federal regulations.

Impact/reason for BMP measure – This measure is intended to protect public and worker health and safety and to provide a plan for the proper handling of hazardous materials in the event that suspected materials are discovered during the construction of the project.

Impact/reason for BMP measure – The following measures (2 - 4) are intended to protect public health and safety and the health of the physical environment by containing and providing for the proper handling of known hazardous materials.

BMP Measure 2 – If asbestos-containing materials identified on Bridges #49-36 and #49-29 would be disturbed during construction, they would be treated as a hazardous material and disposed of by a licensed and certified asbestos abatement contractor. This would be done prior to any construction activities that would disturb the ACM to a point at which it could possibly become airborne. (Note: no asbestos was found on Bridge 49-0029. Asbestos was found in joint sheeting on Bridge 49-0036)

BMP Measure 3 – A Notification for Renovation and Demolition of Asbestos Containing Materials would be submitted to the Regional Air Pollution Control District 10 days prior to the beginning of the project.

~~BMP Measure 4 – Peeling, lead-containing paint on Bridge #49-95 is to be removed and disposed of by a certified and licensed abatement contractor in conjunction with~~

~~any planned demolition work associated with this project. All painted surfaces on Bridge #49-33 would be treated as lead-containing and handled using the same procedure described above for Bridge #49-95. This would occur only during any maintenance, demolition, or renovation activities associated with this project.~~

This measure does not apply to the Cholame Section because there is no lead-based paint on any of the bridges identified for removal in this section and both bridges 49-95 and 49-33 were in previous sections of the *Corridor Project* that have already been constructed.

~~BMP Measure 5 – A notification of construction would be filed with the FAA, using FAA Form 7460-1, prior to the beginning of construction activities.~~

~~Impact/reason for BMP measure – To notify the Federal Aviation Administration that construction will begin within the 3.2 kilometer (two mile) limit of the Paso Robles Municipal Airport.~~

The Cholame Section is approximately 15 miles from the Paso Robles Municipal Airport, therefore this measure does not apply.

BMP Measure 6 – Minimize single-lane control during construction to the maximum extent feasible so that emergency services would have the freest flowing traffic conditions available in the event of an emergency.

Impact/reason for BMP measure – Although State Route 46 is not a designated emergency evacuation route by the County Office of Emergency Services, it could be designated for such use in the event of a catastrophic emergency. Because of this, the above best management practice would be implemented to the greatest extent possible.

3.1.4 Hydrology, Floodplains, Water Quality and Storm Water Runoff

The 2006 EIR/FONSI combined hydrology, floodplains and water quality under this section. This Supplemental Draft EIR/Updated EA has added storm water runoff to the section. This section first discusses the regulatory setting, affected environment, environmental consequences and avoidance, minimization and mitigation measures for hydrology and floodplains followed by a discussion about water quality and storm water runoff.

3.1.4.1 Hydrology and Floodplains

Regulatory Setting

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration (FHWA) requirements for compliance are outlined in 23 Code of Federal Regulations (CFR) 650 Subpart A.

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

Affected Environment

A Location Hydraulic Study (LHS) was prepared on December 27, 2002 to evaluate potential floodplain encroachment or changes to floodplain status based on all project alternatives related to the larger Route 46 Corridor Improvement Project. The 2002 LHS was used to prepare the 2006 EIR/FONSI.

An updated LHS was prepared on January 29, 2019 to re-evaluate potential floodplain encroachment or changes to floodplain status based on the proposed changes to the Cholame Section.

A Hydraulics Report was prepared on May 14, 2018 to evaluate the effects to Cholame Creek as a result of the removal of the existing Cholame Creek Bridge and the rock slope protection (RSP) placed along the banks of the creek to protect the bridge abutments from erosion. The results of this study and the hydraulic recommendations are discussed in the Environmental Consequences section below.

The Project will take place within two floodplains (Cholame Creek and White Canyon). According to the Federal Emergency Management Agency (FEMA), these floodplains are designated Zone A. This means they are Special Flood Hazard Areas that are capable of being inundated by a 100-year flood[10]. Because detailed studies have not been conducted by FEMA for Zone A-type floodplains, base flood elevations and flood hazard factors have not been determined[11]. The FEMA flood map indicates that the base flood elevation in the area around the proposed new bridge location would overtop the banks of the creek channel (Figure 3.1.4-1).

[10] The term 100-year flood is defined as a flood that statistically has a 1-percent chance of occurring in any given year.
[11] Base Flood Elevations (BFEs) are computed elevations to which floodwater is anticipated to rise during the base flood (100-year flood). BFE is the regulatory requirement for elevation or floodproofing of structures.

Cholame Creek is an incised gorge about 20 to 25-feet deep and varying in width at the top from 100 to 200-feet. The 100-year flow may be able to overtop the gorge at some of the narrower locations however, the project Hydraulics Engineer conducted a detailed study showing that the base flood elevation would not overtop the banks of the creek channel in the location of the new bridge.

The soils in the Cholame Valley are easily eroded but have enough consolidation and cohesion to stand with vertical sides. The Creek menders through the Cholame Valley and occasionally erodes the banks of the creek at curves. Over the last 40 years the south creek bank, between the existing bridge and the proposed bridge, has eroded causing the bank to migrate up to 80-feet. For the creek as a whole, this is somewhat unusual because looking at aerial photos covering large portions of the creek, much of the bank is in nearly the same location as it was 40 years ago.

For more information about the environmental setting please refer to the 2006 EIR/FONSI (Page 51).

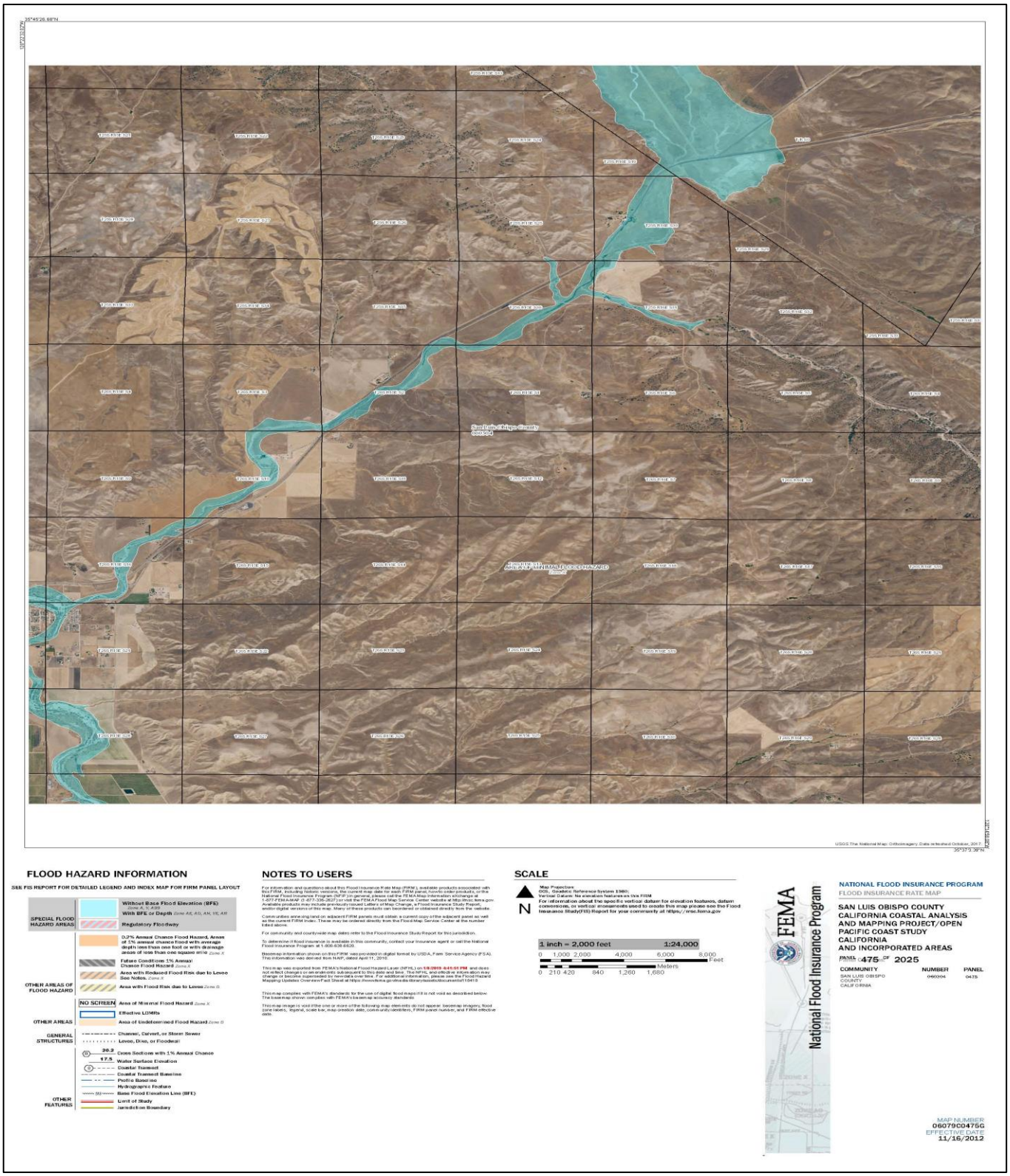


Figure 3.1.4-1: FEMA Flood Insurance Rate Map

Environmental Consequences

Both White Canyon and Cholame Creek floodplains would be crossed with the proposed Build Alternative. Both crossing structures have been designed to avoid impacts to the capacity of the floodplain[12].

The proposed highway would be elevated to prevent flows from the hills to the north from overtopping it. The proposed Cholame Creek bridge would be constructed approximately 750-feet downstream from the existing bridge and would be elevated to conform with the elevation of the new highway. The existing bridge and the existing roadbed east of the bridge would be removed and the land restored back to grassland.

For the White Canyon crossing, Caltrans conducted hydraulic analysis based on Caltrans cross culvert criteria and federal standards in order to design the culvert crossing to convey the 100-year (1% probability) flood without objectionable backwater depths and velocities[13] and to prevent flooding of the adjacent lands as a result of the new elevated highway. The proposed crossing at White Canyon would consist of two, 14-foot diameter steel pipes.

Caltrans *Highway Design Manual*, Section 821-3 requires that bridges be designed to pass a 50-year (2% probability) flood and also allow sufficient freeboard between the lowest structural member of the bridge and the water-surface elevation to ultimately convey the 100-year flood. The existing Cholame Creek bridge consists of a single 199-foot long two-lane bridge. The new proposed Cholame Creek bridge would consist of two, 199-foot long two-lane bridges (one eastbound and one westbound) elevated 6.85-feet above the 100-year flood water surface.

Rock Slope Protection (RSP) will be used at the inlet and outlet of the White Canyon pipe culverts and along the banks of Cholame Creek below the new bridge to dissipate flow velocity and reduce potential erosion. Wingwalls will be constructed at the inlet and outlet of the White Canyon box culverts to help direct flows into the culverts and to stabilize the soil, reducing scour potential around the culverts.

Caltrans conducted hydraulic modeling to analyze the predicted change in velocity as a result of various RSP configurations in the vicinity of the existing bridge (Cholame Creek Study, May 14, 2018). The Surface-Water Modeling System (SMS) program was used to highlight areas of higher erosive flow velocities up and downstream of the existing RSP and to compare flow velocities in the existing condition (with bridge) and proposed condition (without bridge). Currently most of the erosional force is directed toward the south bank of the creek in the vicinity of the existing bridge.

The four RSP configurations consisted of:

[12] When material is placed in an area prone to flooding, the size of the floodplain is reduced. During a flood event, water will go elsewhere, often into areas not prepared for a flood.

[13] Backwater is defined as water that is backed up within a stream or drainage facility by an obstruction such as a culvert or bridge.

- Configuration 1: All existing RSP remains in place
- Configuration 2: Remove the existing RSP from the north bank and leave the RSP on the south bank
- Configuration 3: Remove all the RSP
- Configuration 4: All existing RSP remains in place and additional RSP is added to the south bank for additional armoring.

All four configurations included the removal of the existing bridge. Each configuration was compared with the existing conditions to see if there were any increases in flow velocity which would result in an increase in erosion.

The modeling indicates that the least amount of change to the existing velocities would result from leaving the existing RSP in place (Scenario 1). None of the configurations affected the flow velocity beyond 200 feet upstream or downstream of the existing bridge. In the interest of reducing erosion potential at this location, Caltrans is proposing to leave the RSP in place in the vicinity of the existing bridge.

The project proposes to widen the existing two-lane highway to four-lanes, resulting in an increase in impervious surfaces. Surface flows coming off of the new four-lane expressway will be treated with Design Pollution Prevention Infiltration Area (DPPIA), type permanent Treatment Best Management Practices (TBMPs) in accordance with Caltrans National Pollution Elimination System (NPDES) permit. The proposed project is grandfathered under the previous NPDES permit (Order No. 99-DWA-06).

Through the design of the White Canyon pipe culverts and the Cholame Creek Bridge, combined with the implementation of DPPIA type TBMP's, the project, as proposed, will effectively avoid significant floodplain encroachment and preserve the natural and beneficial floodplain values.

The findings in the 2006 EIR/FONSI remain valid. The CEQA determination found that no significant impacts to hydrologic or floodplain resources would result from construction of the Cholame North Modified Alternative (Option A).

Avoidance, Minimization, and/or Mitigation Measures

For consistency, the minimization measures below coincide with the hydrology and floodplains measures (1-3) listed in Chapter 6 of the 2006 EIR/FONSI. Number extensions constitute additional measures to be implemented.

Changes or additional information based on more detailed design is provided in italics. Measure 3 has been omitted due to more recent information indicating changes to the base flood elevation.

Minimization Measure 1 – Existing culvert capacities would be analyzed and upgraded, extended, or replaced as necessary to follow the Caltrans cross-culvert criteria and federal standards for the proposed roadway widening. Treatments to the

specific culverts outlined in Table 3.1.4-3 *(2006 EIR/FONSI)* will be completed as agreed upon between Caltrans and the U.S. Environmental Protection Agency (see italics below):

Two 14-foot diameter steel pipe culverts at the White Canyon crossing will replace the existing 6-foot by 7-foot box culverts. The culvert inlets would be installed below stream grade. The culvert outlets would be raised to flatten the slope and a 2-foot tall concrete wall would be constructed inside the culvert at the inlet and outlet to help retain the sediment an prevent head-cutting upstream. Retention of sediment inside the culvert would encourage its use by migrating wildlife.

Minimization Measure 2 – The design of all new, widened, and re-constructed bridges would use the Caltrans bridge design guidelines and Federal floodplain standards and would comply with state and federal criteria.

The existing two-lane, 199-foot bridge will be replaced with two, 199-foot two lane bridges (one westbound and one eastbound). The distance between the bridge freeboard and the water surface elevation would be 6.85 feet.

Minimization Measure 3 – ~~To mitigate for potential rises in water-surface elevations in Cholame Creek associated with raising the highway profile grade in the Cholame section area, the length and height of the two new bridges proposed in Cholame section, Alternatives 1 and 2 would be increased. In addition to increasing the length and height of the bridge, a series of box culverts placed under State Route 46 are being proposed to mitigate potentially unacceptable backwaters associated with the raising of the highway profile grade. These box culverts would be installed under any of the proposed build alternatives.~~

Minimization Measure 3 was prepared with the assumption that the base flood elevation in the vicinity of the proposed bridge would overtop the banks of the creek channel (Figure 3.1.4-1). This measure was written prior to conducting a detailed study showing that the base flood elevation would not overtop the banks of the creek channel in this area. Therefore, this measure has been deleted and a new measure (see below in italics) has been included to account for potential flooding of the roadway from the hillsides to the north.

Minimization Measure 4 - To prevent flows from the adjacent hillsides to the north from overtopping the roadway, the roadway and the two new bridges would be elevated.

3.1.4.2 Water Quality and Storm Water Runoff

Regulatory Setting

There have been changes to the regulatory setting for water quality and storm water since 2006 and many of the minimization measures and BMP's have either been eliminated because they are no longer relevant or have been changed. These changes are discussed under the Environmental Consequences and Avoidance, Minimization and Mitigation headings.

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 source14 unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

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

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCBs) 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 (USACE).

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

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

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

[14] A point source is any discrete conveyance such as a pipe or a man-made ditch.

the U.S. EPA in conjunction with the USACE and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[15] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

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

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

[15] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems (MS4)

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

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), Order No. 2015-0036-EXEC (conformed and effective April 7, 2015), and Order WQ 2017-0026-EXEC (effective November 27, 2017) 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 SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Stormwater Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP 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 SWMP 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 BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit, Order No. 2009-0009-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 RWQCB. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

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

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the 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 CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act) that define activities, such

as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

Affected Environment

Because the setting hasn't changed since finalization of the 2006 EIR/FONSI, this Supplemental Draft EIR/Updated EA does not include a detailed discussion on the affected environment. For a detailed description of the affected environment please refer to the 2006 EIR/FONSI.

Environmental Consequences

A Storm Water Quality Assessment was completed in January 2003, which evaluated potential impacts to water quality and storm water runoff as a result of construction and operation of all project alternatives related to the *Corridor Project*.

A Revised Water Quality Assessment was completed on February 16, 2018 to determine if the proposed changes to the project, as they relate to the Cholame Section would change the conclusions and recommendations found in the January 2003 Storm Water Quality Assessment and the 2006 EIR/FONSI.

Adverse impacts to water quality would result from the addition of impervious surfaces (two new lanes). Beneficial impacts to water quality would result from the opportunity to upgrade the storm drainage systems to current standards and to incorporate permanent treatment BMPs such as infiltration swales and infiltration strips to reduce potentially polluted storm water that flows from Caltrans property.

Additionally, the proposed Cholame North Modified Alternative (Option A) would realign the highway further away from Cholame Creek compared with Cholame Alternative 1. Moving the highway alignment further from Cholame Creek and restoring the existing highway to grasslands will provide a vegetated buffer between the proposed alignment and the creek, allowing roadway pollutants to filter out prior to entering Cholame Creek.

The findings in the 2006 EIR/FONSI remain valid. The CEQA determination found that no significant impacts to water quality would result from construction and operation of the Cholame North Modified Alternative (Option A).

Avoidance, Minimization, and/or Mitigation Measures

For consistency, the minimization and BMP measures below coincide with the water quality measures (1-11) listed in Chapter 6 of the 2006 EIR/FONSI. Updated or additional information based on more detailed design is provided in italics. Measures that have been omitted due to changes in regulations related to the NPDES Permit and the CGP have a strikethrough.

Minimization Measure 1 – Approved design pollution prevention and treatment BMPs would be incorporated into the project design. Permanent, location specific BMPs

would be determined by the project design team in conjunction with the district storm water coordinator and the Regional Water Quality Control Board.

Approved design pollution prevention and treatment BMPs have been incorporated into the project design. Permanent, location specific BMPs have been determined by the project design team in conjunction with the District Stormwater/NPDES Permit Coordinator. Where feasible, *the project will implement a combination of design pollution prevention infiltration areas (DPPIA) swales and/or strips that will infiltrate and treat the Water Quality Volume (WQV) from the 85th percentile 24-hour storm event. The following measures will be incorporated into this project to improve water quality:*

- *DPIAA strips along the facility will infiltrate WQV runoff from impervious areas. This method will decrease the velocity of discharge plus decrease the volume of sheet flow discharge through infiltration and allow for pollutant removal.*

- *DPIAA swales will be constructed to infiltrate and treat the WQV for concentrated flows coming from pavement and cut slopes.*

- *All slopes will be landform graded to blend with the existing natural topography and would be no steeper than a 45-degrees. This will improve revegetation efforts, reduce erosion and decrease maintenance costs. Use of dikes would be minimized to the extent possible to promote sheet flow to vegetated areas, promoting infiltration and improving water quality.*

Impact/reason for minimization measure – Caltrans is required by the NPDES permit to control the discharge of pollutants from Caltrans facilities, activities, and properties to the maximum extent practicable. These permanent BMPs would be designed to minimize impacts to water quality to the maximum extent practicable

Minimization Measure 2 – A Storm Water Pollution Prevention Plan (SWPPP) would be prepared, approved, and implemented prior to the start of any ground disturbing activities.

Impact/reason for minimization measure – The SWPPP would identify the BMP's that would be implemented to reduce or eliminate the potential for short-term impacts to water quality as a result of construction.

Impact/reason for BMP measure – The following BMP measures (3 – 9) are intended to minimize impacts to water quality during construction.

BMP Measure 3 – Sediment control barriers (example, silt fences, hay bales, drain inlet protection, gravel bags) would be used to prevent the movement of pollutants to surface bodies of water during storm events.

Sediment control barriers such as temporary large sediment barrier, temporary fiber rolls, temporary erosion control, stabilized construction site entrance/exit, street

seeking, temporary check dam, drain inlet protection, gravel bags) would be used to prevent the movement of pollutants to surface bodies of water during storm events.

BMP Measure 4 – Existing vegetation would be preserved as much as possible.

BMP Measure 5 – All disturbed areas would be stabilized with vegetation or hard-surface treatment upon completion of construction in any specific area.

BMP Measure 6 – All inactive disturbed soil areas would be temporarily stabilized with both sediment and temporary erosion control 10 days prior to the beginning of the rainy season ~~(October 15th).~~

All inactive disturbed soil areas would be temporarily stabilized with both sediment and temporary erosion control prior to every predicted rain event. October 15th is no longer used to define the beginning of the rainy season.

~~BMP Measure 7 – No more than 20 acres of ground would be disturbed at any one time during construction.~~

~~BMP Measure 8 – No more than 5 acres of ground would be disturbed at any one time during the rainy season (October 15th to April 15th), unless approved by the Resident Engineer.~~

Measures 8 and 9 above are being removed due to changes in the Construction General Permit (CGP) approved in September 2010. The 2010 CGP eliminated the acreage limits and now directs the contractor to implement the provision regarding Disturbed Soil Area (DSA) based on an individual projects Stormwater Pollution Prevention Plan (SWPPP). Additionally, the CGP does not define the "rainy" season due to the unpredictability of rain events in a given year. Rather, the CGP now requires a contractor to cover inactive DSA within fourteen days and apply permanent erosion control immediately upon completion of finished slopes or grade. When a rain event is predicted, which is defined as a 50% or greater chance of getting 0.1-inch or more of rain, the contractor is required to immediately protect all DSA, including stockpiles.

BMP Measure 9 – Erosion control methods such as hydroseeding, erosion control blankets, and emulsion would be used during the rainy season.

BMP Measure 10 – Caltrans would submit a Notice of Construction (NOC) to the RWQCB 30 days prior to the start of construction.

Caltrans would submit a Notice of Intent (NOI) to the SWRCB through the Stormwater Application and Report Tracking System (SMARTS). Construction activities may not commence until the SWPPP has been approved, uploaded to SMARTS and a Waste Discharge Identification (WDID) number issued for the project.

BMP Measure 11 – Temporary erosion and sediment control BMPs would be implemented at all times from ~~October 15th to April 15th~~.

Temporary erosion and sediment control BMPs would be implemented when a rain event is predicted, which is defined as a 50% or greater chance of getting 0.1-inch or more of rain. October 15th through April 15th is no longer used to define the beginning of the rainy season.

3.1.5 Noise

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

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

NATIONAL ENVIRONMENTAL POLICY ACT AND 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA) involvement (and the Department, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 Code of Federal Regulations [CFR] 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table (3.1.5-1) lists the noise abatement criteria for use in the NEPA/23 CFR 772 analysis.

Table 3.1.5-1: Noise Abatement Criteria

Activity Category	***NAC, Hourly A-Weighted Noise Level, Leq(h)***	***Description of Activity Category***
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.

[1] Includes undeveloped lands permitted for this activity category.

Figure 3.1.5-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section.

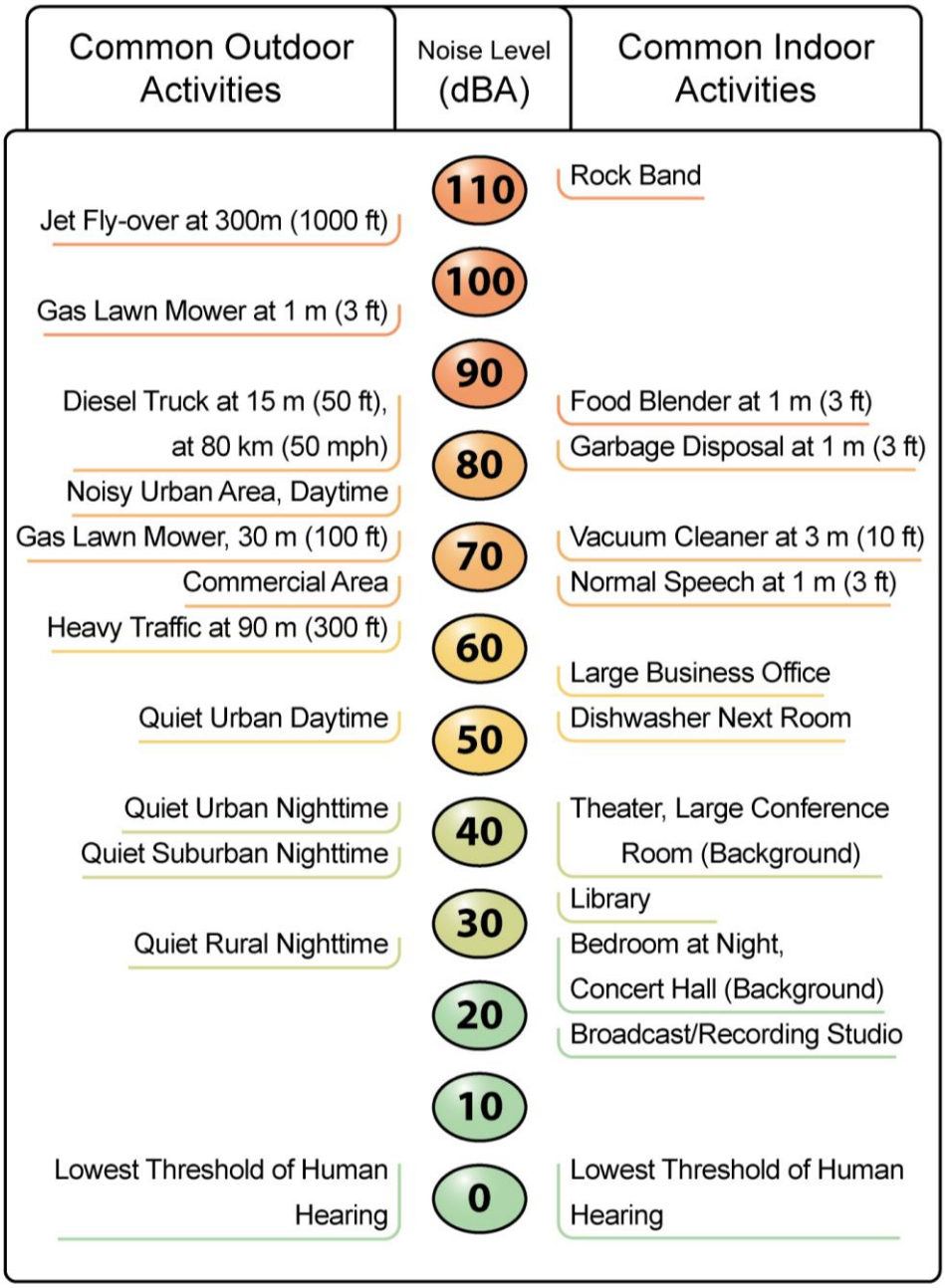


Figure 3.1.5-1: Noise Levels of Common Activities

According to Caltrans *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011,* a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5 dBA reduction for all impacted receptors in the future noise levels must be achieved for an abatement to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. Additionally, a noise reduction of at least 7 dBA must be achieved at one or more benefited receptors for an abatement measure to be considered reasonable. As defined in CFR Section 772.5 of the regulation, reasonableness is the combination of social, economic, and environmental factors considered in the evaluation of a noise abatement measure. The overall reasonableness of noise abatement is determined by the following three factors:

- The noise reduction design goal.
- The cost of noise abatement.
- The viewpoints of benefited receptors

Affected Environment

The affected environment has not changed substantially from the time that the 2006 EIR/FONSI was finalized. The surrounding area within the Cholame Section is composed primarily of agricultural lands with scattered rural residential parcels. For more detailed information regarding the affected environment, please refer to the 2006 EIR/FONSI.

The following reports were used to evaluate potential noise impacts associated with construction and operation of a four-lane expressway in the Cholame Section:

- Noise Study Report (NSR), dated May 8th, 2006
- Nose Study Report (NSR) Addendum, dated October 5th, 2018

The October 2018 NSR addendum was prepared to address noise impacts in the Cholame Section as a result of the proposed changes to the Project since finalization of the 2006 EIR/FONSI.

The Cholame Section contains two sensitive receptor locations, the Jack Ranch Café, located toward the east end of the Cholame Section near PM 54.0 and a mobile home located at the west end of the Cholame Section near PM 51.5. The Jack Ranch Café was identified in the 2006 EIR/FONSI as Receptor # 22, for consistency the same numbering system is used in this document. The mobile home was not evaluated in the 2006 EIR/FONSI and is identified in this document as Receptor #23,

since the last sensitive receptor identified in the corridor in the 2006 EIR/FONSI was Receptor #22. See Figures 3.1.5-2 and 3.1.5-3 showing the location of these receptors with respect to the existing and proposed highway alignment.

According to the Property Detail Report generated by the Landvision Database, R-23 was built in 2003, likely after the release of the Draft Environmental Impact Report/Environmental Assessment (DEIR/EA). Therefore, this receptor was not analyzed in the 2006 EIR/FONSI.

The change in the project setting, i.e., new identified sensitive receptor (R-23) and the substantial alignment change near the Jack Ranch Café (R-22) required that additional noise analysis be conducted. Updated Caltrans Noise Analysis Protocol adopted in May 2011 and updated traffic volumes and fleet mix percentages (percentage of each type of vehicle in the total traffic volume) based on the new design year of 2042 were used to conduct the analysis and prepare the 2018 NSR Addendum.

It is important to note that the proposed highway alignment in the vicinity of R-23, along the west end of the Cholame Section, has not changed substantially between the Cholame Alternative 1 (2006 EIR/FONSI) and the Cholame North Modified Alternative (Option A). As described in Section 2.3.1, the Cholame North Modified Alternative (Option A) does not veer from the Cholame Alternative 1 alignment until approximately PM 52.0, east of R-23. The most substantial alignment shift is in the vicinity of the Jack Ranch Café parcel.

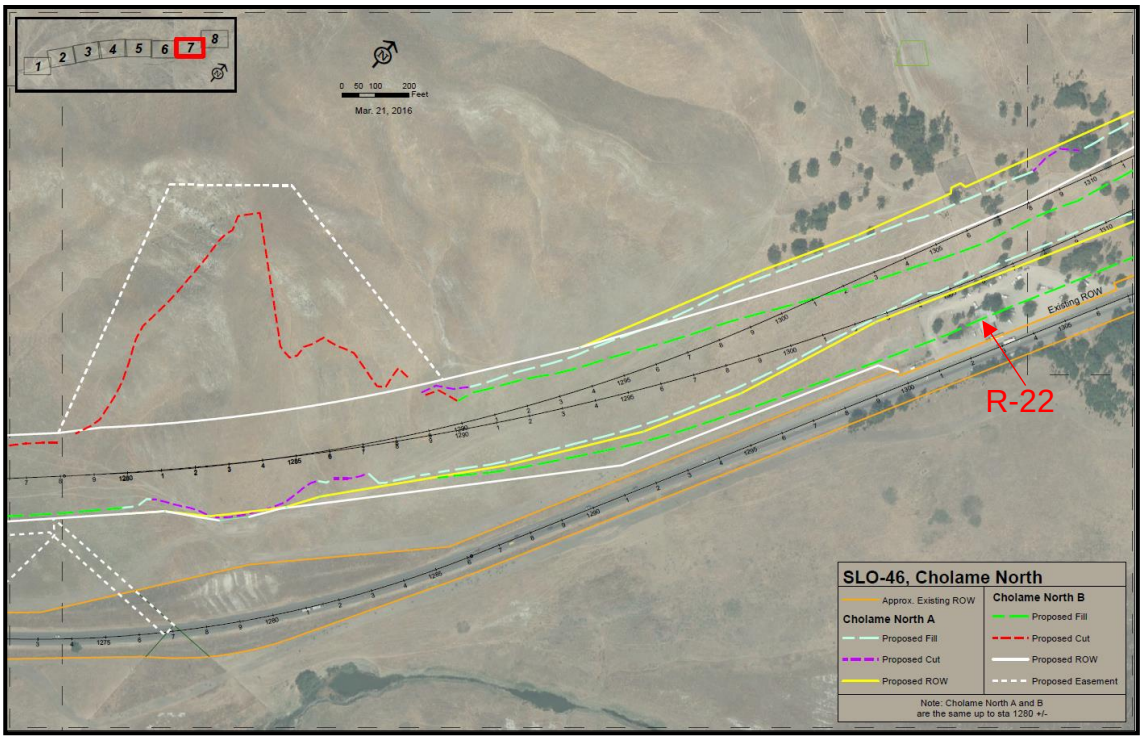


Figure 3.1.5-2: Receptor 22 (R-22) Jack Ranch Café

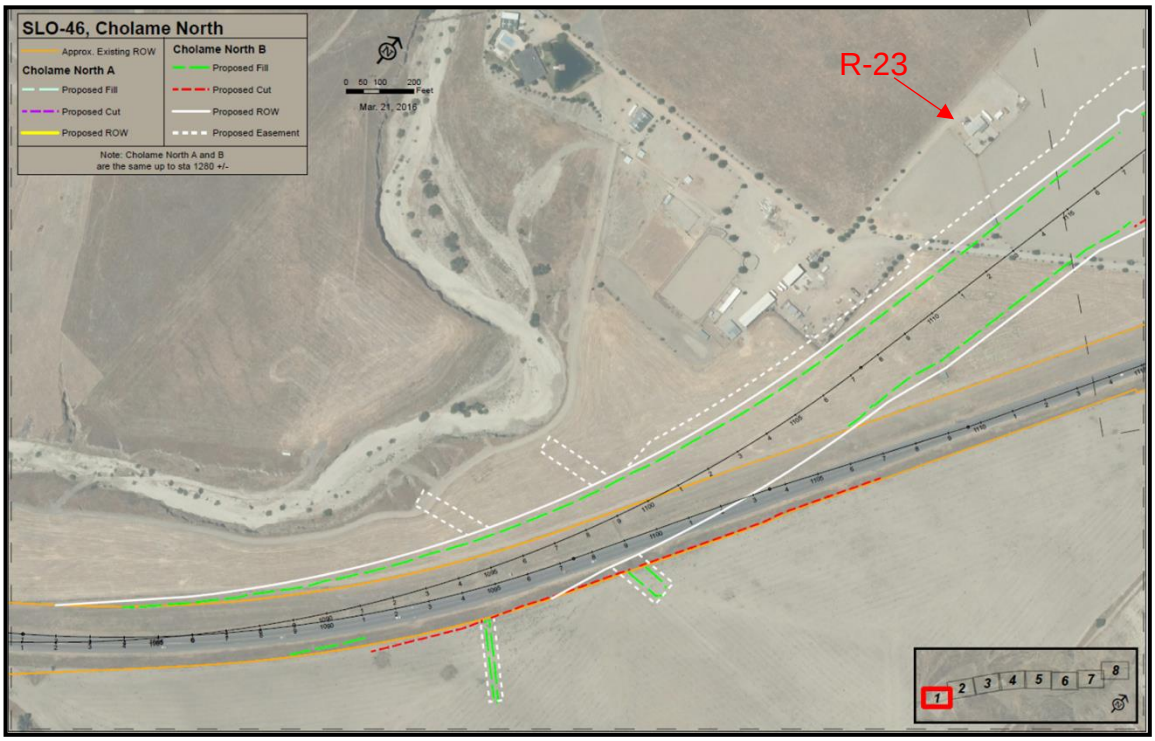


Figure 3.1.5-3: Receptor 23 (R-23) Mobile Home

Environmental Consequences

Title 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under Title 23 CFT 772.7, projects are categorized as Type I, Type II or Type III projects. The FHWA defines a type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location, or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. Type I projects include those that create a completely new noise source or move the traffic closer to a receiver. This project would be classified as a Type 1 project because it substantially changes the horizontal and vertical alignment, increases to number of through traffic lanes and moves traffic closer to one sensitive receptor location.

Under Title 23 CFR 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. A noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC. If the project would result in a noise impact, Title 23 CFR 772 requires that the project sponsor (in this case Caltrans) consider noise abatement before adoption of the final NEPA document. This process involves identification of noise abatement measures that are reasonable and feasible.

The project site was visited on May 8, 2018 to obtain current noise measurements in several locations to calibrate the Traffic Noise Model (TNM 2.5). Once the noise model is calibrated, predictions can be made for the existing condition using baseline traffic volumes. The baseline traffic volumes are then compared with the predicted future noise levels, forecasted out 20 years from completion of the project, i.e., Design Year 2042 to determine if the proposed Cholame North Modified Alternative (Option A) would result in a noise impact. Predicted design year noise levels were modeled for the Build Alternative and the No-Build Alternative condition, i.e., if the project were to be constructed or if the No-Build Alternative was selected and the highway remained a two-lane highway in the same location. Table 3.1.5-2 provides the current and predicted noise levels for the two receptor locations within the Cholame Section.

Table 3.1.5-2 Existing and Predicted Noise Levels – Cholame Section

Receptor #	Existing Receptor Peak Hour (dBA Leq_h)	Build Alternative Design Year 2042 (dBA Leq_h)	No-Build Alternative Design Year 2042 (dBA Leq_h)	Design Year 2042 Build Alternative minus No-Build Alternative (dBA Leq_h)
22	69	64	71	-7
23	53	59	55	+4

Noise levels at the Jack Ranch Café (R-22) would be lower after construction of the proposed Build Alternative than the current noise levels. This same conclusion was made in the 2006 EIR/FONSI if the Cholame Alternative 1 were to be constructed.

The predicted 5 dBA decrease as a result of constructing the proposed Build Alternative can be attributed to the fact that traffic would be moved farther away from the Jack Ranch Café, compared to the proximity of the café to the current location of the highway.

According to Table 3.1.5-1 (page 65), the NAC for the exterior of a restaurant is 72 dBA. If the proposed Cholame North Modified Alternative (Option A) is constructed, the predicted future noise levels in the year 2042 at the Jack Ranch Café (R-22) would be 64 dBA, 5 dBA less than the current peak hour noise levels. Therefore, the proposed Build Alternative would not result in a noise impact to the Jack Ranch Café and consideration of noise abatement measures are not warranted.

Noise levels at the mobile home (R-23) would increase after construction of the proposed Build Alternative. Current peak hour noise levels at R-23 were modeled at 53 dBA. If the project were to be constructed, future peak hour noise levels in design year 2042 are predicted to be 59 dBA, 6 dBA higher that what they are now. In comparing the predicted noise levels for the future Build Alternative condition with the future No-Build Alternative condition, the Build Alternative condition would be 4 dBA higher than if the project were not constructed.

The NAC for the exterior, outdoor gathering areas of residences is 67 dBA. Current and predicted future noise levels (53 dBA vs. 59 dBA respectively) at R-23 do not approach the abatement criteria for residences and future noise levels with the project would not substantially exceed existing noise levels. Therefore, construction of the proposed Cholame North Modified Alternative (Option A) will not result in a noise impact to R-23 and consideration of noise abatement measures are not warranted.

Avoidance, Minimization, and/or Mitigation Measures

For consistency, the minimization measures below coincide with the noise Minimization Measures listed in Chapter 6 of the 2006 EIR/FONSI. These measures were written to apply to all *Corridor Project* Sections. However, some of the measures and/or information in the measures pertain to sections of the project that have already been constructed, therefore a measure with a strikethrough indicates that this measure has already been implemented in previous project sections and do not apply to the Cholame Section.

~~Minimization Measure 1~~

~~Receptor 1: Minimize the amount of cut on eastbound side to the greatest extent possible.~~

~~Minimization Measure 2 – Receptors 4b and 5: Construct 6-foot tall earthen berm between STA 109+40 and 117+00 on the eastbound side at the right of way line (Estrella Section, map sheet E8 and E9, Appendix A.1, Volume II)~~

~~Minimization Measure 3 – Receptor 17: Reduce cut to the greatest extent possible between STA 119+00 and 121+40.~~

Minimization Measure 4 – The telephone number of the Resident Engineer would be provided to residents in the event that a complaint or concern arises.

Minimization Measure 5 – Construction information would be posted in local news media prior to the start of each phase of construction.

Minimization Measure 6 – In areas where sensitive receptors are identified, temporary sound barriers consisting of sheet plywood on safety shape barrier may be used to reduce potential construction noise impacts.

Minimization Measure 7 – All equipment used in construction would have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators, intact and operational.

Minimization Measure 8 – All equipment operating on the project site would conform to the "Sound Control Requirements" of the Special Provisions that would be part of the contract and to Section 14-8.02 of Caltrans Standard Specifications.

Minimization Measure 9 – The Resident Engineer would schedule the noisiest construction activities during times least likely to disturb local residents.

3.1.6 Topography (Incorporate by Reference)

3.1.7 Paleontology (Incorporate by Reference)

3.1.8 Mineral Resources (Incorporate by Reference)

3.1.9 Energy

Regulatory Setting

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

The California Environmental Quality Act (CEQA) Guidelines, Appendix F, Energy Conservation, state that EIRs are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

Affected Environment

The State Route 46 corridor is a critical interregional route that connects the Central Coast with the Central Valley and points beyond. The route had the highest traffic volumes of any east-west corridor between the Pacheco Pass (SR 152) to the north and the greater Los Angeles freeway system to the south. State Route 46 is the most viable and active east-west corridor connecting the Central Coast to the San Joaquin Valley between US 101 and Interstate 5 (I-5), as well as the local communities and agricultural processing facilities carrying products between the Central Valley and the rest of the nation via I-5 and two Class 1 rail lines. The Route is identified as a Priority Interregional Highway within a statewide system of Strategic Interregional Corridors. Within the project limits, Route 46 is designated as a rural principal arterial.

Approximately 18 miles of the *Corridor Project* has been completed, diminishing peak hour congestion in those sections. However, the remaining two-lane sections of the *Corridor Project* continue to experience peak hour congestion, as limited passing opportunities cause traffic to back up behind slower moving vehicles.

Congestion associated with low LOS, contributes to inefficient energy consumption as vehicles use extra fuel while idling and accelerating in stop-and-go traffic or when traffic is moving at slower speeds. The optimum speed for fuel efficiency is 55 miles per hour (MPH).

The annual average daily traffic (AADT) in 2017 was approximately 15,400 vehicles per day within the limits of the Cholame Section. Of this, about 17% of the traffic volume consisted of trucks. The projected AADT for 2022 is 16,500 and for the design year 2042, AADT is projected to be 22,500.

The annual average daily traffic is associated with traffic speeds that represent the whole year, at all times of day/night, not just the congested peak-hour. This congestion relief project will expand the existing two-lane highway to a four-lane divided expressway, raising the posted speed limit from 55 to 65 miles per hour. The annual average daily traffic speed is much closer to the posted speed limit, as traffic volumes outside of the peak-hour are moving at free-flow speeds. The annual average speed for a project condition would be affected by its respective posted speed limit. For example, the future Build Alternative condition would have an annual average daily speed of 65 mph for light vehicles, while the future No-Build Alternative condition would have an annual average daily speed of 55 mph. The future Build Alternative condition would consequently cause a less efficient usage of fuel because the speed limit would be higher than the optimum speed for fuel efficiency (55 mph). This is a necessary drawback, as peak-hour congestion needs to be resolved.

Environmental Consequences

The proposed Project is within the jurisdiction of the San Luis Obispo Council of Governments (SLOCOG). The Project is included in the SLOCOG's 2014 fiscally constrained Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), where it is described as "a statewide priority to ensure safe and efficient

passage for travelers and commodity moving between the Central Valley and the Central Coast," and it remains a priority corridor in the SLOCOG's 2019 RTP/SCS.

Projected operational energy consumption from mobile sources (vehicles driving on the highway) was calculated using the CT-EMFAC2017 emissions model developed by Caltrans. This model calculates project level emissions and fuel consumption using data from the California Air Resources Board's EMFAC model (Table 3.1.9.1). This operational analysis uses AADT and annual average speed.

Projected energy consumption from construction activity was developed by obtaining fuel consumption projections in gallons from the Caltrans Construction Emission Tool (CAL-CET). CAL-CET models both emissions and fuel consumption based on project-specific construction information (Table 3.1.9.2)

Table 3.1.9-1: Existing and Projected Fuel Consumption for Mobile Sources

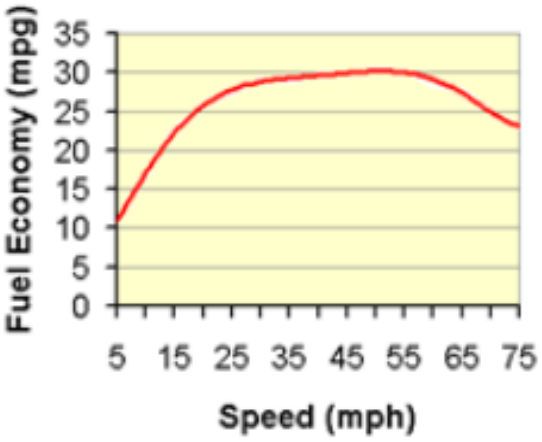
Daily Fuel Consumption – Mobile Sources		
	Gasoline (gal)	**Diesel (gal)**
2016 Existing	3329	1028
2042 Build Alternative	2884	1013
2042 No-Build Alternative	2735	915

Table 3.1.9-2: Yearly Fuel Consumption for Construction

Fuel Consumption- Construction		
	Gasoline (gal)	Diesel (gal)
2020	2,451	4,336
2021	55,326	102,526
2022	53,299	77,263
Total (540 Working Days)	111,078	184,127

Table 3.1.9-1 shows that by design year 2042, vehicles driving within the limits of the Cholame Section are expected to consume approximately 2,884 gallons of gasoline and 1,013 gallons of diesel fuel per day per day under the proposed Build Alternative. Under the 2042 No-Build Alternative, vehicle fuel consumption is predicted to be 2,735 gallons of gasoline and 915 gallons of diesel fuel per day. Due to the minor increase in projected fuel consumption between the future Build Alternative and No-Build Alternative condition, the proposed Build Alternative is not expected to

contribute to a substantial increase in energy consumption by the year 2042. Additionally, due to passage of legislation, including State Senate and Assembly bills and executive orders, fuel efficiency in California is expected to improve substantially over the next 25 years. By design year 2042, it is anticipated that the average vehicle will be able to travel up to 50 miles per one gallon of fuel. This anticipated improved fuel efficiency, combined with congestion relief associated with construction of the proposed Build Alternative would result in increased fuel economy of the Build Alternative compared to 2016 conditions.



(Source: fueleconomy.gov)

Figure 3.1.9-1: Fuel Consumption related to Vehicle Speed

Proposed project construction would primarily consume diesel and gasoline through operation of heavy-duty construction equipment, material deliveries, and debris hauling. As indicated in Table 3.1.9-2 above, energy use associated with proposed project construction is estimated to result in the short-term consumption of 184,127 gallons from diesel-powered equipment and 111,078 gallons from gasoline-powered equipment. This fuel consumption represents a small demand on local and regional fuel supplies that would be easily accommodated, and this demand would cease once construction is complete. Moreover, construction-related energy consumption would be temporary and not a permanent new source of energy demand, and demand for fuel would have no noticeable effect on peak or baseline demands for energy. While construction would result in a short-term increase in energy use, construction design features would help conserve energy, the measures listed below would minimize inefficient, wasteful, and unnecessary consumption of energy.

Avoidance, Minimization, and/or Mitigation Measures

The following minimization measures to be implemented to minimize temporary construction related air quality impacts will also reduce energy consumption during construction.

Minimization Measure 1 - Schedule truck trips to minimize impacts to traffic flow.

Minimization Measure 2 – Construction equipment would be operated in proper tune according to manufacturer's specifications.

Minimization Measure 3 – Use only California Air Resources Board approved fuel for all diesel-powered equipment used during construction.

Minimization Measure 4 – To the extent feasible, use electric grid power to replace diesel-powered generators and to power air compressors and light sources.

Minimization Measure 5 – Diesel equipment shall not be allowed to idle for more than 10 minutes.

3.2 Biological Environment

The Biological Environment Section of this document is formatted differently than the Biological Environmental Section in the 2006 EIR/FONSI partly due to the discovery of new biological resources and partly due to new environmental document standards adopted by Caltrans since 2006. The reformatted section provided here includes more extensive information about each resource and contains additional headers that allow the reader to more easily navigate between the table of contents and the identified biological resources. The resources discussed below include all resources within the Cholame Section that were discussed in the 2006 EIR/FONSI, as well as new resources that have been identified in the Cholame Section since completion of the 2006 EIR/FONSI. All newly observed resources are identified as a "New Resource" in section headings.

There are extensive changes to the avoidance, minimization, and mitigation measures proposed for the Cholame Section in comparison with the 2006 EIR/FONSI due to a) changes in the resources present in the Cholame Section; b) changes in regulations and standards by Caltrans and permitting agencies; c) the development of new technologies and conservation strategies since 2006, and d) in response to feedback from implementing these measures on the previous sections of the larger *Corridor Project*. For consistency with the new formatting of the biological environment sections and for reader clarity, the measures have been renumbered with a prefix to match subsection headings, and the old numbering system from the 2006 EIR/FONSI is provided in parentheses. Changes to the 2006 measures are presented such that additions are italicized, and deletions are struck out. Section 6.8 of this document includes a summary of all measures to be implemented in the Cholame Section and provides explanations for measures that have been eliminated entirely.

3.2.1 Natural Communities (Vegetation section of the 2006 EIR/FONSI)

This section of the document discusses natural communities of concern. In the 2006 EIR/FONSI, natural communities were discussed under the heading "Vegetation." Since release of the 2006 document, Caltrans has developed new standards for environmental document and a document template that divided the "Vegetation"

section into two subsections: Natural Communities (this section) and Plant Species (Section 3.2.3).

The focus of this Natural Communities 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 Section 3.2.5 (Threatened and Endangered Species), and wetlands and other waters are discussed in Section 3.2.2.

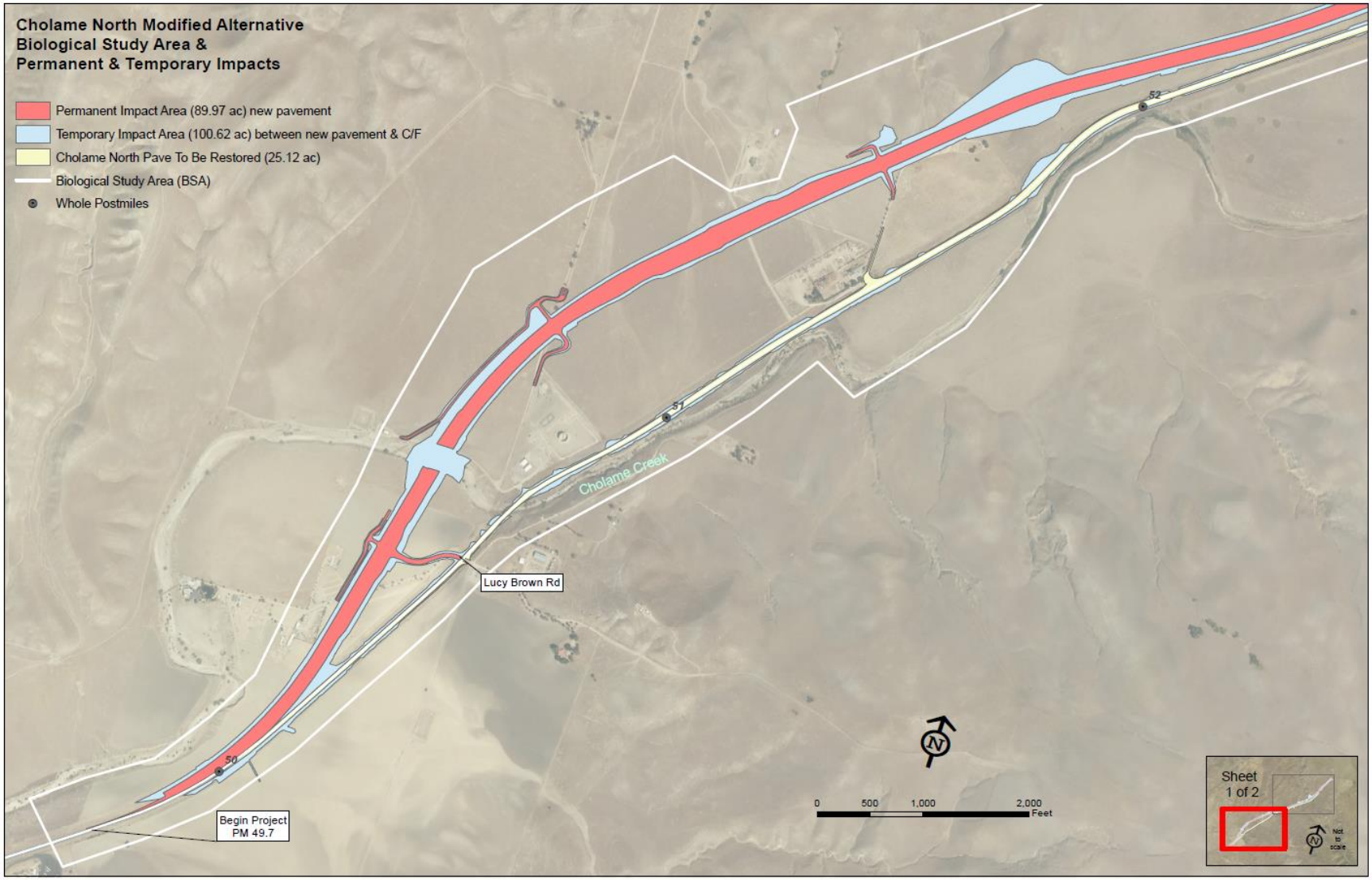


Figure 3.2.1-1 (sheet 1 of 2): Biological Study Area of the Cholame North Modified Alternative

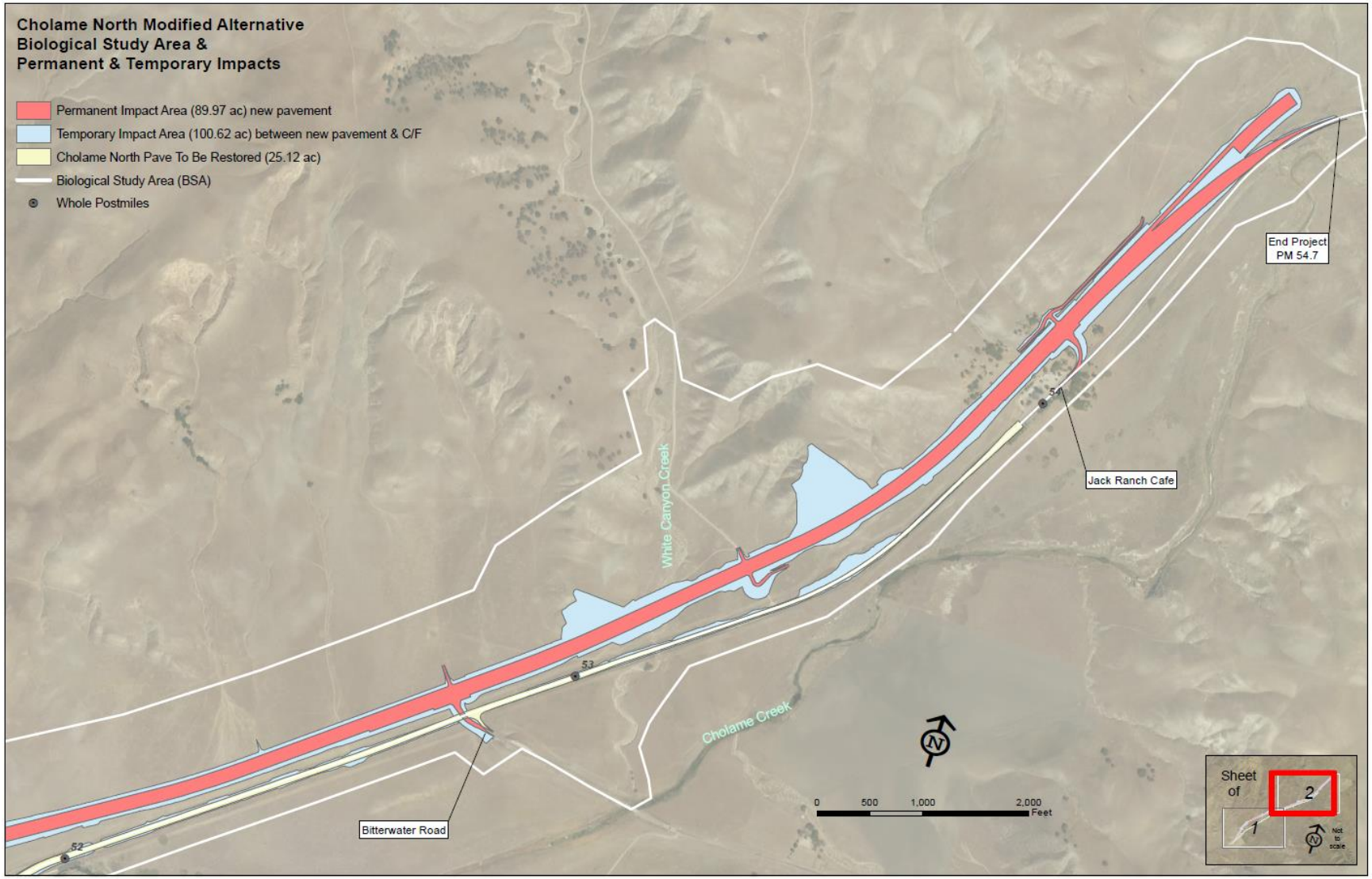


Figure 3.2.1-1 (sheet 2 of 2): Biological Study Area of the Cholame North Modified Alternative

Affected Environment

The 2006 EIR/FONSI, and the June 2019 Supplemental Natural Environmental Study completed for the Cholame Section were used to prepare this section of the document. The Biological Study Area (BSA) identified for the Cholame Section includes all areas that could be directly, indirectly, or permanently affected by the proposed project, as depicted in Figures 3.2.2-1 above.

The biological setting of the Cholame Section remains relatively unchanged since the completion of the 2006 EIR/FONSI. The Cholame Section traverses a northwest-southeast trending valley between the Cholame Hills to the north and the northern extension of the Temblor Range to the south. Meandering across the low-lying valley is Cholame Creek, which is the dominant topographic feature of the valley, and parallels the existing State Route 46 alignment. Cholame Creek through the BSA contains sections that flow periodically (ephemeral), and sections that flow year-round (perennial), supporting limited sections of wetlands (discussed further in Section 3.2.2) and riparian habitat. The Cholame Section is generally dominated by disturbed grasslands composed mainly of non-native annual grasses and forbs, a condition that remains unchanged since the 2006 EIR/FONSI. Trees are scarce within the Cholame section and most trees present are non-natives.

The 2006 EIR/FONSI identified six vegetative communities contained in the larger *Corridor Project,* three of which are considered natural communities of special concern: riparian woodland (includes Freemont cottonwood woodland), oak woodland/savanna (includes blue oak woodland), and valley sink scrub (now referred to as bush seepweed scrub). An additional natural community of special concern, scale broom scrub, has since been identified within the BSA for the Cholame Section and has thus been included in this document. The three other plant communities identified in the 2006 EIR/FONSI include: California annual grasslands, agricultural (cropland) areas, and vineyards.

Only two of the identified communities of special concern occur within the Cholame Section: bush seepweed scrub and scale broom scrub. Therefore, these are the only two communities discussed in this document.

Valley Sink Scrub/Bush Seepweed Scrub (New Resource)

The most recent California Native Plant Society Online Manual (2018) has reclassified valley sink scrub as bush seepweed scrub. This vegetation community is considered “vulnerable” in California due to a restricted range, relatively few populations, recent and widespread declines, and other factors making it vulnerable to local extinction (CDFW CNDDB 2019).

This plant community was identified within the Wye Section in 2006 but only recently observed within the Cholame Section. Therefore, it is considered a new resource within the Cholame Section.

Within the southeast corner of the Cholame Section where the valley begins to widen, an approximately 0.35-acre patch of bush seepweed scrub plant community has been identified. The natural community was identified by the presence of *Suaeda nigra* (bush seepweed) and *Frankenia salina* (Aalkali heath). Bush seepweed is the dominant scrub layer and Alkali heath is the dominant understory, along with annual grasses. This plant community tends to occur in concave-shaped uplands adjacent to Cholame Creek, where the creek banks have slumped and consequently hold water longer.

Scale Broom Scrub (New Resource)

Scale broom scrub is a shrub layer often dominated by scale broom (*Lepidospartum squamatum*) and is considered a sensitive natural community. This plant community has an open canopy and may be two-tiered with grasses as an herbaceous understory. Scale broom is a woody shrub that grows up to two meters tall and establishes in intermittently or rarely flooded areas along alluvial deposits, i.e., material consisting of silt, sand, clay, gravel, and organic matter. However, this plant is not considered hydric and is classified as a Facultative Upland plant, meaning that it usually occurs in non-wetland areas, but is occasionally be found in wetlands. The other associated plants within this plant community are highly variable and can include shrubs such as California buckwheat (*Eriogonum fasciculatum*) and/or annual grasses.

Within the Cholame Section, scale broom scrub occurs only in the northeast within White Canyon, primarily on the northern side of the existing State Route 46. The primary species making up the shrub canopy is scale broom, with annual grasses, forbs and herbs populating the understory.

Habitat Connectivity & Wildlife Crossings (New Resource)

California annual grassland is the dominant plant community within the Cholame Section. This natural community, although not a natural community of concern, provides habitat for a diversity of wildlife species, including special status species such as the endangered San Joaquin kit fox and threatened California red-legged frog, as well as California species of special concern such as the western spadefoot toad and burrowing owl. See Sections 3.2.4 and 3.2.5 for detailed information on animal species that have the potential to occur within the project limits.

Currently, State Route 46 can be a barrier for wildlife that utilize grassland habitats in the greater Cholame Valley region for foraging, shelter, and/or breeding. Wildlife barriers that inhibit animal movement, such as State Route 46, divide natural communities and their habitats – a process referred to as habitat fragmentation. Habitat fragmentation can create changes in the composition and dynamics of natural communities.

The most prominent physical barrier to animal movement is the existing concrete median barrier that extends for about 1.4 miles between postmiles 51.4 and 52.8.

Concrete median barriers that lack proper exclusion fencing and undercrossings physically prevent most terrestrial wildlife species from crossing the roadway, including both large and small-bodied animals. Wildlife species including coyote, red fox, American badger, racoon and ground squirrel have all been documented as roadkill within stretches of the Cholame Section where concrete median barriers exist. State Route 46 is also considered a visual barrier to wildlife that might be deterred by black, shiny pavement, and a behavioral barrier to wildlife due to the noise of the roadway and fear of fast-moving cars.

In addition to the existing concrete median barrier, there are sections of Highway 46 where fencing has essentially been doubled up. In previous sections of the *Corridor Project* (Whitley 2A and Whitley 2B), Caltrans state right-of-way fence was installed with materials and methods not adequate for containing livestock, therefore some private landowners have installed their own livestock fence immediately adjacent to the right-of-way fence. Wildlife is accustomed to jumping or going under a single barbed wire fence. However, when faced with two sets of barbed-wired fencing, sometimes as much as 18 inches apart and thick dense vegetation growing between them, it can act as a complete barrier for wildlife movement. The Cholame Section Plans currently include right-of-way fencing that will not be adequate for livestock, therefore there is potential that landowners will install their own fencing adjacent to it.

More information concerning how State Route 46 acts as a barrier for specific species can be found in Sections 3.2.4 and 3.2.5 of this document.

Environmental Consequences

Analysis of project impacts on natural communities focuses only on sensitive plant communities. Because California annual grassland is not a sensitive plant community, it is not discussed further in this section. However, the annual grassland plant community is considered habitat for many sensitive species including the endangered San Joaquin kit fox and the threatened California tiger salamander. Impacts to grassland habitat are discussed in Sections 3.2.4 and 3.2.5 (Animal Species and Threatened and Endangered Species respectively).

Valley Sink Scrub/Bush Seepweed Scrub (New Resource)

The Bush seepweed scrub alliance occurs in patches that total about 0.350 acres, none of which are anticipated to be affected by the proposed Build Alternative for the Cholame Section.

Scale Broom Scrub (New Resource)

The scale broom scrub plant community is the dominant shrub in the sandy soils at the mouth of White Canyon (between Postmile 53.1 and 53.2), with annual grasses as the most abundant understory. There are 1.536 acres of this community on the north side of State Route 46 and 0.460 acres on the south side.

The road profile across the White Canyon drainage will need to be elevated to provide an even road profile and maintain adequate sight distance. Raising the profile would require a wider roadway at this location that would extend about 100 feet further in each direction. The proposed Build Alternative would therefore permanently and temporarily impact 0.775 and 0.086 acres of scale broom scrub within the White Canyon drainage, respectively. However, the restoration of 0.134 acres of scale broom habitat following the removal of the existing culvert and roadbed crossing along the banks of White Canyon would partially offset the permanent impacts such that the net loss of scale broom scrub habitat would be 0.641 acres.

Habitat Connectivity & Wildlife Crossings (New Resource)

The proposed project's greatest effect on wildlife species is not the direct loss of habitat, but rather the loss of connectivity between large, intact habitats to the north and south of State Route 46. Construction of the proposed project would intensify the highway's barrier effects for all species that utilize California annual grassland. This would include large-bodied animals such as pronghorn and Tule elk, as well as medium and small-bodied animals such as the federally and state listed San Joaquin kit fox and coast horned lizard, a California species of special concern. Impacts and proposed avoidance, minimization and mitigation measures to specific species are discussed further in Sections 3.2.4 and 3.2.5 of this document.

Given the substantial risks to wildlife movement from widening a two-lane rural highway to a four-lane expressway, Caltrans would incorporate appropriate design features to avoid and minimize impacts to connectivity between large, intact California annual grassland habitat.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented for the protection and preservation of the two sensitive plant communities found within the Cholame Section: bush seepweed scrub and scale broom scrub. As discussed at the beginning of the Biological Environment Section, all measures to protect biological resources have been renumbered in this document. Measures designed to protect natural communities have a prefix of NC.

Valley Sink Scrub/Bush Seepweed Scrub (New Resource to Cholame Section)

To avoid unintended impacts to this habitat, the following measures would be implemented:

Minimization Measure NC-1 – An Environmentally Sensitive Area (ESA) surrounding bush seepweed scrub habitat near PM 54.5 to 54.7 will be designated on the design plans and fencing will be established in the field to alert construction of the ESA and to avoid entering it for any reason.

Impact/reason for minimization measure – To avoid impacts to bush seepweed scrub habitat as well as crownscale populations and avoid and minimize impacts to sensitive wildlife species and their habitat within the Cholame Valley floor.

Responsibility – Project Design Engineer is responsible for designating ESAs on project plans. Prime Contractor is responsible for placement and continued maintenance of ESA fencing, with oversight by the Resident Engineer, Caltrans Environmental Construction Liaison and the project Biological Monitor.

Scale Broom Scrub (New Resource)

To protect scale broom scrub and the White Canyon drainage, the following new avoidance and minimization measure would be implemented:

Avoidance Measure NC-2 – To protect White Canyon drainage as well as scale broom scrub, temporary impacts would be limited to 15 feet off of the cut and fill. The area outside of this buffer will be designated and fenced as ESA on the project plans. Access to the White Canyon drainage (about PMs 53.1 to 53.3) will be limited to the minimum areas required for construction, defined as no more than 20 feet beyond the cut and fill areas for final grading. Scale broom scrub habitat outside of the minimum area will be designated as an Environmentally Sensitive Area.

Impact/reason for measure – To avoid impacts to scale broom scrub habitat and the sensitive wildlife species that occupy this habitat area.

Minimization Measure NC-3 – Scale broom (*Lepidospartum squamatum*) will be purchased commercially (if available) and applied as hydroseed for permanent erosion control at White Canyon. Seeds of the plant shall also be hand collected on-site for one to two years prior to the start of construction in case seeds are not commercially available at the time of construction. Collected seeds will either be incorporated into the hydroseed or will be hand broadcast.

Impact/reason for measure – To minimize impacts to scale broom scrub habitat and promote the establishment and spread of the habitat following project construction.

Minimization Measure NC-4 – Areas of scale broom habitat that are temporarily impacted by construction will be reseeded using a combination of locally collected and commercially sourced scale broom seed. Control of non-native vegetation such as Russian thistle will be implemented to reduce competition during scale broom habitat establishment.

Impact/reason for measure – To minimize impacts to scale broom scrub habitat and promote the establishment and spread of the habitat following project construction.

3.2.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 United States Code [USC] 1344), is the primary 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 over the discharge of dredged or fill material in Waters of the U.S. A project 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.

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. Environmental Protection Agency's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. Environmental Protection Agency 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 (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as Federal Highway Administration and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

At the state level, wetlands and waters are regulated primarily 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 California Department of Fish and Wildlife before beginning construction. If 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 which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for more details.

Affected Environment

A new Jurisdictional Waters Delineation was conducted in 2017 using the U.S. Army Corps of Engineers (USACE) Guide to Ordinary High Water Mark Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States (August 2014). A Jurisdictional Waters Assessment and corresponding mapping covering the Cholame North Modified Alternative (Option A) can be seen in Figure 3.2.2-1.

Wetlands, such as marshes, bogs or vernal pools, are areas that are inundated or saturated by water for prolonged periods. The presence of water leads to the formation of a certain type of soil which supports a community of water-loving organisms. Jurisdictional waters, including wetlands, are formally delineated – meaning that the location and size of a wetland area is mapped out – for the purposes of federal, state, and local regulation. Federal and state regulatory agencies have different criteria for what constitutes a wetland. For the Cholame Section, the regulatory agencies protecting wetlands include one federal agency (USACE) and two state agencies (California Department of Fish and Wildlife [CDFW], and the Regional Water Quality Control Board [RWQCB]).

The USACE defines federal wetlands as areas where 1) all three wetland parameters are present (presence of water-loving vegetation, wetland hydrology, and water saturated soils), and 2) occur below the ordinary high water mark of a drainage feature or are connected to other jurisdictional waters. Areas below the ordinary high water mark or that are connected to other jurisdictional water but are lacking at least one of the three wetland parameters are referred to as Other Waters of the U.S. State regulated waters have a broader definition that includes areas that extend from the channel bed to the top of a bank or outer edge of riparian zone (whichever is greater) and also include adjacent wetlands and non-federal isolated waters (if present). For state regulated waters, the term intermittent stream refers to areas below the ordinary high water mark (i.e., equivalent to federal Other Waters of the U.S.), while the term streambank refers to areas that are above the high water mark.

Federal and state freshwater wetlands, other waters/intermittent streams, and streambanks are found within the limits of the Cholame Section at Cholame Creek and the White Canyon drainage. Three specific locations have been identified as containing jurisdictional waters (Figure 3.2.2-1): two in Cholame Creek (Locations A and B) and one in the White Canyon drainage (Location C).

Cholame Creek (Locations A and B) – Cholame Creek has a well-defined bed and bank and contains portions that are perennial, supporting year-round wetlands. The wetlands are dominated by chairmaker's bulrush (*Schoenoplectus americanus*) – a wetland indicator species common in alkali (basic, high pH) environments. The dominance of this species is a characteristic of the American bulrush marsh habitat type, which is considered sensitive by the California Native Plant Society. Other species present within the perennial portions of Cholame Creek include cattails (*Typha latifolia*), red willow (*Salix laevigata*), saltgrass (*Distichlis spicata*), and tamarisk (*Tamarix sp*.).

Cholame Creek also contains seasonal, intermittent areas that are delineated as other waters/intermittent streams and streambanks. Cholame Creek has become increasingly incised, with very steep slopes. When water does flow through these portions of the creek it is often with high velocities, making it difficult for perennial vegetation to establish. As a result, few trees or other shrubs are able to withstand these high-energy flows and yet still survive the very dry climate the rest of the year. As a result, the creek is mostly absent of trees or shrubs, except for a few

cottonwood and willow trees growing sporadically from the edges of the banks and is generally dominated by bare earth or grasses and forbs in the spring.

Within Cholame Creek, *Location A* is situated in the western most extent of the creek, between the existing Cholame Creek bridge and the proposed Cholame Creek bridges. Below the ordinary high water mark, this stretch of the creek lacks water-loving vegetation, and is therefore delineated as Other Waters of the U.S./intermittent stream rather than as wetlands. Above the ordinary high water mark this area is delineated as non-riparian streambank (Figure 3.2.2-2).

Location B occurs within Cholame Creek between Postmile 51.7 and 54.0. This area supports wetlands and Other Waters of the U.S. within the perennial portions of the creek. The banks of the creek above the ordinary high water mark are considered non-riparian streambank (Figure 3.2.2-3). The vegetation in the wetland area is dominated by the American bulrush marsh habitat type. Other Waters at this location are classified as such because they are lacking at least one of the three wetland parameters.

White Canyon Drainage (Location C) - The White Canyon drainage is an intermittent wash that has a less well-defined bed and bank in comparison to Cholame Creek. The drainage system does not hold water long enough to support federal wetlands, but the area below the ordinary high water mark is considered Other Waters of the U.S (intermittent stream) and the area above the high water mark is considered non-riparian streambank (Figure 3.2.2-4).

Environmental Consequences

The proposed Build Alternative will avoid all permanent or temporary impacts to USACE wetlands that occur within the Cholame Section (Location B) but will have both permanent and temporary impacts to Other Waters of the U.S./intermittent streams and streambanks at Location A within Cholame Creek and Location C in the White Canyon drainage.

The permanent impacts to jurisdictional areas would occur within portions of the stream or streambank that would be filled with soils or where new structures would be constructed. Temporary impacts were calculated to include all areas within the cut and fill, in addition to a 15 and 20 foot buffer, for White Canyon and Cholame Creek Bridges, respectively. Additionally, proposed rock slope protection was treated as a permanent impact if it would be exposed at the ground surface and not buried by soil or creek bed material, and a temporary impact if it would be buried. At Location A, where the new Cholame Creek bridges would be located, rock slope protection has been designed to wrap around each abutment to protect the structure from erosion and scour within this highly erodible soil. The rock slope protection closest to the center of the creek would be buried. The rock slope protection along the edge of the creek, nearest to the bridge abutments would be exposed.

It is estimated that the proposed Build Alternative would result in 0.100 acre of permanent impact and 0.703 acres of temporary impacts to intermittent stream (Other

Waters of the U.S.) respectively. Permanent impacts to non-riparian streambanks are estimated to be 1.161 acres and temporary impacts to non-riparian streambank are estimated to be 1.157 acres. Table 3.2.2-1 summarizes permanent and temporary impacts to both Other Waters of the U.S. and non-riparian streambank.

Offsite mitigation is proposed to offset permanent and temporary construction impacts. There are no waters or wetland mitigation banks that service the project area. Caltrans attempted to develop permittee-responsible mitigation locally within Cholame Creek and the Estrella River, but the majority of the watershed is in private ownership and landowners were not interested in entering into a conservation easement. Additionally, the hot, dry climate within the project area makes it difficult to find locations that could support wetlands and waters. Instead, off-site mitigation would be accomplished at Centennial Creek within the City of Paso Robles. The Centennial Creek Mitigation plan proposes to establish, reestablish, and rehabilitate 1.71 acres of Other Waters for impacts to several previous phases of the Highway 46 Corridor Improvement Project, including anticipated impacts to the Cholame Section, to satisfy mitigation requirements from the U.S. Army Corps.

Intermittent streams (Other Waters of the U.S.) would also be restored as part of the proposed Build Alternative where portions of the existing State Route 46 alignment would be returned back to grasslands. The restoration process will include the removal of asphalt and roadbed followed by regrading of the roadway to blend in with the contours of the surrounding landscape. Restoration areas are summarized in Table 3.2.2-1 and are located where the existing highway infrastructure crosses Cholame Creek or White Canyon, including the removal of the Cholame Creek bridge and the two box culverts at White Canyon. Jurisdictional areas that would be restored under the Build Alternative include 0.092 acres of intermittent streams/Other Waters which falls under the Army Corp, Water board, and CDFW jurisdiction; and 0.226 acres of streambanks which falls under the water board and CDFW jurisdiction only.

While onsite restoration and offsite compensatory mitigation would offset permanent and temporary impacts to jurisdictional waters during project construction, it should also be noted that the project design is anticipated to improve water quality in Cholame Creek. Shifting the highway alignment to the north, away from the creek and removing and restoring the existing alignment would create a vegetated buffer to filter highway pollutants as water percolates through native soils before entering the creek. The distance would also reduce the potential for errant vehicles to accidently enter the creek and it would also reduce disturbance to wildlife in the creek from roadway noise and headlights. Finally, construction of the Build Alternative would resolve scour issues that are discussed further in the Hydrology, Floodplains, Water Quality and Storm Water Runoff Section (Section 3.1.4).

Table 3.2.2-1: Impacts to Jurisdictional Features Mapped in the Biological Study Area for Cholame North Modified Alternative (Option A)

Location	Permanent Impacts (acres) to Intermittent Stream/Other Waters (below ordinary high water mark)	Temporary Impacts (acres) to Intermittent Stream/Other Waters (below ordinary high water mark)	Permanent Impacts (acres) to non-riparian Streambank (above ordinary high water mark)	Temporary Impacts (acres) to non-riparian Streambank (above ordinary high water mark)	Restoration (acres) of Intermittent Stream/Other Waters (below ordinary high water mark)	Restoration (acres) of non-riparian Streambank (above ordinary high water mark)
A: Cholame Creek Bridges	0.018	0.686	0.607	1.088	0.058	0.112
B: Cholame Creek Wetlands	0	0	0	0	0	0
C: White Canyon	0.082	0.017	0.554	0.069	0.034	0.114
Total	0.100	0.703	1.161	1.157	0.092	0.226

This page intentionally left blank

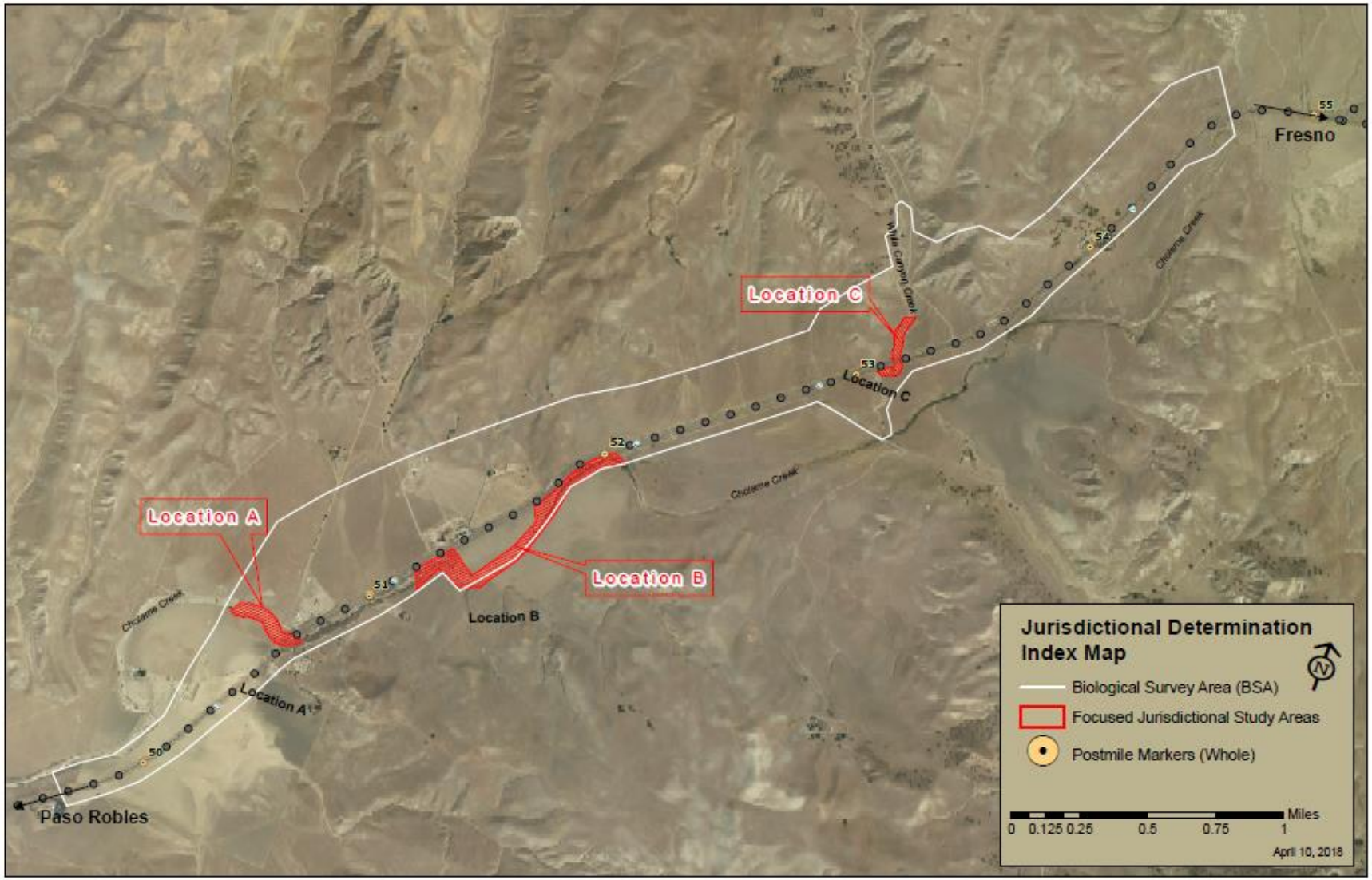


Figure 3.2.2-1: Focused Study Areas for Jurisdictional Water Assessment

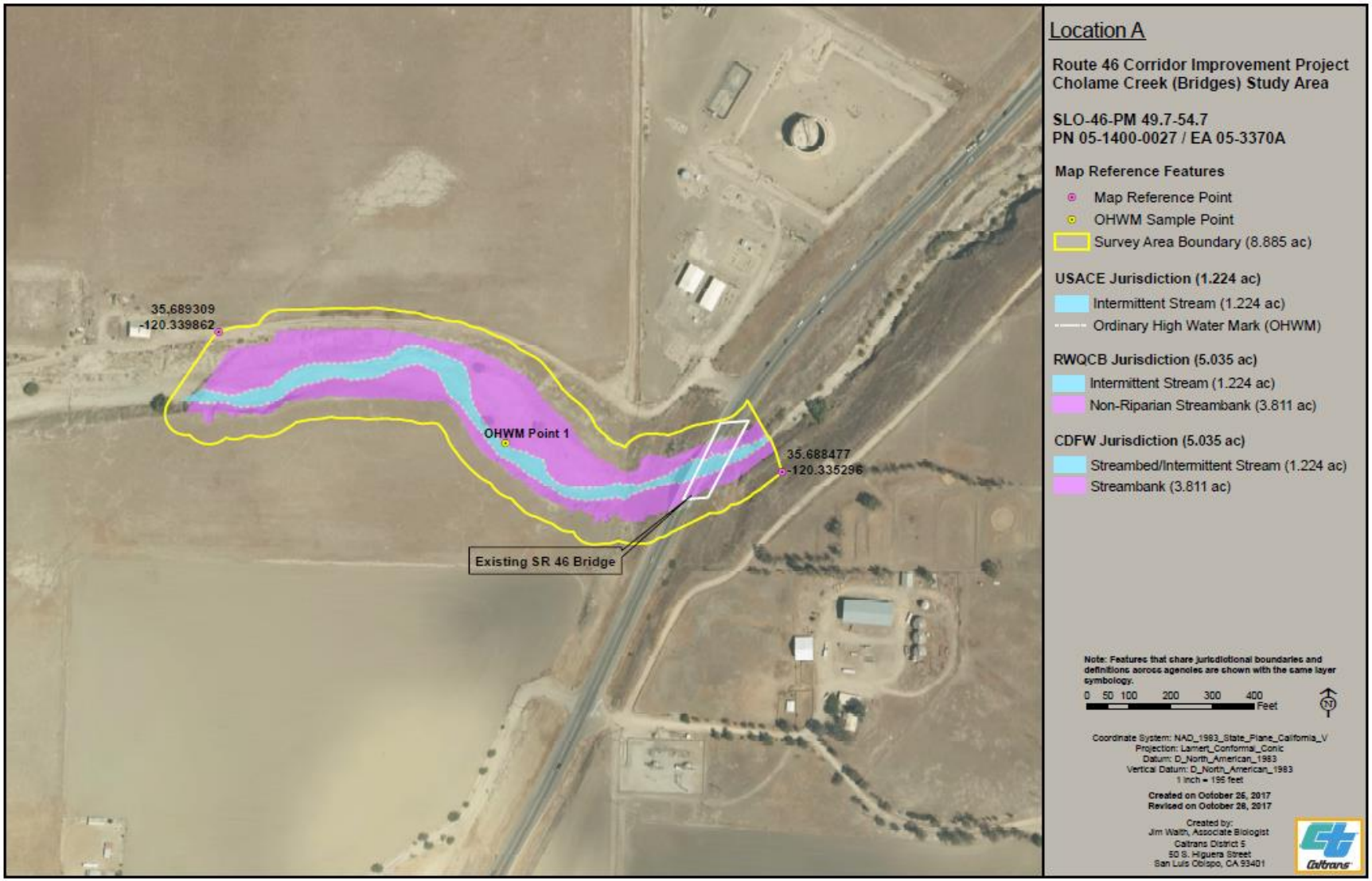


Figure 3.2.2-2: Focused Jurisdictional Water Assessment at Location A of Cholame Creek – Intermittent Stream

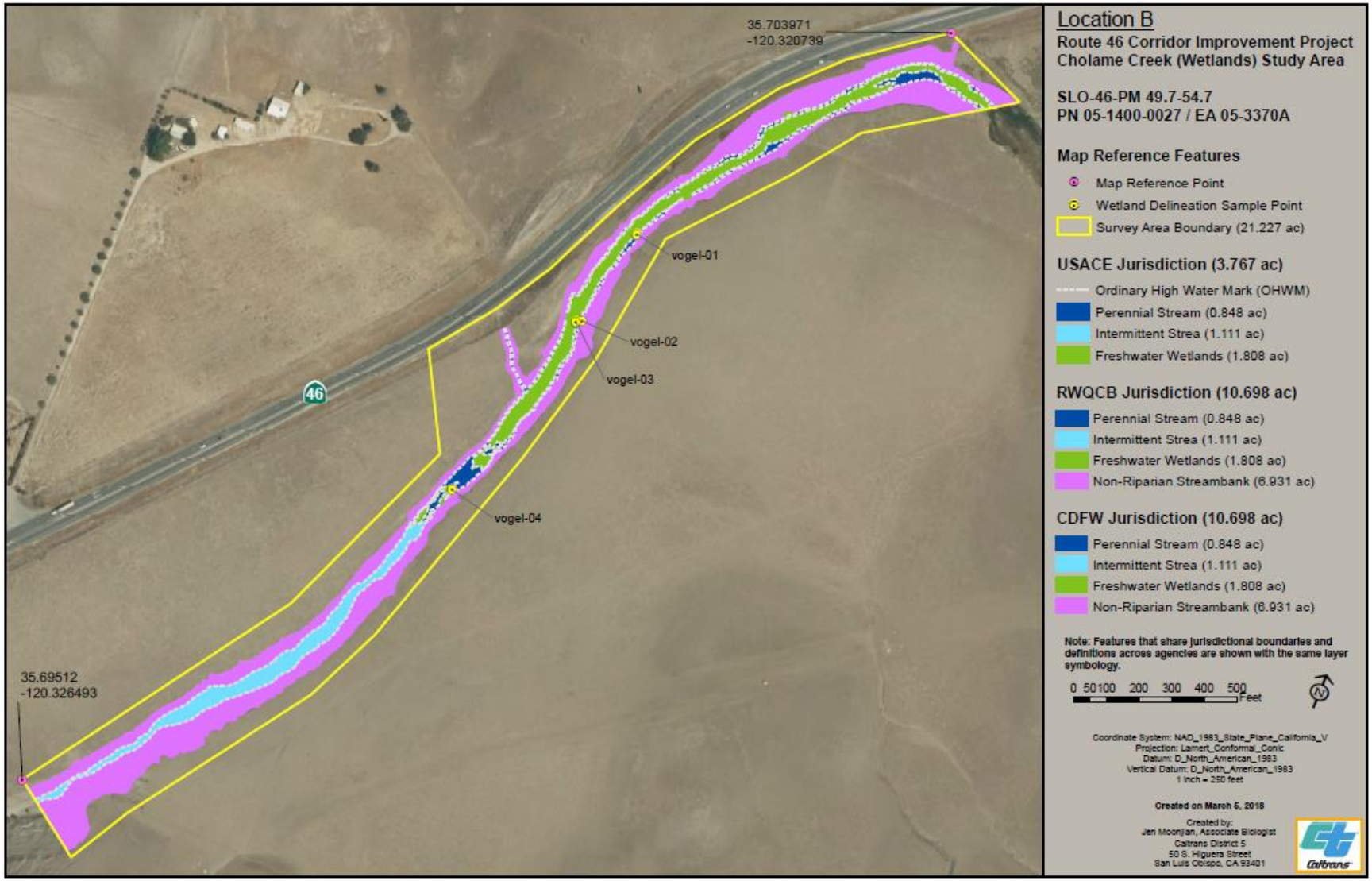


Figure 3.2.2-3: Focused Jurisdictional Water Assessment at Location B of Cholame Creek – Perennial Stream

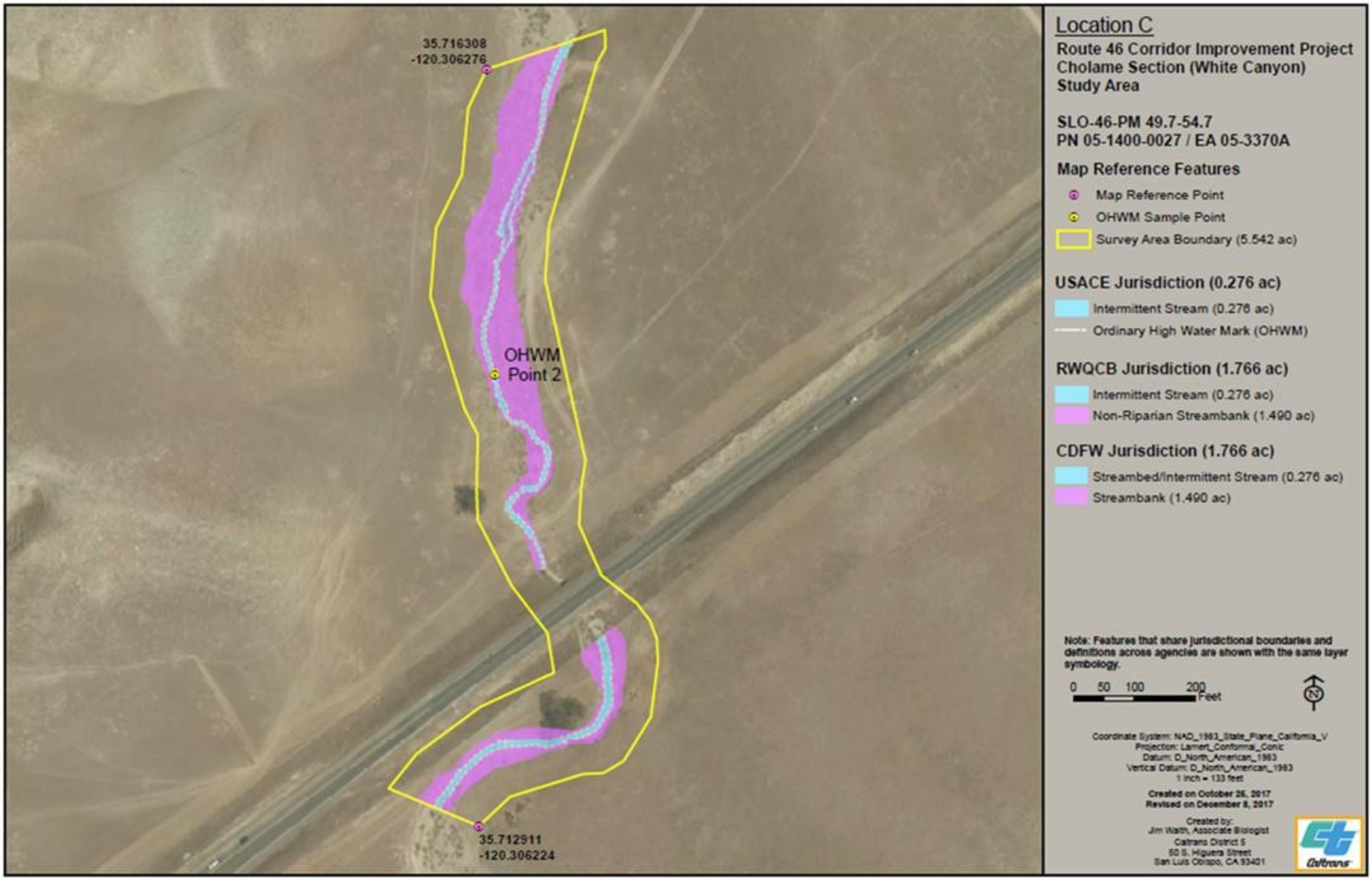


Figure 3.2.2-4: Focused Jurisdictional Water Assessment at Location C of the White Canyon Drainage – Intermittent Stream

Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented to avoid and minimize impacts to wetlands and Other Waters of the U.S. to the extent possible. This section includes measures that have been modified (shown in italics) from measures originally proposed in the 2006 EIR/FONSI, as well as measures newly introduced in this document. As described at the beginning of Section 3.2, all measures pertaining to the biological environment have been renumbered, and those designed for the protection of wetlands and other waters have the prefix WET. For those measures that have been modified from the 2006 environmental document, the original number of the measure is listed in parentheses after the new number.

See Section 3.1.4 for related measures and best management practices related to hydrology, floodplain, water quality, and storm water runoff.

Minimization Measure WET-1 (2006 Mitigation Measure 25) – Abandoned road sections resulting from ~~any of~~ the ~~Wye section alternatives,~~ Cholame Section *North Modified Alternative (Option A)* ~~Alternative 1, Shandon Section Alternative 2, and Estrella Section Alternative 8N~~ would be removed and restored to grassland. ~~Each acre of on-site mitigation would reduce the permanent impacts that must be mitigated by one acre~~*. The restoration process will include the removal of asphalt and roadbed followed by regrading of the roadway to blend in with the contours of the surrounding landscape. Restored areas would be revegetated using California native species, with local stock used when practicable.*

Impact/reason for mitigation measure – ~~To mitigate on-site for impacts to San Joaquin kit fox habitat.~~ *To offset impacts to jurisdictional areas, as well as other sensitive species (e.g., California Tiger Salamander, California Red-legged Frog, San Joaquin Kit Fox).*

Minimization Measure WET-2 – Prior to constructing the new box culverts at White Canyon and the new bridges at Cholame Creek, six inches of the native sandy substrate in both drainages would be stockpiled to be reapplied along the bottoms of the drainages following completion of work in each location. This would avoid the need to import and apply non-native material in the waterways.

Impact/reason for measure – to minimize impacts to jurisdictional areas within in Cholame Creek.

Avoidance Measure WET-3 – Environmentally Sensitive Areas within and adjacent to White Canyon and Cholame Creek will be designated on project plans and high visibility fencing will be installed during construction to prevent ground disturbance at a distance no greater than 15 feet and 20 feet, respectively, off the cut and fill lines.

Impact/reason for measure – to avoid and protect wetlands and other waters.

Mitigation Measure WET-4 (2006 Mitigation Measure 46) – All impacts to Waters of the U.S. would be fully mitigated~~, within the project area~~, in accordance with the

required United States Army Corps of Engineers Section 404 Individual Permit and Nationwide Permits.

Impact/reason for mitigation measure – To comply with the Federal Clean Water Act

Note on modifications to measure – Due to increases in the mitigation ratios and requirements of regulatory agencies since the release of the 2006 EIR/FONSI, mitigation can no longer be fully accomplished onsite. Offsite mitigation for the Corridor Project will occur at Centennial Creek within the City of Paso Robles.

Minimization Measure WET-5 – Permitting requirements will be included as contract specifications and implemented during construction in order to protect jurisdictional areas and reduce the potential for erosion and sedimentation during the rainy season.

Impact/reason for measure – to protect creeks and other jurisdictional areas and comply with regulatory permits.

3.2.3 Plant Species (Vegetation section of the 2006 EIR/FONSI)

Regulatory Setting

In the 2006 EIR/FONSI, plant species were discussed under the heading "Vegetation." Since release of the 2006 document, Caltrans has developed new standards for environmental document and a document template that divided the "Vegetation" section into two subsections: Natural Communities (Section 3.2.1) and Plant Species (this section).

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act and/or the California Endangered Species Act. Please see the Threatened and Endangered Species section [3.2.5] in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including California Department of Fish and Wildlife species of special concern, U.S. Fish and Wildlife Service candidate species, and California Native Plant Society rare and endangered plants.

The regulatory requirements for Federal Endangered Species Act can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et seq.

Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, found at California Public Resources Code, Sections 21000-21177.

Affected Environment

This section of the document presents a broader view of special status plant species than the more focused discussion found in the Threatened and Endangered Species section (Section 3.2.5).

The Supplemental Natural Environment Study (May 2019) was used to provide technical information and to analyze potential effects of the proposed Build Alternative on special status plant species known to occur or potentially occur within the limits of the Cholame Section.

Potential habitat occurs within the Cholame Section for numerous special status plant species, but only Protruding buckwheat (*Eriogonum nudum var. indictum*), and crownscale (*Atriplex coronata var. coronata*) were observed within the Cholame Section. Protruding buckwheat was observed during focused botanical surveys conducted in the spring of 2016, 2017, 2018, and 2019, but the crownscale was only observed during surveys supporting the 2006 EIR/FONSI. Protruding buckwheat was not identified during botanical surveys conducted in association with the 2006 EIR/FONSI, therefore it is identified in this section as being a New Resource within the Cholame Section.

The 2006 EIR/FONSI discussed Hall's tarplant (*Deinandra halliana*), straight-awned spineflower (*Chorizanthe rectispina*) and Gypsum-loving larkspur (*Delphinium gypsophilum ssp. parviflorum*) in the Cholame Section. However, these species were either not observed during appropriately timed floristic surveys in 2016 – 2019 (Hall's tarplant and straight-awned spineflower) or are no longer considered to be sensitive species (gypsum-loving larkspur), as discussed in more detail below.

Table 3.2.3-1 lists the special status plant species occurring or known to occur within the project area and therefore have the potential to be affected by the project.

Table 3.2.3-1:Plant Species Occurring or Known to Occur within the Cholame Section

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Oval-leaved snapdragon	*Antirrhinum ovatum*	California Rare Plant Rank (known as CRPR) 4.2	Chaparral, cismontane woodland, pinyon, and juniper woodland, valley and foothill grassland. Bloom period: May-November.	Habitat Present	Grasslands present. Not observed during appropriately timed floristic surveys. No further studies recommended.
Crownscale	*Atriplex coronata var. coronata*	CRPR 4.2	Chenopod scrub, valley and foothill grassland, vernal pools, alkaline areas. Bloom period: March-October.	Present	Plant found in 2003 Natural Environment Study. Avoidance and minimization measures implemented.
Lost Hills Crownscale	*Atriplex coronata var. vallicola*	CRPR 1B.2	Shadscale scrub, valley grassland, freshwater wetlands, wetland riparian	Habitat Present	Grassland and shadscale scrub present. Not observed during appropriately timed floristic surveys. No further studies recommended.
La Panza Mariposa-Lily	*Calochortus simulans*	CRPR 1B.3	Sandy, often granitic, serpentinite, chaparral, cismontane woodland, lower montane coniferous, valley and foothill grassland. Bloom period: April-June.	Habitat Present	Grasslands present. Not observed during appropriately timed floristic surveys. No further studies recommended.
Dwarf calycadenia	*Calycadenia villosa*	CRPR 1B.1	Chaparral, cismontane woodland, meadows, valley and foothill grassland. bloom period: May-October.	Habitat Present	Grasslands present. Not observed during appropriately timed floristic surveys. No further studies recommended
California Jewelflower	*Caulanthus californicus*	FE, SE, CNPS 1B.1	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. Bloom period: February-May	Habitat Present	Grasslands present. Not observed during appropriately timed surveys. No further studies recommended.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Lemmon's Jewelflower	*Caulanthus lemmonii*	CRPR 1B.2	Pinyon and juniper woodland, valley and foothill grassland. Bloom period: February-May.	Habitat Present	Grasslands present. Not observed during appropriately timed surveys. No further studies recommended.
Straight-awned spineflower	*Chorizanthe rectispina*	CRPR 1B.3	Chaparral, cismontane woodland, coastal scrub. Bloom period: April-July.	Present	Plant documented in 2003 Natural Environment Study but was mapped outside of impact area. Plant not observed during appropriately timed floristic surveys. No further studies required.
Hall's tarplant	*Deinandra halliana*	CRPR 1B.1	Cismontane woodland, chenopod scrub, valley and foothill grassland. Bloom period April-May	Habitat Present	Known occurrence in close proximity to the biological study area. Not observed during appropriately timed floristic surveys. No further studies required.
Gypum-loving larkspur	*Delphinium gypsophilum ssp. parviflorum*	CRPR 3.2	Chenopod scrub, cismontane woodland, valley and foothill grassland. Bloom period: February-May.	Habitat Present	Grasslands present. *D. gysophilum* (not *D. g. parviflorum*) was documented in previous Sections of Highway 46 Corridor (2003 Natural Environment Study) and within the Cholame Section. Sensitive subspecies not observed during appropriately timed floristic surveys. No

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
					further studies recommended.
Recurved larkspur	*Delphinium recurvatum*	CRPR 1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland, alkaline areas. Bloom period: March-June.	Habitat Present	Grasslands present. Not observed during appropriately timed floristic surveys. No further studies recommended.
Protruding buckwheat (New Resource)	*Eriogonum nudum var. indictum*	CRPR 4.2	Clay, serpentine soils, chaparral, chenopod scrub, and cismontane woodland.	Present	Plant discovered on north-facing steep slope. Avoidance and minimization measures implemented.
Temblor buckwheat	*Eriogonum temblorense*	CRPR 1B.2	Annual herb. Valley and foothill grassland, clay or sandstone. Bloom period: May	Habitat Present	Grasslands present. Not observed during appropriately timed floristic surveys. No further studies recommended.
Pale-yellow layia	*Layia heterotricha*	CRPR 1B.1	Pinion and juniper woodland, valley and foothill grassland, alkaline or clay soils. Bloom period: March-June.	Habitat Present	Grasslands present. Not observed during appropriately time floristic surveys. No further studies required.
Munz's tidy-tips	*Layia munzii*	CRPR 1B.2	Chenopod scrub, valley and foothill grassland, hillsides in white-gray alkaline clay soils. Bloom period: March-April	Habitat Present	Grasslands present. Not observed during appropriately timed floristic surveys. No further studies recommended.
Panoche pepper grass	*Lepidium jaredii ssp. album*	CRPR 1B.2	Valley and foothill grassland, alkali bottoms, washes, alluvial fans, clay and gypsum rich soils.	Habitat Present	Grasslands present. Not observed during appropriately timed floristic surveys. No further studies required.
Jared's pepper grass	*Lepidium jaredii ssp. jaredii*	CRPR 1B.2	Valley and foothill grassland.	Habitat Present	Grasslands present, but project location is out of species

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
					range. Not observed during appropriately timed floristic surveys. No further studies recommended.
Showy madia	*Madia radiata*	CRPR 1B.1	Valley and foothill grassland, cismontane woodland, chenopod scrub, mostly on adobe clay in grassland or among shrubs. Bloom period: March-May.	Habitat Present	Grasslands present. Not observed during appropriately timed floristic surveys. No further studies recommended.
Shinning Navarretia	*Navarretia nigelliformis ssp. raidans*	CRPR 1B.2	Cismontane woodland, valley and foothill grassland, and vernal pools. Bloom period: April-July.	Habitat Present	Grasslands present. Historical occurrence from 1926. Not observed during appropriately timed floristic surveys. No further studies recommended.
California Alkali grass	*Puccinellia simplex*	CRPR 1B.2	Alkaline, vernally mesic, sinks, flats, and lake margins. Chenopod scrub, meadows and seeps, valley and foothill grassland. Bloom period: March-May.	Habitat Present	Grasslands and small area of alkaline soils present. Not observed during appropriately timed floristic surveys. No further studies recommended.
Rayless ragwort	*Senecio aphanactis*	CRPR 2B.2	Cismontane woodland, coastal scrub, alkaline areas. Bloom period: January-April.	Habitat Present	A small area of alkaline soils on the very east end of project. Not observed during appropriately timed floristic surveys. No further studied recommended.
Mason's neststraw	*Stylocline masonii*	CRPR 1B.1	Chenopod scrub, pinyon and juniper woodland, and sandy washes. Bloom period: March-May.	Habitat Present	Sandy washes present. Not observed during appropriately timed surveys. No further

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
					studies recommended.
California Rare Plant Rank					
1A = plants presumed extirpated in California and either rare or extinct elsewhere					
1B = plants rare, threatened, or endangered in California and elsewhere					
2A = Plants presumed extirpated in California, but common elsewhere					
2B = Plants rare, threatened, or endangered in California, but more common elsewhere					
3 = Plants about which more information needed (review list)					
4 = Plants of limited distribution (watch list)					
Threat Rank					
.1 = Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)					
.2 = Fairly endangered in California (20-80% occurrences threatened)					
.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)					

Protruding Buckwheat (New Resource)

Protruding buckwheat (*Eriogonum nudum var. indictum*) is a perennial herb that is endemic (occurring nowhere else) to California. Protruding buckwheat was observed in two locations north of State Route 46 on north-facing, steep slopes in 2016 and 2017. These individuals occurred approximately 1300-feet north of Postmile 53.15 along one of the steep slopes adjacent to White Canyon and the other location was approximately 560-feet north of Postmile 53.7, just west of Jack Ranch. The location along White Canyon continued up the steep slope where binoculars were used to estimate approximately 15 plants. The location west of Jack Ranch was spread out over a larger area, but plants totaled approximately 20 within the Biological Study Area.

Crownscale

Suitable habitat conditions for crownscale (*Atriplex coronata* var. *coronata*) occur in the eastern portion of the Cholame Section, and include the alkaline soils present between the existing alignment and Cholame Creek. During preparation of the original 2003 Natural Environment Study, several patches of crownscale, both large and small, were located and mapped in this region. Of these locations, there were five small patches (between 0.003 and 0.026 acres) documented and mapped within the eastern part of the Cholame Section and the larger patches lie approximately 0.8 miles farther east, within the Wye Section. Therefore, occurrence of this species within the Cholame Section (and the Wye Section) is documented in the 2006 EIR/FONSI.

During 2017 spring botanical surveys, the previously identified small patches of crownscale in the Cholame Section could not be located. It is unclear whether the lack of crownscale observations represents a true absence of these plants, or whether the local population of this species was responding to a below average

rainfall year with 72% of the precipitation occurring in March. Annual species, such as crownscale, likely responds differently each year to precipitation totals, the extent of flooding, and temperature.

Additionally, botanical surveys in 2015 for the California Flats Solar Project found large patches of Lost Hills crownscale (*Atriplex coronata* var. *vallicola*), a CNPS ranked 1B.2. This population was located approximately one mile east of the Cholame Section. During further botanical analysis of the Wye section in Spring of 2019, both of these species variations occur within the Cholame Valley adjacent to the Wye.

Hall's Tarplant

Hall's tarplant (*Deinandra halliana*) is not historically known within the Cholame Section or the greater Cholame Valley. Hall's tarplant was observed and collected in 1992 outside of the Cholame Section, but within Cholame Valley just east of Davis Road and south of State Route 46. During surveys in 2015 on one of the mitigation sites for the California Flats Solar Project, a small population of approximately 25 plants (0.01 acres) was identified to the northeast of the Cholame Section. However, Hall's tarplant was not observed during botanical surveys within the Cholame Section.

Straight-awned Spineflower

The straight-awned spineflower (*Chorizanthe rectispina*) was not previously known in this area but was located in 1999 as part of the botanical surveys for the original State Route 46 Natural Environment Study (2003) and is therefore discussed in the 2006 EIR/FONSI. In 1999, several patches of the plant were located just south of State Route 46 and east of Bitterwater Road. Otherwise, the nearest known location of this species is over 20 miles away according to California Natural Diversity Database.

Despite multiple efforts during both above and below average rain years to relocate this plant within the previously delineated areas of spineflower and throughout the BSA as a whole, the plant was not detected during botanical surveys.

Gypsum-loving Larkspur

Since publication of the 2006 EIR/FONSI, taxonomic classifications of larkspur plants in the *Delphinium* genus have changed. Previously, there were three types of gypsum-loving larkspur that could have been present within the Biological Study Area (BSA): the parent species of gypsum-loving larkspur (*Delphinium gypsophilum*), and two subspecies, gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *gypsophilum*) and small-flowered gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *parviflorum*). Both of the subspecies were considered to be sensitive species, while the parent taxon is found more broadly throughout California and is not sensitive.

In 2010 it was determined that the gypsum-loving larkspur subspecies (*Delphinium gypsophilum* ssp. *gypsophilum*) could not be distinguished from the parent species, and therefore that it was no longer a valid taxon. This means that all plants previously identified as the sensitive subspecies are now considered to represent the non-sensitive parent species. However, the small-flowered subspecies (*Delphinium gypsophilum* ssp. *paryiflorum*) is still a recognized taxon and considered to be sensitive.

Given the complexities of gypsum-loving larkspur, additional botanical surveys were conducted to clarify whether larkspur plants within the Biological Study Area represented the non-sensitive parent species of gypsum-loving larkspur (*Delphinium gypsophilum*), or the sensitive subspecies of small-flowered gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *paryiflorum*). A Caltrans botanist surveyed the BSA in May 2019, after an above average rainfall year and determined that larkspur plants represented the parent species, not the sensitive small-flowered subspecies. Without the presence of *D.g*. ssp. *Parviflorum* within the BSA, *Delphinium* plants will not be discussed further in this document.

Environmental Consequences

Protruding Buckwheat (New Resource)

The Cholame North Modified Alternative (Option A) would permanently affect 0.018 acres, consisting of approximately 20 plants located near Jack Ranch.

The project could not be designed to avoid the stand of protruding buckwheat at Jack Ranch due to the steepness of the slope, which required more extensive grading.

Crownscale

The Cholame North Modified Alternative (Option A) was designed in part to avoid the historically known locations of the previously identified crownscale that were discussed in the 2006 EIR/FONSI. The Lost Hills crownscale is not found within the limits of the Cholame Section, therefore the proposed Build Alternative is not expected to affect either of these plant species.

Hall's Tarplant

The Cholame North Modified Alternative (Option A) would not affect Hall's tarplant.

Straight-awned Spineflower

The Cholame North Modified Alternative (Option A) would not affect the Straight-awned spineflower as was mapped in 1999.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are proposed for protruding buckwheat and crownscale. Measures to protect these species were not included in the original 2006 EIR/FONSI. As discussed at the beginning of the Biological Environment Section, all measures to protect biological resources have been renumbered in this document. Measures designed to protect plant species have a prefix of PLA.

Measures were not included for Hall's tarplant and straight-awned spineflower because these species are not anticipated to be affected by construction of the Cholame Section.

Protruding Buckwheat (New Resource)

The following avoidance and minimization measures will be implemented for protruding buckwheat:

Avoidance Measure PLA-1 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance of the north facing slopes in the project area which may provide suitable potential habitat for the protruding buckwheat.

Impact/reason for minimization measure – To minimize impacts to habitat suitable for protruding buckwheat in the Cholame Section.

Minimization Measure PLA-2 – Caltrans will collect seed from the protruding buckwheat plants within the project footprint for two years prior to construction. These seeds would be used in the hydroseed or hand broadcast on the new north-facing fill slopes for permanent erosion control.

Impact/reason for minimization measure – To minimize impacts to protruding buckwheat in the Cholame Section.

Additionally, an established population, of protruding buckwheat exists within the Palo Prieto Conservation Bank where credits will be purchased to mitigate for impacts to the San Joaquin kit fox. Preservation and enhancing habitat for the San Joaquin kit fox on lands held under the conservation bank may also preserve habitat for protruding buckwheat.

Crownscale

The following avoidance measure will be implemented to ensure there are no unintended impacts to crownscale.

Avoidance Measure PLA-3 – Historically known locations of crownscale will be delineated on project plans and Environmentally Sensitive Area fencing will be installed during construction to restrict access to these sites.

Impact/reason for minimization measure – To minimize unintended impacts to crownscale in the Cholame Section of the project area.

Additionally, restoration of the existing roadbed under minimization measure WET-1 would benefit the crownscale population because the roadway is located between populations of unaffected crownscale and it is anticipated that crownscale would colonize the road removal areas naturally.

3.2.4 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, 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 [3.2.5] below. 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 National Oceanic and Atmospheric Administration's National Marine 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

The Supplemental Natural Environment Study (May 2019) was used to provide technical information and to analyze potential effects of the proposed Build Alternative on special status animal species known to occur or potentially occur within the limits of the Cholame Section.

Table 3.2.4-1 shows the special status species occurring or known to occur within the project area and therefore have the potential to be affected by the project.

Table 3.2.4-1: Animal Species Occurring or Known to Occur within the Cholame Section

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Western spadefoot toad	*Spea hammondii*	Species of Special Concern (known as SSC)	Permanent and temporary waters, vernal pools, and nearby uplands	Present	Species documented breeding in pond within 1 mile of the Cholame Section. Avoidance and minimization measures implemented.
Southwestern pond turtle	*Emys pallida*	SSC	Riparian areas in montane/cismontane, woodlands, and valley foothills where there is a permanent or semi-permanent water source	Present	Species known to occur and observed within the perennial sections of Cholame Creek. Avoidance and minimization measures implemented.
Northern California Legless Lizard (New Resource)	*Anniella pulchra*	SSC	Coastal dunes, sand washes, foothill grasslands	Habitat Present	Sand washes and grasslands present. Species not observed during surveys, but presence is assumed at White Canyon. Avoidance and minimization measures implemented.
California Glossy Snake (New Resource)	*Arizona elegans occidentalis*	SSC	Foothill and valley grasslands	Habitat Present	Grasslands present. Species not observed during surveys. Avoidance and minimization measures implemented for San Joaquin coachwhip will also provide protection for the glossy snake.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
San Joaquin Coachwhip	*Masticophis flagellum ruddocki*	SSC	Low reliefe, arid, grasslands and shrublands	Present	Species known to occur and observed within the Cholame Section. Avoidance and minimization measures implemented.
Blainville's (Coast) Horned Lizard	*Phrynosoma blainvillii*	SSC	Coastal sand dunes, chaparral, montane chaparral, foothill and valley grassland	Present	Species known to occur and observed within the Cholame Section. Avoidance and minimization measures implemented.
Grasshopper sparrow	*Ammodramus savannarum*	SSC	Dense, high (2-4ft) grasslands, often with sparse shrub cover (<35%)	Habitat Present	Dense grasslands present in some parts of the Cholame Section. Not seen or heard during surveys. Avoidance and minimization measures implemented for California horned lark will also provide protection for the grasshopper sparrow.
Burrowing owl	*Athene cunicularia*	SSC	Grasslands, deserts	Habitat Present	Grasslands and small mammal burrows present. Species not observed during surveys. Avoidance and minimization measures implemented.
California horned lark	*Eremophila alpestris actia*	Migratory non-game bird	Short, dry grasslands	Present	Species known to occur within the Cholame Section. Avoidance and minimization measures implemented.
Golden Eagle (New Resource)	*Aquila chrysaetos*	California Fully Protected Species	Grasslands, shrublands, forest edges	Habitat Present (foraging)	Species known to occur and observed within the Cholame Section. Avoidance and minimization measures implemented.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Pallid bat	*Antrozous pallidus*	SSC, CDFW protected non-game species	Roosts in crevices or cavities	Present	Day roost and maternity roost in Cholame Creek Bridge. Avoidance and minimization measures implemented.
Big brown bat	*Eptesicus fuscus*	CDFW protected non-game species	roosts in crevices or cavities	Present	Day and maternity roost on the Cholame Creek Bridge within the Cholame Section. Avoidance and minimization measures implemented.
Yuma myotis	*Myotis yumanensis*	CDFW protected non-game species	Roosts in crevices or cavities	Present	Day and maternity roost on the Cholame Creek Bridge within the Cholame Section. Avoidance and minimization measures implemented.
Mexican free-tailed bat	*Tadarida brasiliensis*	CDFW protected non-game species	Roosts in crevices or cavities	Present	Day and maternity roost on the Cholame Creek Bridge within the Cholame Section. Avoidance and minimization measures implemented.
American badger (New Resource)	*Taxidea taxus*	SSC	Open grasslands and shrublands	Present	Species observed as roadkill. Avoidance and minimization measures implemented for San Joaquin kit fox will also provide protection for the badger.
Tulare grasshopper mouse	*Onychomys torridus tularensis*	SSC	Low relief, arid grasslands and shrublands.	Habitat Present	Low relief, arid grasslands and shrublands present. Tulare grasshopper mouse was not documented during small mammal trapping however, the trappers did not

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
					use the appropriate bait for trapping such a species. There are no historic or recent occurrences of this species in the project area. The species is known to occur in the western margin of the Tulare Basin, the Carrizo Plain natural Area, Cuyama Valley and the Ciervo-Panoche Region. No further studies recommended.
Pronghorn antelope	*Antilocapra americana*	Protected game species	North American prairies and deserts	Present	Species known to occur and observed within the Cholame Section. No avoidance and minimization measures implemented.
Tule elk (New Resource)	*Cervus canadensis nannodes*	Protected game species	Endemic to California in varied habitats, including grasslands, oak and foothill woodlands, chaparral and riparian habitats	Present	Known to occur and observed within the Cholame Section. No avoidance and minimization measures implemented.

While potential habitat occurs within the Cholame Section for several special status animal species, only the following species were observed: Western spadefoot toad (*Spea hammondii*), southwestern pond turtle (*Emys pallida*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), Blainville's (Coast) horned lizard (*Phrynosoma blainvillii*), California horned lark (*Eremophila alpestris actia*), pallid bat (*Antrozous pallidus*), Big brown bat (*Eptesicus fuscus*), Yuma myotis (*Myotis yumanensis*), Mexican free-tailed bat (*Tadarida brasiliensis*), American badger (*Taxidea taxus*), pronghorn antelope (*Antilocapra americana*), and tule elk (*Cervus canadensis nannodes*).

Western Spadefoot Toad

The Western spadefoot toad (*Spea hammondii*) is a California species of special concern. It is not a federally listed species, however it is addressed in the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005). Spadefoots have catlike eyes with vertical pupils and a single black spade on each hind foot. Much like California tiger salamanders (Section 3.2.5), spadefoot toads only use ponds for breeding in the winter and spring and spend the majority of their life in terrestrial habitats and underground. Upon leaving aquatic breeding habitat in the late spring and early summer, adults and juveniles that have recently metamorphosed from tadpoles seek refuge in small mammal burrows or in shallow (4 – 8 inches deep) burrows they dig themselves using their back legs. Little is known about the terrestrial activities of the western spadefoot toad, but movement is thought to be nocturnal. Most recent research indicates that the maximum dispersal distance is approximately 860 feet. However, the U.S. Fish and Wildlife Service recommends a minimum of 1-mile dispersal distance from suitable wetlands for the conservation of amphibians.

Dipnet and visual surveys were conducted for western spadefoot toad in February and April 2002 during environmental studies for the 2006 EIR/FONSI. Survey areas extended along Cholame Creek up and downstream of the Cholame Creek Bridge (No. 49-29), which includes an area larger than the current biological study area analyzed in this document. No spadefoot toads were observed in the creek during dipnet surveys, nor were heard calling in the vicinity of the Cholame Section. One spadefoot call was heard in the western limits of the *Corridor Project*, from a vernal pool in the western Estrella Section.

Additional surveys specifically for western spadefoot toad were not conducted during environmental surveys for the Cholame North Modified Alternative (Option A), but a review of the California Natural Diversity Database for known occurrences in the greater Cholame Valley was completed. Between 2015 and 2017 several spadefoot toads were observed in ponds near the Cholame Section, including one about 1 mile south of the eastern terminus of the Cholame Section, two about 1.5 miles northeast of the Cholame Section, and several occurrences about 4 miles to the south. One of the observations was in conjunction with California tiger salamander, so it is was assumed that all ponds in the vicinity of the Cholame Section that have the potential to support breeding California tiger salamanders are also suitable for spadefoot toad breeding.

Taken together, it can be said that there is suitable upland and aquatic habitat for spadefoot toad and the potential for spadefoots to occur within the Cholame Section. The upland habitat consists of open, undeveloped grasslands used for grazing and supports established small mammal populations and their associated burrows. Aquatic habitat includes temporary ponds and Cholame Creek. The lack of spadefoot toads and amphibians observed or heard specifically within Cholame Creek during surveys is likely due to predation of toads and tadpoles by non-native freshwater fish (e.g., catfish), rather than an absence of suitable spadefoot habitat. Cholame Creek

is likely slow moving enough during some years to support breeding spadefoot toads, and the upper portions of the creek have enough ponded water to allow breeding, egg-laying, and metamorphosis.

Southwestern Pond Turtle

Southwestern pond turtle (*Emys pallida*) is a California species of special concern. Southwestern pond turtles are aquatic turtles, utilizing ponds, lakes, streams, and permanent waters. These aquatic features are usually surrounded by grasslands, woodlands, chaparral, coastal scrub, and open forests below 6,000 feet, where they seek refuge during flooding events, seek resting sites during the summer, and lay eggs. Southwestern pond turtles have been documented moving through uplands as much as 1.86 miles a day, but typically do not move more than that on an annual basis. Based on a study analyzing 166 reptiles and amphibians in California, the southwestern pond turtle was considered at very high risk for negative road impacts.

Depending on precipitation, southwestern pond turtles have the potential to be present in the aquatic habitat throughout the perennial stretch of Cholame Creek between Postmile 51.4 and 54.0 (within the project limits). Several southwestern pond turtles were observed on multiple occasions basking along the bank edges next to a deep pool within Cholame Creek just south of Postmile 51.6. Additional observations of basking southwestern pond turtles from Bitterwater Road bridge (Postmile 52.8) have also been made over the last decade. The adjacent grassland habitat is also suitable for upland nesting and winter refugia habitat.

The California Natural Diversity Database includes several nearest known occurrences of southwestern pond turtle at the intersection of Bitterwater Road and Cholame Creek. These occurrences date back to 1984 and continue through 2003.

Northern California Legless Lizard (New Resource)

Northern California legless lizard (*Anniella pulchra*) is a California species of special concern. The Cholame Section of the Corridor Project occurs within this species' range. As their name suggests, legless lizards are elongate lizards with no legs that superficially resemble snakes. These lizards are adapted for life underground and occur in a variety of habitats but require sandy or loose soils for burrowing and close proximity to native shrub cover. A short-term study assessing movement of legless lizards found that these lizards have minimal long-range movement, with individual legless lizards moving less than 30 feet over a 2-month period. This study suggests that large scale developments can cause this species to become locally extinct.

No surveys specific for Northern California legless lizard were conducted. Although no legless lizards were observed during blunt-nosed leopard lizard surveys, the sandy habitat within White Canyon is suitable for this species and therefore this species has the potential to occur within the Cholame Section.

The nearest known occurrence of Northern California legless lizard was documented in 2001, approximately 1.7 miles south of the Cholame Section near Bitterwater Road. There are two known occurrences near Shandon, from the 1950s and 1960s.

California Glossy Snake (New Resource)

The California glossy snake (*Arizona elegans occidentalis*) is a California species of special concern, that ranks as one of the top conservation priorities for snakes within California that are not listed as threatened or endangered. Glossy snakes appear similar to common gophersnakes (*Pituophis catenifer*) but have unkeeled scales that are smooth and glossy, as well as other distinguishing features. This species is adapted for several habitat types including open desert, grasslands, shrublands, chaparral, and woodlands, and areas with sandy soils to allow for burrowing. Locating glossy snakes can be difficult because the snake tends to occur in low densities and little is known of its abundance in central coastal California.

Surveys specifically for California glossy snake were not conducted, and no glossy snakes were observed during any surveys within the Cholame Section. However, the habitat within this project section is suitable for California glossy snake, therefore the species has the potential to occur within the Cholame Section.

There is one documented occurrence of California glossy snake adjacent to the Cholame Section from 1950, a little over 1 mile to the south along Bitterwater Road near Palo Prieto Canyon. All other recorded occurrences of the species are located more than 5 miles away from the Cholame Section.

San Joaquin Coachwhip

The San Joaquin coachwhip (*Masticophis flagellum ruddocki*) is a California species of special concern. Coachwhip snakes are long, slender, fast-moving snakes that have large home ranges – some exceeding 300 acres. As a result of their tendency to move large distances, the coachwhip can be more vulnerable to changes in habitat where food resources become more dispersed and patchy.

The San Joaquin coachwhip was observed on two occasions in the spring of 2017. One coachwhip was observed at the outlet of White Canyon culvert (Postmile 53.15), entwined in a shrub, and the other was observed just west of the perimeter fence at Jack Ranch Café, near the highway (Postmile 53.95). All untilled land within the Cholame Section has the potential to be suitable habitat for the San Joaquin coachwhip, but the most suitable habitat appears to be east of Bitterwater Road where the land is mainly used for cattle grazing.

The most recent documented occurrence near the proposed project in the California Natural Diversity Database was in 1999 approximately 1.2 miles west of the Cholame Section, near the intersection of State Route 46 and McMillan Canyon Road.

Blainville's (Coast) Horned Lizard

Coast horned lizard (*Phrynosoma blainvillii*) is a California species of special concern. These lizards have a flat, oval-shaped body with a ring of horns on their head, and are adapted for feeding on ants, which can make up to 90% of their diet. They are found in a variety of habitat types including sage scrub, dunes, alluvial scrub, annual grassland, chaparral, oak woodland, riparian woodland, Joshua tree woodland, coniferous forest, and saltbrush scrub. They require elements such as loose, fine soils for burrowing, open areas for thermoregulation, and shrub cover for refuge. Coast horned lizards have high site fidelity, meaning that they prefer to return to places they have previously occupied, and they exhibit an average daily movement of 154 feet.

Although specific surveys for coast horned lizards were not conducted, protocol level surveys for blunt-nosed leopard lizard (Section 3.2.5), which occupy a similar habitat, were conducted in White Canyon during spring/summer of 2017. White Canyon was identified as the best habitat for both blunt-nosed leopard lizard and coast horned lizard due to the combination of loose, fine sand and shrub cover. At least one coast horned lizard was observed during 11 of the 12 survey days, and on two of the survey days six individual lizards were observed in the lower reaches of White Canyon (south of State Route 46). No coast horned lizards were observed north of State Route 46, even though the habitat appears suitable.

Additionally, the large culverts proposed for White Canyon have the potential to benefit horned lizards. Replacing the culverts at White Canyon particularly may be beneficial for horned lizard because the existing culvert has a 2-foot gap between the culvert outlet and the ground surface. No horned lizards were observed north of the highway during surveys, which may be due to the fact that the lizards are unable to access the culvert due to the elevation gap. In order to reach the upper White Canyon, horned lizards would need to cross the heavily trafficked roadway. The new culverts will be embedded to support a natural bottom and would not have an elevation drop, which would provide horned lizards more ease at accessing the undercrossing.

There are four documented occurrences of coast horned lizard from the greater Cholame Valley region in the California Natural Diversity Database. One occurrence was within White Canyon in the Biological Study Area (BSA). The other three occurrences were 3 to 4 miles away, to the north of the Biological Study Area (BSA) in Cholame Valley, or to the east of the BSA along Highway 41.

Grasshopper Sparrow

The grasshopper sparrow (*Ammodranmus savannarum*) is a California species of special concern. This species only occurs in grasslands and is often absent from areas with trees or extensive shrub cover. Grasshopper sparrow populations have been declining since 1980, particularly in southern California where urbanization has

significantly reduced suitable grasshopper sparrow habitat. Still, little is known about the California populations.

Grasshopper sparrows were observed or heard numerous times throughout the year during surveys conducted within and adjacent to the Cholame Section.

The California Natural Diversity Database does not have any records of grasshopper sparrow but based on observations from eBird the birds are common year-round in the BSA.

Burrowing Owl

Burrowing owl is a California species of special concern. The species is one of California's only owls that is active during the daytime (diurnal). These small owls primarily utilize grasslands but can inhabit some highly altered environments such as agricultural areas where they nest along roadsides or agricultural water canals, surrounded by croplands. While the breeding range of the owls extends from Baja California in the south up to Canada's southern prairies in the north, the population along the central and southern coast of California is in decline. Currently, burrowing owls in coastal regions from San Luis Obispo to San Diego counties are extremely rare and at risk of going locally extinct.

Although protocol level surveys for burrowing owls were not conducted and burrowing owls were not observed within the Cholame Section, the habitat within the Cholame Section is suitable for burrowing owl. Therefore, the species has the potential to occur within or adjacent to the proposed project.

The most recent sightings of burrowing owl were reported in the California Valley as part of the Cal Flats Solar Project. Avian surveys were conducted in 2013 for the solar farm, and several burrowing owls were detected. The nearest of these sightings was 1.7 miles to the northeast of the Cholame Section. In 2001, burrowing owls were observed using burrows within the Wye Section of the *Corridor Improvement Project*, approximately 1.2 miles east of the Cholame Section.

California Horned Lark

California horned lark (*Eremophila alpestris actia*) is a California species of special concern. These birds inhabit dry, open grasslands with sparse vegetation but also frequently use areas cleared by humans such as plowed fields and mowed areas. The California horned lark has a limited range that runs along the coast of California between Humboldt and San Diego Counties, extending inland to the San Joaquin Valley and Kings County.

California horned larks were observed or heard numerous times throughout the year during general wildlife surveys, within and adjacent to the Cholame Section. The species was commonly observed in groups of 50 or more individuals.

The California Natural Diversity Database does not have any records of California horned larks but based on observations from eBird the birds are common year-round in the BSA. The entire Cholame Section provides potential nesting and foraging habitat for the California horned lark.

Golden Eagle (New Resource)

The golden eagle (*Aquila chrysaetos*) is a California Fully Protected Species, providing it an additional level of protection. Golden eagles are also protected by the Federal Bald and Golden Eagle Protection Act enacted in 1940 and amended several times since.

Golden eagles are one of the most widespread raptors in the world, occurring throughout North America, but also in western and eastern Europe, northern Africa, and Asia. This species typically inhabits large, open or semi-open grasslands, shrublands, and the edge of forests, but usually avoids contiguous forests and developed areas. Golden eagles build their nests on cliffs, trees, on the ground, as well as on man-made structures such as electrical transmission towers.

The majority of the Cholame Section was included in an extensive raptor survey conducted for the California Flats Solar Project. Four golden eagle nests and one bald eagle nest was detected within a 5-mile radius of the Cholame Section. Four of the five nests detected were located along the west side of Cholame Valley. The closest active golden eagle nest was approximately 1.2 miles north of the eastern most extent of the Cholame Section, up in the hills off the valley floor.

This species was observed regularly soaring, hunting, or perching on the ground within and adjacent to the Cholame Section during general wildlife surveys. However, no nests were observed.

Pallid Bat, Big Brown Bat, Yuma Myotis, and Mexican Free-tailed Bat

All roosting bat species with the potential to occur within the BSA are addressed here as a group because they have similar habitat requirements, project-related impacts, and avoidance and minimization measures.

There are 25 species of bats that occur within California and all are protected as a non-game species by California Fish and Game Code. The pallid bat (*Antrozous pallidus*) and the Townsend's big-eared bat (*Corynorhinus townsendii*) are both California species of special concern. At least eight other bat species have been documented within the project area, including big brown bat, Mexican free-tailed bat, pallid bat, Townsend's big-eared bat, red bat, Yuma myotis, long-eared myotis, and canyon bat. These bat species are mostly nocturnal and roost, or rest upside down hanging by their feet, in secluded places that protect them from predators and provide a suitable temperature environment.

Roosting is a critical part of a bat's survival, and bats roost for many different reasons ranging from sleeping and resting, eating, to raising young. Some species of bats roost in large colonies of thousands of bats, whereas other species tend to roost in small colonies of only a handful of bats, making the sustainability of each roost important for the long-term survival of bat populations. Every bat roost represents a unique microhabitat that is likely chosen based on thermal characteristics, disturbance level, and proximity to water and foraging habitat. In California, bridges are a common roosting location for bats because of the small crevices created by bridge expansion joints and weep holes, as well as the cave-like environment that some bridge architecture offers that is attractive for bats. Due to the daily temperature fluctuations in many areas of California, bridges are particularly attractive roosts because they stay warm into the early morning hours. A stable temperature is important especially for maternity roosts where female bats raise their young.

Both day and night bat surveys were conducted at the Cholame Creek Bridge. Day surveys consisted of using binoculars to identify species and the relative number of bats. Several opportunistic visits to the Cholame Creek Bridge provided seasonal presence-absence data. Visual detections determined big brown bats, pallid bats, Myotis species, and Mexican free-tailed bats are using the bridge from approximately March through November. On the evenings of September 5 and September 28, 2017, exit counts were conducted and it was estimated that approximately 800 bats were utilizing the bridge as a day roost. In both surveys, approximately 20 pallid bats remained behind as this species tends to exit roosts later in the evening. On September 28, 2017, bat detection equipment was deployed in order to confirm the species that were visually observed. These results are similar to surveys conducted in August 2002 to provide information for the 2006 EIR/FONSI. In 2002, it was estimated that approximately 600 bats were using the bridge joint as a maternity roost and day roost. The majority of the bats were Mexican free-tailed bats, however pallid bats and Yuma myotis were also observed and recorded using bat detection equipment. There are no other known bat roosts within the Cholame Section.

American Badger (New Resource)

American badger (*Taxidea taxus*) is a California species of special concern. They are found throughout California, with the exception of the North Coast area. They are a burrowing species, adapted with powerful front claws that are efficient at digging burrows or digging out prey very quickly.

America badgers prefer open habitats including grasslands, shrublands, and oak savannahs with soft soils. Studies have indicated that badgers can have large home ranges, from hundreds to thousands of acres. Threats to American badgers include habitat loss, fragmentation, and rodenticide poisoning.

Surveys specific for American badger were not conducted for this project and no American badgers were observed during general wildlife surveys. However, during botanical surveys, burrows with the potential to be badger burrows were noted.

Although badgers are uncommon to observe, especially during the day, they are not unusual occupants of the State Route 46 Corridor. There are several occurrences recorded in the California Natural Diversity Database near Shandon (approximately 4 miles to the west) and in the Cholame Valley (approximately 5 miles to the northeast). American badger was also recorded as roadkill in the California Natural Diversity Database within the Cholame Section, near the intersection of Bitterwater Road. Grading for a utility relocation project, at the intersection of State Route 46 and McMillan Road (Postmile 45.6), entombed a badger in 2012 and a badger was killed on State Route 46 just east of Cholame Creek Bridge (Postmile 48) in 2017.

Tulare Grasshopper Mouse

The Tulare grasshopper mouse (*Onychomys torridus tularensis*) is a California species of special concern. The mouse has been observed in a variety of plant communities including bush seepweed scrub, saltbrush scrub, coast range saltbrush scrub, great valley mesquite scrub, and valley grassland.

Tulare grasshopper mice historically inhabited the San Joaquin Valley and the adjacent low valleys and hills from San Benito down to the Tehachapi Mountains. Currently, habitat loss and fragmentation has reduced their range to isolated populations along the western Tulare Basin, Carrizo Plain National Monument, the Cuyama Valley side of the Caliente Mountains, and the Ciervo-Panoche Region.

The nearest know occurrences of Tulare grasshopper mouse are from the late 1940s and early 1950s, approximately six and seven miles from the Cholame Section. There are no current records of this species in the project area, and no grasshopper mice were observed during general plant and wildlife surveys. Protocol level surveys for this species were not conducted.

Pronghorn Antelope and Tule Elk (New Resource)

Pronghorn antelope (*Antilocapra americana*) and tule elk (*Cervus canadensis nannodes*) are discussed together because these species have similar habitat requirements, project-related impacts, and avoidance and minimization measures.

Tule elk are a protected game species and are endemic to California. This species utilizes valley grasslands, oak savannah, foothill woodland, chaparral, and riparian habitat. The home ranges of tule elk vary depending on the quality of habitat and group size. Between 2005 and 2009, California Department of Fish and Wildlife radio-collared a total of 15 tule elk within the sub-herds of eastern San Luis Obispo County. The bulls (males) home range was between 31 and 121-square miles and the home range of the cows (females) was between 14 and 54-square miles. The home ranges were varied depending on the type of habitat. Based on the GPS data acquired, the southern boundary of this herds range appears to be State Route 46, and there is no evidence that they are currently passing under or over the two-lane roadway.

Pronghorn antelope are a protected game species that utilize grasslands, shrublands, and flat terrain with few trees and short-grass prairies. The pronghorn antelope home range can be influenced by habitat variables such as vegetation composition, vegetation height, and size of suitable habitat. Therefore, the home range of pronghorn across their current range (between Baja Mexico and Canada) can be profoundly different and can also shift significantly between summer and winter seasons, especially in places where it snows. Studies conducted in Montana, Idaho, and South Dakota have recorded home range size between a low of 2.5 to 8.7-square miles in the winter, to a high of 25.4 to 49-square miles over the course of several years. In the Cholame Valley, California Department of Fish and Wildlife conducted a GPS-collar study. Preliminary data from March to May 2017 demonstrated that pronghorn on the north side of State Route 46 do not frequently cross the two-lane highway.

Based on data from California Department of Fish and Wildlife, it can be concluded that in recent years both pronghorn antelope and tule elk are unable or unwilling to cross State Route 46. Historically, a sub-herd of pronghorn antelope occupied the grasslands on the south side of State Route 46, but the herd has not been observed since the early 2000's. Based on flight observations, GPS collar data, and lack of observation during general wildlife surveys over the last ten years of field work on the State Route 46 *Corridor Improvement Project*, neither pronghorn antelope nor tule elk appear to be crossing under Cholame Creek Bridge (Bridge No. 49-0036) and are therefore restricted to ranges north of State Route 46.

Common Wildlife

The land within and adjacent to the Cholame Section provides habitat for many animal species that do not possess special status protection. These common wildlife species are discussed below.

Common invertebrates seen within the Cholame Section include: tarantula wasp (Pepsis Formosa), tarantula (*Aphonopelma* sp.), Jerusalem cricket (*Stenopelmatus* sp.), scorpion (as observed from pallid bat guano; species unknown). There is no suitable habitat for branchiopods (fairyshrimp) within Cholame Section.

Non-native black bullhead catfish (*Ameiurus melas*), non-native bluegill (*Lepomis macrochirus*), native Sacramento sucker (*Catostomus occidentalis*), and other non-native predatory fish species were observed in 2001 and 2002 during a dewatering operation to install rock slope protection along Cholame Creek at Postmile 51.9.

Common amphibians within the Cholame Section include Northern Pacific treefrog (*Pseudacris regilla*), and California toad (*Anaxyrus boreas halophilus*).

The following reptiles were encountered on more than one occasion during general plant and animal surveys: Pacific gophersnake (*Pituophis catenifer catenifer*), valley gartersnake (*Thamnophis sirtalis fitchi*), California kingsnake (*Lampropeltis californiae*), coast range fence lizard (*Sceloporus occidentalis bocourtii*), western side

blotched lizard *(Uta stansburiana elegans*), California whiptail (*Aspidoscelis tigris munda*), and northern Pacific rattlesnake (*Crotalus oreganus oreganus*).

The following birds were encountered opportunistically or during Swainson's Hawk nesting surveys within the Cholame Section: golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), California scrub-jay (*Aphelocoma californica*), savannah sparrow (*Passerculus sandwichensis),*western meadowlark (*Sturnella neglecta*), mallard (Anas platyrhynchos), Brewer's blackbird (*euphagus cyanocephalus*), red-winged blackbird (*Agelaius phoeniceus*), cowbird (*Molothrus ater*), Lawrence's goldfinch (*Spinus lawrencei*), cliff swallow (*Petrochelidon pyrrhonota*), European starling (Sturnus vulgaris), house finch (*Haemorhous mexicanus),* house sparrow (*Passer domesticus*), turkey vulture (*Cathartes aura*), black phoebe (*Sayornis nigricans*), and western bluebird (*Sialia mexicana*).

Common mammals observed within the Cholame Section include California ground squirrel (*Otospermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), cottontail rabbit (*Sylvilagus audubonii*), feral pig (*Sus scrofa*), and mule deer (*Odocoileus hemionus*).

Environmental Consequences

The following section discusses potential impacts to animal species within the Cholame Section. Animals that have similar habitats and would be similarly affected by the project are discussed together.

Western Spadefoot Toad

No permanent impacts to western spadefoot toad aquatic or upland habitat will occur as a result of the Cholame North Modified Alternative (Option A). The effects analysis was conducted using a conservative potential dispersal distance of 1-mile. There are four ponds with suitable spadefoot breeding habitat located south of the existing alignment within the 1- mile dispersal radius. However, the existing highway is assumed to be a complete barrier to spadefoot movement, limiting the toad's ability to disperse to the north of the existing highway. By removing and restoring the existing highway and relocating the new alignment to the north, the Cholame North Modified Alternative (Option A) would add approximately 57.8 acres of available upland habitat for toads that may use potential breeding ponds to the south.

While 6.44 acres of temporary impacts to upland habitat would occur during removal and restoration of the existing highway, it is anticipated that construction of the project would be a long-term benefit to spadefoots due to the increase in available upland habitat.

Western Pond Turtle

No permanent or temporary impacts to southwestern pond turtle aquatic habitat would result from the construction and operation of the Cholame North Modified

Alternative (Option A). Southwestern pond turtles are known to disperse an average of 93-feet to upland habitat from aquatic habitat to nest during the summer months and an average of 163-feet from aquatic habitat to find refuge during winter storm flows. Habitat impact analysis includes the entire length of perennial water in Cholame Creek from Postmile 51.4 to Postmile 54.0 along with potential upland habitat to the north, between the creek and the existing highway.

As with the western spadefoot toad, the assumption is that the existing highway acts as a complete barrier to southwestern pond turtle dispersal. Therefore, permanent impacts to upland habitat are not anticipated since the new alignment would be constructed to the north of the existing alignment. Instead, moving the alignment further to the north would provide approximately 112 new acres of upland habitat suitable for turtles to utilize for nesting and refuge during winter floods.

While about 9.34 acres of temporary impacts would occur to upland habitat during removal and restoration of the existing highway, it is anticipated that construction of the project would be a long-term benefit to pond turtles due to the increase in available upland habitat.

Northern California Legless Lizard (New Resource) and Blainville's (Coast) Horned Lizard

Cholame North Modified Alternative (Option A) would result in the permanent loss of 1.36 acres of legless lizard and horned lizard habitat in upper White Canyon due to the replacement of the two existing 6-foot by 7-foot concrete box culverts with 12-foot by 10-foot arched box culverts. Approximately 0.17 acres of temporary impacts to habitat would also occur during installation of the culverts. However, removal of the existing culverts and restoration of the old roadbed would permanently restore 0.20 acres of unimpeded sandy wash habitat in the southern reach of White Canyon, adjacent to where the majority of the horned lizards were observed during surveys.

California Glossy Snake (New Resource) and San Joaquin Coachwhip

The California glossy snake and San Joaquin coachwhip occupy similar habitats and would be similarly affected by the project, therefore these species are discussed together. Although the highway is likely a partial barrier for both snake species, neither depends on ephemeral or perennial aquatic resources and therefore both have very large territories. As a result, the entire project limits were considered California glossy snake and San Joaquin coachwhip habitat.

The proposed Cholame North Modified Alternative (Option A) would result in about 90 acres of permanent impacts to snake habitat as a result of new pavement, and approximately 100 acres of temporary impacts would occur during construction. However, removal and restoration of the old roadbed would restore about 25 acres of grassland habitat suitable for both snake species, therefore the net loss of habitat would be about 65 acres.

The project plans to incorporate 16 undercrossings of various sizes and types with directional fencing, where feasible. These undercrossing will benefit glossy snakes and coachwhips by providing additional places to cross the highway.

Burrowing Owl

Burrowing owls prefer open, sparsely vegetated grassland habitat which the Cholame Section is almost entirely comprised of. Therefore, the entire Cholame Section was considered habitat for the owls.

The proposed Cholame North Modified Alternative (Option A) would result in about 90 acres of permanent impacts to burrowing owl habitat as a result of new pavement, and approximately 100 acres of temporary impacts would occur during construction. However, removal and restoration of the old roadbed would restore about 25 acres of grassland habitat suitable for burrowing owls, therefore the net loss of habitat would be about 65 acres.

California Horned Lark and Grasshopper Sparrow

California horned lark and grasshopper sparrow both prefer open, sparsely vegetated grassland habitat which the Cholame Section is almost entirely comprised of. Therefore, the entire Cholame Section was considered habitat for both bird species.

The proposed Cholame North Modified Alternative (Option A) would result in about 90 acres of permanent impacts to open grassland habitat as a result of new pavement, and approximately 100 acres of temporary impacts would occur during construction. However, removal and restoration of the old roadbed would restore about 25 acres of grassland habitat suitable for both bird species, therefore the net loss of habitat would be about 65 acres.

Golden Eagle (New Resource)

The Cholame North Modified Alternative (Option A) would not impact golden eagle nesting habitat but would affect golden eagle foraging habitat. Golden eagles utilize grasslands for foraging, which the Cholame Section is almost entirely comprised of. Therefore, the entire Cholame Section was considered golden eagle foraging habitat.

Similar to the other bird species discussed in this section, the proposed Cholame North Modified Alternative (Option A) would result in about 90 acres of permanent impacts to golden eagle foraging habitat as a result of new pavement, and approximately 100 acres of temporary impacts would occur during construction. However, removal and restoration of the old roadbed would restore about 25 acres of grassland habitat suitable for foraging, therefore the net loss of foraging habitat would be about 65 acres.

Pallid Bat, Big Brown Bat, Yuma Myotis, and Mexican Free-tailed Bat

The Cholame North Modified Alternative (Option A) would remove the old Cholame Creek Bridge where about 800 bats roost throughout the year, resulting in permanent impacts to bat habitat. There are no other known bat roosts in the vicinity of the Cholame Section.

However, the new bridges across Cholame Creek have been designed to incorporate day and night roosting crevice habitat to replace similar crevice habitat on the existing Cholame Creek bridge.

American Badger (New Resource)

The existing two-lane highway and sections of concrete median barrier currently act as a complete or partial barrier to America badger movement. Construction of the wider, four-lane highway would continue to be a potential barrier to American badger movement.

Construction of the Cholame North Modified Alternative (Option A) would result in about 90 acres of permanent impacts to badger habitat as a result of new pavement, and approximately 100 acres of temporary impacts would occur during construction. However, removal and restoration of the old roadbed would restore about 25 acres of badger habitat, therefore the net loss of foraging habitat would be about 65 acres.

Tulare Grasshopper Mouse

Based on the current locations of surviving populations of the Tulare grasshopper mouse, the species is not expected to be present within the project area. Therefore, no effects to the species are anticipated or discussed.

Pronghorn Antelope and Tule Elk (New Resource)

State Route 46 is currently a complete or partial barrier to pronghorn antelope and tule elk movement. As a result, these two species are not able to utilize quality habitat south of State Route 46 and could become genetically isolated from other sub-herds. Although the proposed project will result in an additional two lanes of traffic and would be located on an entirely new alignment north of the existing highway, the barrier effect is not anticipated to change as a result of the construction and operation of the project.

Common Wildlife

The proposed Build Alternative would result in impacts to habitat for various common wildlife species that exist within and adjacent to the proposed project. Measures to be implemented to protect the special status species described above will also serve to protect common wildlife species.

Avoidance, Minimization, and/or Mitigation Measures

Western Spadefoot Toad

The minimization and avoidance measures proposed for California tiger salamander and California red-legged frog (measures TES-1 through TES-6, see Section 3.2.5) will also protect western spadefoot toad. Caltrans also intends to purchase San Joaquin kit fox mitigation credits from the Palo Prieto Conservation Bank. The credits purchased to protect and enhance kit fox habitat will also benefit western spadefoot toad because the property contains known breeding ponds and suitable upland habitat for spadefoots.

No additional measures will be incorporated for this species.

Western Pond Turtle

The measures proposed for other waters (Measures WET-1 through WET-5; see Section 3.2.2) will protect western pond turtle by avoiding and protecting pond turtle aquatic habitat, and the measures proposed for California red-legged frog (measures TES-1 through TES-7, see Section 3.2.5) will aid in protecting both aquatic and upland pond turtle habitat as well as avoiding direct mortality or injury of individual turtles.

The following additional measures are proposed for the protection of western pond turtles:

Avoidance Measure AMS-1 (2006 Mitigation Measure-36) – Prior to construction activity within 1,000 feet of Cholame Creek, a qualified biological monitor shall inspect the ground for western pond turtles. Any discovered turtles shall be relocated to a perennial portion of Cholame Creek.

Impact/reason for mitigation measure – to avoid direct mortality or injury of western pond turtles.

Avoidance Measure AMS-2 – A biological monitor qualified to monitor western pond turtles shall be onsite prior to initial ground disturbance along the route of the existing alignment (i.e., during roadbed removal) to monitor and salvage western pond turtles or other wildlife that may not have been discovered during pre-construction surveys.

Impact/reason for mitigation measure – to avoid direct mortality or injury of western pond turtles and other sensitive wildlife species.

Northern California Legless Lizard (New Resource) and Blainville's (Coast) Horned Lizard

Minimization Measure WET-2 (see Section 3.2.2) outlines the process for collecting, stockpiling, and redistributing surface soils as well as the establishment of ESA's

adjacent to wetlands and other waters. This measure will also protect the northern California legless lizard and coast horned lizard and their habitat.

The following additional measures are proposed for the protection of these species:

Avoidance Measure AMS-3 (2006 Minimization Measure 20) – ~~Pitfall traps with drift fences would be placed within construction areas in the seven drainages identified in the environmental impacts section for several days prior to construction.~~ *Prior to clearing and grubbing and collection of topsoil at White Canyon and Cholame Creek, a qualified biologist will supervise the installation of exclusion fencing. Within the exclusion area, shrubs will be initially trimmed by hand or using a trimmer and a potato rake would be used to gently comb the ground surface for any buried wildlife (e.g., legless lizards, horned lizards).* Captured individuals would be relocated *downstream of the project on the south side of SR 46* to avoid direct mortality from construction.

Impact/reason for minimization measure – To minimize construction related impacts to California horned lizards.

Since publication of the 2006 EIR/FONSI, it has been determined that pitfall traps may be harmful to these sensitive lizard species. Therefore, a new method for identifying and relocating wildlife is proposed here.

Avoidance Measure AMS-4 (2006 Minimization Measure 21) – Initial habitat disturbance and construction at ~~Pine Creek (kilopost 65.2, postmile 40.5), Shimmin Canyon (kilopost 68.1, postmile 42.3), an unnamed drainage at kilopost 69.8 (postmile 43.4), McMillan Canyon (kilopost 73.2, postmile 45.5),~~ the Cholame Creek bridge #49-29, and White Canyon (~~kilopost 85.5,~~ postmile 53.1) ~~drainage's~~ would occur between April and October to ensure that horned lizards are active on the surface, and therefore able to be captured and relocated.

Impact/reason for minimization measure – To minimize construction related impacts to California horned lizards.

California Glossy Snake (New Resource) and San Joaquin Coachwhip

The measures proposed for California red-legged frog (measures TES-1 through TES-7, see Section 3.2.5) will also adequately protect California glossy snake and San Joaquin coachwhip through worker education, avoiding direct mortality or injury of individual snakes through surveys and relocations, and biological monitoring during initial ground disturbance.

No additional measures are proposed for these species.

Burrowing Owl

Several measures outlined in the Threatened and Endangered Species section (Section 3.2.5) will also serve to protect burrowing owls. Measure TES-1 will include

worker training for identification and protocol for discovery of burrowing owls. Measure TES-2 includes pre-construction surveys for sensitive wildlife species, including burrowing owls, and Measure TES-10 includes retainment of a qualified biological monitor for construction monitoring.

The following additional measures are proposed for the protection of burrowing owls, and have been modified from the 2006 EIR/FONSI in order to comply with more recent protocols:

Avoidance Measure AMS-5 (2006 Minimization Measure 22) – ~~All disturbance within 50 meters (164 feet) of occupied burrowing owl burrows would be mitigated per the Santa Cruz Predatory Bird Research Group's burrowing owl "on-site mitigation guidelines," which are summarized below (http://www2.ucsc.edu/scpbrg/mitigation.htm). If these guidelines are updated prior to construction, then the updated guidelines should be implemented.~~ All uncultivated grounds to be disturbed during construction should be surveyed for potential burrows less than 30 days prior to ground disturbance. *If a burrowing owl is discovered within the project limits or within 500 feet of the construction activities, a buffer zone for the burrow or burrow complex will be defined. Between February 1 and August 31 (nesting season), the buffer shall be 500 feet. During the fall or winter (September 1-January 30), the buffer shall 250 feet. Burrowing owls will not be disturbed at any time.*

~~Occupied burrows must be avoided between February 1 and August 31 due to nesting activities, unless California Department of Fish and Game personnel verify that egg-laying has not begun or that juveniles are capable of independent foraging.~~

~~Any burrow encountered between September 1 and January 31 should be carefully excavated by hand after placing one-way doors at entrances for 48 hours. Flexible plastic pipe should be inserted into burrows during excavation to provide an escape route for any remaining owls or other occupants.~~

~~Disturbed burrows shall be replaced with artificial burrows at a 1:1 ratio within 50-75 meters (164-246 feet) of the disturbed burrows, but at least 50 meters (164 feet) from the construction area.~~

Impact/reason for minimization measure – To minimize potential impacts to burrowing owls in the project area.

Since release of the 2006 EIR/FONSI, new protocols for protection of burrowing owls have been identified and implemented, which are outlined above. Namely, removal of burrowing owls from their burrows will not be employed for the Cholame Section.

~~2006 Minimization Measure 23 – Artificial burrows for burrowing owls would be constructed on property purchased for kit fox habitat mitigation.~~

~~Impact/reason for minimization measure – To enhance burrowing owl habitat on the property used for San Joaquin kit fox mitigation and to offset project impacts to occupied burrows.~~

This measure has been omitted. Implementation of AMS-5 will effectively protect burrowing owl from disturbance during construction.

California Horned Lark and Grasshopper Sparrow

Avoidance Measure AMS-6 (2006 Minimization Measure 24) – ~~At all locations east of Whitley Gardens, *P*~~re-construction surveys would be performed for California horned lark and grasshopper sparrow where grasslands, including within the existing right of way, are to be cleared with machinery between March 15 and July 31. If a*n* occupied nest is found~~, vegetation would not be cleared within 50 meters (164 feet) of that nest until that nest is abandoned or a permit is obtained from the USFWS to remove the nest~~ *within the project limits or within 250 feet of the project limits, a 250 foot buffer shall be defined to provide protection to the nest and its occupants until it is determined that the fledglings can fly on their own and are no longer dependent on their nest.*

Impact/reason for minimization measure – To minimize potential impacts to nesting California horned larks and grasshopper sparrows.

The buffer distance for this measure has been increased in response to more stringent guidelines released since the 2006 EIR/FONSI.

Golden Eagle (New Resource)

The protocol surveys for Swainson's Hawk, outlined in Minimization Measure TES-9 (see Section 3.2.5) will also adequately protect golden eagles.

No additional measures are proposed for this species.

Pallid Bat, Big Brown Bat, Yuma Myotis, and Mexican Free-tailed Bat

Avoidance Measure AMS-7(2006 Minimization Measure 31) – For ~~Estrella Section, Alternative 9N and for both Cholame alternatives if~~ *replacement of* Bridge #49-29 ~~were to be removed~~, bats would be excluded from roosts on the existing bridge between ~~October and March~~ *October 15 and November 15* ~~prior to bridge demolition~~. *The exclusion must remain in place during the rainy season until the bridge can be demolished in May per jurisdictional permit conditions.*

- *The Contractor shall develop a "bat exclusion" plan that will outline the methods and techniques for exclusion with the least possible level of disturbance. At a minimum this plan should attempt to install exclusion devices during the fall between October 15-November 15.*
- *The materials (i.e. netting or plastic sheeting) as well as the assembly of the exclusion shall not inadvertently trap bats or birds. It must be monitored*

weekly and repaired as soon as an issue arises. Foam may also be employed to fill up the joint and prevent access into the crevice once it has been determined that all bats have excavated the bridge.

- *A qualified biologist will be present during the entire exclusion process to confirm the absence of bats, approve the quality of the work, and to prevent any potential impacts to bats.*

Impact/reason for minimization measure – To minimize impacts to sensitive bat species.

Avoidance Measure AMS-8 (2006 Minimization Measure 33) – ~~For both Cholame section alternatives, if the Cholame Creek Bridge #49-29 were to be removed, then~~ *C*onstruction of new roosts *on the new Cholame Creek Bridges* would occur prior to bats being excluded from the existing Bridge #49-29.

Impact/reason for minimization measure – To minimize impacts to sensitive bat species.

~~(2006 Mitigation Measure 34) – To replace the lost night roost habitat resulting from bridge removals, all new bridges would incorporate bat-friendly features:~~

- ~~Minimize sandblasting: a final surface treatment under box-girder bridges often includes sandblasting. This smoothes the surfaces and, unfortunately, removes any surface irregularities and roughness that bats can grasp while roosting. If the bridge construction includes sandblasting or otherwise smoothing-out of external or internal surfaces under the bridges, all surfaces should be left rough within a few inches of the insides of corners that are 90 degrees or less. This can be accomplished by placing a small board in the corners while sandblasting to block the treatment.~~
- ~~Construct grooves or ridges: small grooves or ridges could be built into each corner underneath the bridges. Bats often grasp the slightest irregularities, such as the small ridges of concrete resulting from seams between boards used in the concrete forms.~~

~~Impact/reason for mitigation measure – To mitigate for the loss of bat roosts in the project area.~~

This measure has been omitted and is replaced below with AMS 9 which will serve to replace both day and night roosting habitat.

Mitigation Measure AMS-9 (2006 Mitigation Measure 36) – *The new Cholame bridges will be designed with bat habitat to account for the loss of roosting habitat on the existing bridges. Five bat boxes will be incorporated into each of the two new bridges (10 bat boxes total). The boxes will be installed facing to the east where they capture maximum morning and direct sunlight for warmth. The boxes will be close to the bridge deck to maintain a consistent temperature. At least one of these bat boxes will be suitable for night roosting.* ~~Compensatory mitigation must be considered for both Cholame alternatives if they would remove Bridge #49-29. This bridge contains at~~

~~least 600 bats and is most likely a maternity roost for California special concern species. Each Cholame alternative has three options for compensatory mitigation:~~

1. ~~Leave Bridge #49-29 in place.~~
2. ~~Modify abandoned buildings to enhance them as bat roosts.~~
3. ~~Construct bridges with modifications to allow bat roosting. The new bridge designs for either Cholame section alternative could replace the bat roosts. Any bridge construction modifications that provides accessible interior spaces or crevices that allow bats close to the sun-heated bridge deck would create suitable habitat. Expansion joints in girder or box construction bridges create suitable habitat. Pre-cast twin-beam construction is known to provide maternity roosts for high concentrations of crevice-roosting bats such as those on the existing bridge. With a concrete box girder, bats would have to be allowed inside the box girder (but contained in wooden boxes) through modified weep holes or other openings, or external features would have to be added to create suitable crevices near the bridge deck.~~

Impact/reason for mitigation measure – To compensate for the loss of roosts for sensitive bat species.

Minimization Measure AMS-10 (2006 Minimization Measure 42) – Swallow netting would not be placed on the Cholame Creek Bridges (Bridges #49-29 and 49-95) ~~and the Estrella River Bridge (Bridge #49-33)~~ because bats use these bridges. Swallow netting here would entangle bats and potentially cause mortality. ~~At the Estrella River Bridge, riparian vegetation and oak trees that would be removed during construction would be removed between July 15 and February 15. Otherwise, surveys for nesting birds will have to be completed before vegetation removal, and construction would be delayed if nesting migratory birds were found. The Cholame Creek Bridge decks would be removed between October 1 and February 28 to avoid the need to remove occupied nests and to avoid the bat maternity-roosting season.~~

Impact/reason for minimization measure – To minimize potential bat population impacts that would result from minimization measures for migratory birds.

Portions of this measure that do not pertain to the Cholame Section have been struck out. Additionally, during construction of previous sections of the *Corridor Project* bridge decks needed to be removed during summer months to avoid impacts to wetlands and other waters, as required by regulatory agencies. Therefore, the timing of bridge removal has been removed from this measure.

American Badger (New Resource)

The measures outlined for protection of the San Joaquin kit fox (Measures TES-10 – TES 13, see Section 3.2.5), will provide adequate protection for American badgers because these animals have similar lifestyles and occupy similar habitat areas.

No additional measures for protection of the American badger are proposed.

Tulare Grasshopper Mouse

No avoidance and minimization measures are proposed for the Tulare grasshopper mouse.

Pronghorn Antelope and Tule Elk (New Resource)

The design of the proposed Cholame North Modified Alternative (Option A) is not conducive to constructing undercrossings that are large enough to be effective for pronghorn antelope and Tule elk. These large, wary animals prefer open crossings that are tall and wide. Construction of such structures is not feasible within the Cholame Section because the alignment spans a relatively flat-lying valley floor, with a few areas that will require cutting through hillsides of the low rolling hills that extend into the valley.

However, designs for a wildlife undercrossing suitable for pronghorn and elk will be developed and incorporated in the future Wye Section, closer to where the majority of the elk and pronghorn populations are currently found.

Common Wildlife

AMS 11 (2006 Minimization Measure 43) – At ~~the Estrella River Bridge,~~ the White Canyon culvert at ~~kilopost 85.6 (~~postmile 53.2~~)~~ and the culvert~~s~~ at ~~kiloposts 69.8 and 90.8~~ (postmile~~s 43.4 and~~ 56.4~~)~~, nests would be removed prior to ~~March 1~~ *February 15* and then weekly thereafter as long as swallows attempt to nest.

Impact/reason for minimization measure – To minimize impacts to swallows

3.2.5 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (and the Department, 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 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 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, California Fish and Game Code Section 2050, et seq. 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 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.” 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 Federal Endangered Species Act and California Endangered Species Act requiring a Biological Opinion under Section 7 of 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

An official U.S. Fish and Wildlife species list for the project area was initially requested through the U.S. Fish and Wildlife IPaC website on June 2, 2017, September 24, 2018, and updated most recently on October 2, 2019. An official National Marine Fisheries Service species list for the project area was initially requested via email on December 27, 2017, again on September 24, 2018, and updated most recently on October 2, 2019. Both lists can be viewed in Appendix B and C respectively.

The Biological Opinion from U.S. Fish and Wildlife was issued on December 12, 2005 (1-8-03-F-59) for the entire State Route 46 *Corridor Improvement Project*. The Federal Endangered Species Act Section 7 effects determination is that the project may affect and is likely to adversely affect California tiger salamander (*Ambystoma californiense)* California red-legged frog (*Rana draytonii*), and San Joaquin kit fox (*Vulpes macrotis mutica*). There is no critical habitat for San Joaquin kit fox and the

proposed project does not overlap critical habitat for California tiger salamander nor California red-legged frog. The USFWS Biological Opinion can be found in Appendix E.

On November 13, 2017, a Caltrans Biologist and U.S. Fish and Wildlife Biologist discussed the difference between the original Cholame Alternative 1 (discussed in the 2006 EIR/FONSI) and the proposed Cholame North Modified Alternative (Option A), and how it relates to impacts to federally listed species. On November 22, 2017, U.S. Fish and Wildlife notified Caltrans via email that the proposed changes were consistent with the effects that were already analyzed in the existing Biological Opinion from the 2006 EIR/FONSI, and that further consultation was not required (Appendix E).

The 2081 Incidental Take Permit (No. 2081-2007-020-04) from the California Department of Fish and Wildlife was finalized on January 27, 2009 for the entire State Route 46 *Corridor Improvement Project*. A 2081 Incidental Take Permit allows California Department of Fish and Wildlife to authorize take of a species listed as endangered, threatened, candidate, or a rare plant, if that take is incidental to otherwise lawful activities and if certain conditions are met. Under the California Endangered Species Act, take is defined as to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill. The existing Incidental Take Permit covers San Joaquin kit fox, a state threatened species, and expires on December 31, 2020. Additional California Endangered Species Act coordination will be required for a time extension for the permit and the approximately 21 additional acres of permanent impact to San Joaquin kit fox habitat associated with the proposed Cholame North Modified Alternative (Option A).

CDFW recently listed the Crotch bumblebee as a candidate species on June 12th, 2019, at which time biological surveys and analysis addressing known changes to the Cholame Section had already been finalized. Therefore, potential impacts to this species will be evaluated and addressed in the Final Supplemental Environmental Impact Report.

California Tiger Salamander

The California tiger salamander (*Ambystoma californiense*) is a large, stocky salamander endemic to California that is both a federally and state listed species. It was listed as a threatened species by the State of California in 2010, and it was federally listed as endangered in Santa Barbara County and Sonoma County in 2000 and 2003, respectively. Additionally, the Central California Distinct Population Segment was listed as federally threatened in 2004, and critical habitat for this segment was designated in 2005. State Route 46 is located within the Central California Distinct Population Segment, which is found along the foothills of the Central Valley and Inner Coast Ranges from San Luis Obispo and Kern counties in the South to Sacramento and Yolo counties in the north. The populations within this segment are often fragmented and are under the threat of development from urbanization and agricultural conversion.

California tiger salamanders require pools or other aquatic habitat for breeding but spend the majority of their lives in upland habitats within grasslands and oak savannahs. The salamanders primarily live below ground in the burrows of gophers, ground squirrels, or other small mammals. During the wet winter months adult salamanders emerge from their burrows and disperse to ponds or other aquatic habitat to breed, returning to their burrows shortly after. After metamorphosis, juveniles emerge from ponds and disperse to upland habitat in late spring through summer. Breeding adult tiger salamanders may disperse to different breeding ponds each year and can cross creeks and multiple plant communities, and do not follow riparian corridors. For the purposes of the NES and this document, the current industry standard dispersal distance of individual California tiger salamanders is 1.3 miles, which is greater than the 1.24 miles suggested by CDFW in their 2003 Guidance for Site Assessments.

California tiger salamander protocol level surveys were not conducted for the Cholame Section, but six potential ponds were identified, and presence of California tiger salamander was assumed in all of the identified ponds. A 1.3-mile buffer was used to identify the likely extent of dispersal from ponds #1-6 (Figure 3.2.5-1), with the exception of pond #3 which was beyond the 1.3-mile dispersal distance.

Wildlife Movement:

Currently, State Route 46 is a physical and behavioral barrier to California tiger salamanders that may attempt to cross the highway while dispersing between aquatic and upland habitats. The roadway is a complete physical barrier for the 1.4-mile stretch of roadway containing concrete median barrier, as well as the remaining stretches of the Cholame Section based on the high level of traffic after sundown, even during winter months when salamanders are most likely to be moving above ground. The highway may also represent a behavioral barrier inhibiting salamander movement across the highway as a result of vehicle headlights, road noise, or texture of the roadway.

California Red-legged Frog

California red-legged frog (*Rana draytonii*) was federally listed as threatened in 1996 and is a California species of special concern. California red-legged frog has sustained a 70% reduction in its geographical range, especially in the Sierra Nevada foothills and Southern California. The Central Coast California red-legged frog populations are considered to have the greatest number of locations where California red-legged frog are present including Santa Barbara, San Luis Obispo, and Monterey Counties.

California red-legged frogs require a variety of habitat types including ponds, marshes, springs, streams, lagoons, and reservoirs, as well as riparian areas for winter refuge and uplands for dispersal. They can utilize seasonal ponds if water persists long enough for metamorphs to reach maturity before drying out. California red-legged frog are known to travel more than two miles through different habitat

types, topography, and riparian corridors, and typically move overland at night. Critical habitat was designated in 2010 for California red-legged frog.

California red-legged frog protocol level surveys were conducted in October 2001 and August 2002 in preparation for the 2006 EIR/FONSI. No California red-legged frogs were observed within the Cholame Section during these surveys. No additional surveys specific for California red-legged frogs were conducted. Cholame Creek provides abundant, permanent aquatic habitat for approximately 3.25 miles, from PM 51.4 to the Jack Ranch Café. One tree frog (*Pseudacris regilla*) was observed in Cholame Creek near PM 51.5, but no other amphibian species of any kind or age class were observed or heard during all general wildlife surveys in or adjacent to Cholame Creek. This is likely the result of non-native predatory fish preying on tadpoles (see Section 3.2.4, western spadefoot toad). During water quality testing of a perennial stretch of Cholame Creek, the water exceeded recommended levels of contaminants for Sulfate and Chloride, which has the potential to reduce or eliminate the presence of amphibian species.

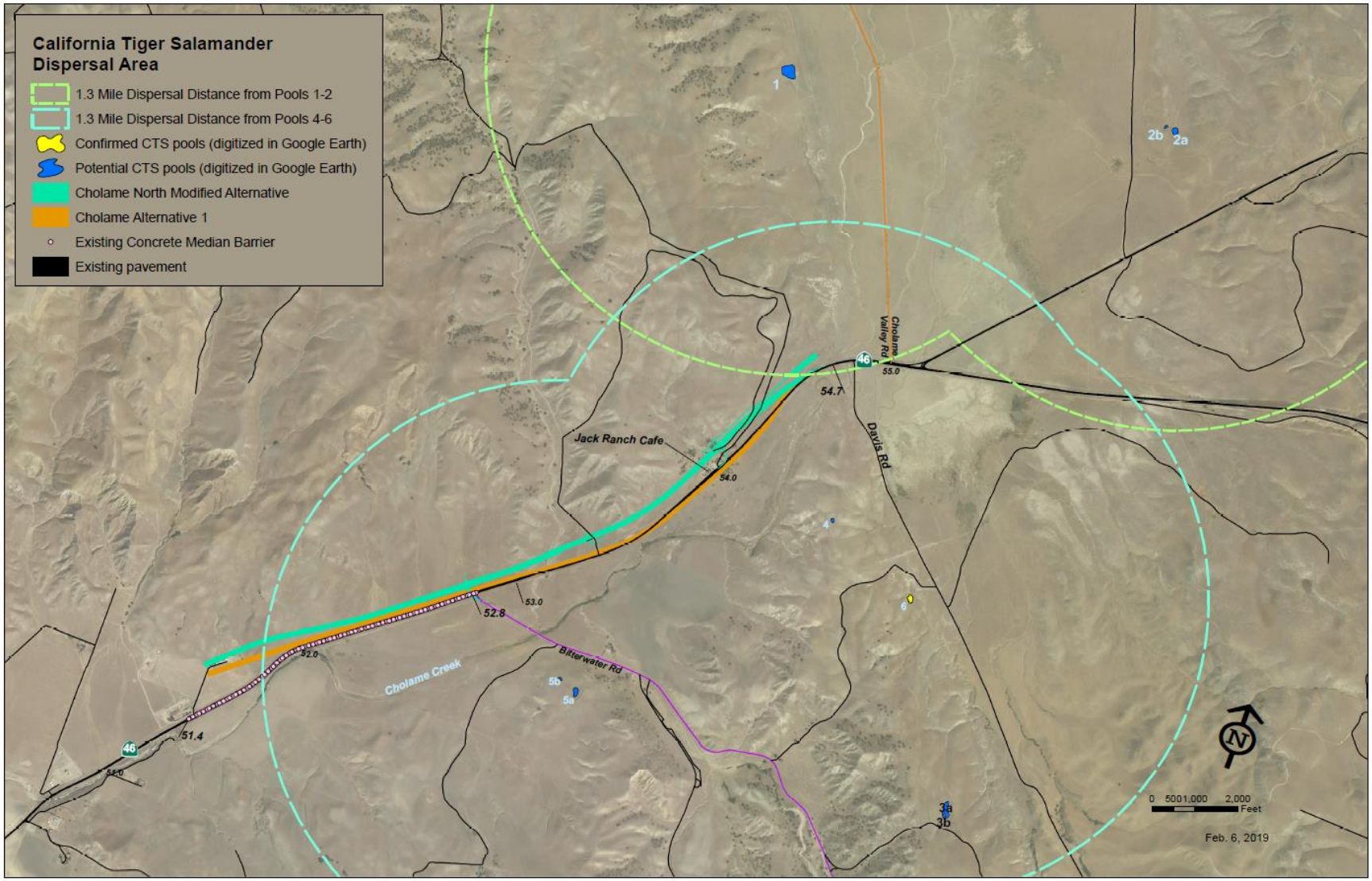


Figure 3.2.5-1: Breeding Pools for California Tiger Salamander depicting the maximum dispersal distance of individual salamanders (1.3-miles)

This page intentionally left blank

The nearest known recent occurrences of California red-legged frog, recorded in the California Natural Diversity Database, are located east of the Cholame Valley, more than 2.5 miles away from the eastern most boundary of the Cholame Section. Despite the lack of historical or current observations of California red-legged in Cholame Creek, the perennial stretches of the creek were considered California red-legged frog habitat.

It is assumed that State Route 46 is currently a complete barrier for the dispersal of red-legged frogs.

Blunt-nosed Leopard Lizard

Blunt-nosed leopard lizard (*Gambelia sila*) is listed as both a federal and California endangered species. It is also a state Fully Protected species which provides additional legal protection. No licenses or permits for take or possession may be issued for blunt-nosed leopard lizard. It is a relatively large lizard, endemic to California and is only found within the San Joaquin Valley, Carrizo Plain, and Cuyama Valley. This species is found in sparsely vegetated flat open areas and in alkali playas and valley saltbrush scrub. The blunt-nosed leopard lizard is typically absent from areas with steep slopes, dense vegetation, or seasonal flooding. Research suggests that blunt-nosed leopard lizards average home ranges are between 7 and 23 acres, meaning the species requires large tracts of land, which one study estimated to be a bare minimum of 308 acres of intact suitable habitat, for its long-term survival [Bailey and Germano (2015)]. Roads can also affect the species' ability to utilize adjacent suitable habitat, putting them at high risk for road impacts.

Upon confirming blunt-nosed leopard lizard activity on reference sites at Elkhorn Plain Ecological Reserve and the Carrizo Plain National Monument, several researchers conducted 12-day spring/summer protocol level surveys between appropriate times and temperatures. No blunt-nosed leopard lizards were observed during protocol level surveys. There are no historic or current occurrences of blunt-nosed leopard lizard within the Cholame Valley. A survey conducted as part of the original 2003 NES reported a potential blunt-nosed occurrence approximately 10 miles west but was later believed to be a side-blotched lizard based on size and habitat.

The habitat within the Cholame Section is of poor to medium quality for blunt-nosed leopard lizard. Although the sandy, sparsely vegetated wash of White Canyon is suitable habitat, there is very little suitable habitat adjacent to the wash of White Canyon due to thick Mediterranean grasses, which dominate the uplands. Therefore, although White Canyon contains potentially suitable habitat for blunt-nosed leopard lizard, it does not meet the minimum threshold size of 7 to 23 acres for a viable population. No blunt-nosed leopard lizard is anticipated to be within or adjacent to the Cholame Section, therefore the project would have no effect on blunt-nosed leopard lizard.

Swainson's Hawk (New Resource)

Swainson's hawk (*Buteo swainsoni*) was listed as a California threatened species in 1983 due to a significant loss of habitat and decline in Swainson's hawk numbers across the state of California. According to California Department of Fish and Wildlife, it is believed that historic populations of Swainson's hawk in California were upwards of 17,000 pairs. This number dropped to an estimated 375 pairs in 1980, but the species population has seen an upwards trend in recent years.

The Swainson's hawk is a medium sized raptor that breeds in the western United States and Canada, and overwinters in isolated areas of California, Mexico, and Central and South America. This species typically arrives on its breeding grounds between March and April. They typically nest in trees (between 41 and 82 feet high) in or near riparian areas, as well as on the edge of natural grasslands and agriculture fields. Swainson's hawk distribution and abundance has been linked to patterns of agriculture. Compatible agricultural crops for Swainson's hawk habitat include pasture, hay crops, and some irrigated crops. Less compatible areas include orchards and vineyards.

Swainson's hawk have a varied diet depending on their location. On their breeding grounds, they typically depend on small mammals, but during migration and in their overwintering sites, the species almost exclusively relies on insects. Swainson's hawks have one of the longest migrations of any American raptor, traveling down to Argentina for the winter and returning to North America to breed. This species displays a high degree of site fidelity, returning year after year to the same breeding grounds and often the same trees and nest site. Home ranges vary between 6,820 and 9,978 acres, likely dependent on the quality of foraging habitat and the distance between nesting and foraging habitat.

The migratory Swainson's hawk is periodically observed within the Cholame Section during fall and spring migrations. The most recent documented sighting in the Cholame Section was October 2017, just west of Bitterwater Road. This species has also been observed in adjacent lands during spring and fall migrations. In the summer of 2010, local birders notified Caltrans of the presence of a potential Swainson's hawk nesting site near Postmile 42. Swainson's hawk surveys were conducted in 2011 through 2016 between Postmile 41 and Postmile 46. At one point there were two confirmed nesting pairs within the larger Estrella River drainage, one near State Route 46 and a second further south in the Shedd Canyon area. The returning hawks near State Route 46 chose a different tree each year until 2013, and then one valley oak was used through the summer of 2016, when surveys ended. This tree is the nearest location of Swainson's hawk and is approximately 5 miles to the west of the Cholame Section. Based on numerous observations in spring 2018, nesting Swainson's hawks are suspected to still be nesting near Postmile 45. There are also records from the 1940s of nesting Swainson's hawks in a eucalyptus tree along Cholame Creek within the Cholame Section, however the specific location of this occurrence is not clear in the record.

Protocol level surveys for Swainson's hawk were not conducted because the nesting habitat within and adjacent to the Cholame Section is poor. Cholame Creek is not able to sustain large or robust enough vegetation to provide adequate habitat for nesting. No Swainson's hawk or potential nesting locations were observed in the Cholame Section, but the adjacent land is grassland used for grazing and is suitable for Swainson's hawk foraging habitat.

Tricolored Blackbird (New Resource)

Tricolored blackbirds (*Agelaius tricolor*) are a passerine (or perching) bird endemic to California and northern Baja and was recently listed in 2018 as a threatened species in the state of California due to its dramatic population decline. The species' breeding range is throughout most of California, although the bulk of their occurrence is within the Sacramento and San Joaquin Valleys. Physically, it resembles the red-winged black bird (*Agelaius phoeniceus*) but has a white line below the shoulder and a buzzy, almost cat-like song.

Tricolored blackbirds form the largest breeding colonies of any North American land bird with as many as 20,000 to 30,000 nests. For successful breeding, this species requires specific habitat elements such as: 1) protected and secure nesting substrate (i.e. surrounded by water or spiny vegetation) with 2) a water source, and 3) habitat that provides sufficient food resources within a few miles of the nesting colony. Typically, nesting tricolored blackbirds utilize standing water that supports cattails, tules, Himalayan blackberry, thick stands of thistle or stinging nettle, as well as agricultural grain fields. During the winter months, it often congregates into huge mixed species flocks that forage in grasslands and agricultural fields.

There is no nesting habitat for tricolored blackbird within or adjacent to the Cholame Section, therefore, no protocol level surveys for tricolored blackbird were conducted. Tricolored blackbirds were observed flying across State Route 46 in the Whitley 2B project area, in a large flock with Brewer's blackbirds and red-winged blackbirds, but this was during the winter months and was not indicative of breeding within the corridor. The nearest known occurrence of tricolored blackbird is 2.5 miles to the south within the Paleo Prieto Canyon. There is also another California Natural Diversity Database record approximately 3 miles to the east along Highway 46 on the Antelope Grade.

San Joaquin Kit Fox

San Joaquin kit fox (*Vulpes macrotis mutica*) is listed as a federal endangered species as well as a threatened California species and is endemic to California. Historically, this species' range stretched between Contra Costa County in the north down through the Central Valley, to eastern Santa Barbara County and southern Kern County. Its range has been reduced by half, mostly in the southern and western San Joaquin Valley and foothills. The largest surviving populations exist in western Kern County, on and around the Elk Hills and Buena Vista Valley, and in the Carrizo Plain National Monument in San Luis Obispo County. And urban population of San

Joaquin kit fox also inhabits the City of Bakersfield. However, this population has had a severe decline in recent years due to sarcoptic mange which can be fatal to the foxes if left untreated.

San Joaquin kit fox is a small, primarily nocturnal species that utilizes burrows year-round for pupping, shelter, and protection from larger predators. They prefer habitat with soil types conducive for burrowing and burrow modifications. The kit fox subspecies typically inhabits areas of low vegetation including grasslands and chenopod scrub communities. Their diet mainly consists of small mammals such as kangaroo rats, but they are also opportunistic, consuming large quantities of insects when locally abundant. Critical habitat has not been designated for San Joaquin kit fox.

No protocol level surveys specific for San Joaquin kit fox were conducted. Opportunistic observations were made simultaneously during botanical surveys and blunt-nosed leopard lizard surveys, which allowed time to investigate burrows within the Cholame Section. No San Joaquin kit fox or signs of their presence (i.e. scat, prey items, footprints, etc.) were observed.

The most recent occurrences of San Joaquin kit fox were between June and August 2017, approximately 3.4 miles northeast of the Cholame Section along the Solar Flats entrance road, just off State Route 41. At least three individual foxes were observed visually and through camera traps during surveys related to the California Flats Solar Project. There are several additional observations of San Joaquin kit fox along roads near the solar project in February and March 2017, located approximately 2.7 miles northeast of the Cholame Section. In 2016 there were several sightings of kit fox over several days, approximately 5.5 miles to the northeast and involved an adult and two juveniles.

The Cholame Valley population to the east of the Cholame Section is small but present, yet there also appears to be a surviving or transitory population of San Joaquin kit fox southwest of the Cholame Section. In 2014, scent stations were deployed by an undergraduate student at California Polytechnic State University to gather scat samples from mammals visiting the State Route 46 area. San Joaquin kit fox were detected via DNA extraction at four stations between River Grove Drive and McMillan Canyon Road. The closest detection to the Cholame Section was approximately 4.1 miles to the west. In 2001, a San Joaquin kit fox was visually observed along Cholame Valley Road, approximately 2.9 miles north of the Cholame Section. Additionally, there are several records form the 1970s along State Route 46, to the east and west of the Cholame Section.

Environmental Consequences

Table 3.2.5-1 summarizes species listed by the Federal and/or California Endangered Species Act. For Federally listed species, a Federal Endangered Species Act Section 7 effects determination has been made as a result of the proposed State Route 46 *Corridor Improvement Project*.

Due to a lack of suitable habitat within the Cholame Section and no observations during appropriately timed floristic surveys, the Federal Endangered Species Act Section 7 effects determination is that the proposed project will have no effect on the following federally listed plant species or their critical habitat (Table 3.2.5-1): marsh sandwort (*Arenaria paludicola*), California jewel-flower (*Caulanthus californicus*), Kern mallow (*Eremalche parryi ssp. kernesis*), and spreading navarretia (*Navarretia fossalis*).

Due to a lack of suitable habitat within the Cholame Section, the Federal Endangered Species Act Section 7 effects determination is that the proposed project will have no effect on the following federally listed invertebrate and vertebrate species or their critical habitat (Table 3.2.5-1): conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool fairy shrimp (*Brachinecta lynchi*), San Diego fairy shrimp (*Branchinecta sandiegonensis*) , Kern primrose sphinx moth (*Euproserpinus euterpe*), vernal pool tadpole shrimp (*Lepidurus packardi*), blunt-nosed leopard lizard (*Gambelia silus*), southwestern willow flycatcher (*Empidonax traillii extimus*), California condor (*Gymnogyps californianus*), California Ridgeway's rail (*Rallus obsoletus obsoletus*), least Bell's vireo (*Vireo bellii pusillus*), giant kangaroo rat (*Dipodomys ingens*), and the South Central California Coast steelhead (*Oncorhynchus mykiss*) distinct population segment.

As discussed more extensively in the Natural Communities section (Section 3.2.1), the greatest effect to species as a result of the proposed Build Alternative would be to species movement. Widening the rural 2-lane highway to a 4-lane expressway would intensify the barrier effect of State Route 46. Caltrans would incorporate appropriate design implementation measures to avoid and minimize impacts to wildlife connectivity whenever feasible.

Table 3.2.5-1 Federal and/or California Endangered Species Act Preliminary Effect Findings

Common Name	Scientific Name	Status	Habitat Present/ Absent	Effect Finding	Effect Finding for Critical Habitat
Marsh sandwort	*Arenaria paludicola*	Federally Endangered	Absent	No effect	No effect
California jewlel-flower	*Caulanthus californicus*	Federally Endangered/State Endangered	Habitat Present/Not Observed	No effect	No effect
Kern mallow	*Eremalche parryi ssp. kernesis*	Federally Endangered	Habitat Present/Not Observed	No effect	No effect
Spreading navarretia	*Navarretia fossalis*	Federally Threatened	Absent	No effect	No effect
Conservancy fairy shrimp	*Branchinecta conservation*	Federally Endangered	Absent	No effect	No effect

Common Name	Scientific Name	Status	Habitat Present/ Absent	Effect Finding	Effect Finding for Critical Habitat
Longhorn fairy shrimp	*Branchinecta longiantenna*	Federally Endangered	Absent	No effect	No effect
Vernal pool fairy shrimp	*Branchinecta lynchi*	Federally Threatened	Absent	No effect	No effect
San Diego fairy shrimp	*Branchinecta sandiegonensis*	Federally Endangered	Absent	No effect	No effect
Kern primrose sphinx moth	*Euproserpinus euterpe*	Federally Threatened	Absent	No effect	No effect
Vernal pool tadpole shrimp	*Lepidurus packardi*	Federally Endangered	Absent	No effect	No effect
California tiger salamander	*Ambystoma californiense*	Federally Threatened/State Threatened	Habitat Present	May affect, likely to adversely affect	No effect
California red-legged frog	*Rana draytonii*	Federally Threatened	Habitat Present	May affect, likely to adversely affect	No effect
Blunt-nosed leopard lizard	*Gambelia sila*	Federally Endangered/State Endangered/Fully Protected Species	Habitat Present	No effect	No effect
Swainson's hawk (New Resource)	*Buteo swainsoni*	State Threatened	Habitat Present	No impact	Does not apply
Tricolored blackbird (New Resource)	*Agelaius tricolor*	State Threatened	Habitat Present (foraging)	No impact	Does not apply
Southwestern willow flycatcher	*Empidonax trallii extimus*	Federally Endangered/State Endangered	Absent	No effect	No effect
California condor	*Gymnogyps californianus*	Federally Endangered/State Endangered	Absent	No effect	No effect
California clapper rail	*Rallus longirostris obsoletus*	Federally Endangered/State Endangered	Absent	No effect	No effect
Least Bell's vireo	*Vireo bellii pusillus*	Federally Endangered	Absent	No effect	No effect
San Joaquin antelope squirrel	*Ammospermophilus nelsoni*	State Threatened	Absent	No impact	Does not apply
San Joaquin kit fox	*Vulpes macrotis mutica*	Federally Endangered/State Threatened	Habitat Present	May affect, likely to adversely affect	May affect, likely to adversely affect

Common Name	Scientific Name	Status	Habitat Present/ Absent	Effect Finding	Effect Finding for Critical Habitat
Giant kangaroo rat	*Dipodomys ingens*	Federally Endangered/State Endangered	Absent	No effect	No effect
South Central California Coast (SCCC) steelhead distinct population segment (DPS)	*Oncorhyncus mykiss*	Federally Threatened	Absent	No effect	No effect

California Tiger Salamander

The Cholame North Modified Alternative (Option A) would be constructed entirely to the north of the existing alignment and away from potential California tiger salamander breeding ponds 4, 5a, 5b, and 6 (Figure 3.2.5-1). Permanent impacts to available upland habitat would be limited to those sections of the new alignment that are unobstructed by the existing highway. Such impacts would total 2.84 acres and be restricted to the eastern end of the project where ponds 1, 2a, and 2b are located to the north of the existing highway. Temporary impacts to California Tiger Salamander were similarly calculated, such that impacts on the north side of SR 46 where the highway is anticipated to be a dispersal barrier were not included. Temporary impacts to upland habitat would total 7.77 acres and would occur as a result of removing the existing roadway and road prism.

Overall, it is anticipated that the realignment of SR 46 as a result of the project would benefit tiger salamanders by moving the highway away from breeding ponds 4, 5a, 5b, and 6 and would result in a gain of approximately 73 acres of suitable upland habitat from restoration of the existing roadway and the uplands in between the existing and new alignments. Following construction of the Build Alternative, dispersing individuals would have additional upland habitat to disperse into without the barrier of the highway. With the proposed highway further to the north, the local population would experience less fragmentation of suitable upland habitat in close proximity to potential breeding ponds.

The U.S. Fish and Wildlife Service (USFWS) issued a Biological Opinion for California tiger salamander in December 2005 (1-8-03-F-59) and determined that the project may affect and was likely to adversely affect this species. The Biological Opinion determined that no breeding habitat would be affected by the project and that only a small amount of upland habitat would be adversely affected. Furthermore, U.S. Fish and Wildlife Service calculated the dispersal probability of CTS to be extremely low in the Cholame Section. No tiger salamander critical habitat is located in the biological study area.

California Red-legged Frog

No impacts to aquatic California red-legged frog habitat or red-legged frog critical habitat would occur under the proposed Build Alternative. Temporary impacts to upland habitat would total about 9.34 acres as a result of removing the old State Route 46 roadbed.

Though temporary impacts to upland habitat are anticipated as part of the proposed Build Alternative, the Build Alternative would benefit California red-legged frogs because it would move the highway further north, away from the creek which would expose new upland habitat for California red-legged frogs for dispersal and refuge during winter floods. Restoration of the existing SR 46 roadbed would provide about 112 acres of new upland habitat for California red-legged frogs to utilize.

The USFWS Biological Opinion issued for California red-legged frog sited concern over potentially degraded water quality as a result of highway runoff during winter rains. The Biological Opinion was originally prepared in response to the preparation of the 2006 EIR/FONSI. For the preferred alternative selected in the 2006 EIR/FONSI (Cholame Alternative 1), the buffer between the highway and perennial aquatic habitat would have been between 131 and 164 feet. For the Cholame North Modified Alternative (Option A), the buffer between the proposed alignment and California red-legged frog habitat will be over 350 feet, thereby providing a larger vegetated area to filter out roadway pollutants prior to entering Cholame Creek. This area between the proposed alignment and the creek will provide more assurance that pollutants from roadside runoff will not adversely affect California red-legged frog aquatic habitat.

Blunt-nose Leopard Lizard

The Cholame North Modified Alternative (Option A) would not impact blunt-nosed leopard lizard.

Swainson's Hawk (New Resource)

Nesting habitat for Swainson's hawk is not anticipated to be impacted as a result of the Cholame North Modified Alternative (Option A). Swainson's hawk utilizes grasslands for foraging and the nesting pair approximately 5 miles to the west could easily utilize the project area for foraging. For this reason, the entire Cholame Section was considered Swainson's hawk foraging habitat.

The permanent impacts anticipated for the proposed Cholame North Modified Alternative (Option A) is about 90 acres, where new pavement would displace Swainson's hawk foraging habitat. In addition, approximately 100 acres of temporary impacts would occur as a result of the Cholame North Modified Alternative (Option A). upon completion of the new alignment and removal and restoration of the old roadbed, approximately 25 acres will be restored to grasslands suitable for Swainson's hawk foraging, therefore the net loss of habitat would be about 65 acres.

Tricolored Blackbird (New Resource)

The Cholame North Modified Alternative (Option A) would not impact tricolored blackbirds.

San Joaquin Kit Fox

The entire Cholame Section was considered San Joaquin kit fox habitat when analyzing project related impacts because this species is often associated with grasslands, similar to those within the Cholame Section.

The Cholame North Modified Alternative (Option A) would result in about 90 acres of permanent impacts to San Joaquin kit fox habitat as a result of new pavement. In addition, approximately 100 acres of temporary impacts would occur as a result of the Cholame North Modified Alternative (Option A). Upon completion of the new alignment and removal and restoration of the old roadbed, approximately 25 acres would be restored to grasslands suitable for San Joaquin kit fox, therefore the net loss of habitat would be about 65 acres.

The greatest effect on San Joaquin kit fox as a result of widening State Route 46 would be intensifying the barrier effects of the highway to movement of the species. The proposed alignment maintains this barrier in the same general area as the existing highway, which bisects San Joaquin kit fox habitat from east to west. Kit foxes prefer traveling through open areas with a wide, clear view, and room to elude predators, therefore they prefer to cross the highway pavement rather than using culverts or other confined spaces available as undercrossings. Vehicular mortality can be one of the leading causes of death for some San Joaquin kit fox populations and increasing the width and traffic volume of State Route 46 may decrease the ability for kit foxes to cross the highway and increase the potential for vehicle strikes.

However, per the USFWS Biological Opinion both small (36'' diameter pipe culverts) and large undercrossings (8'x10' or larger box culverts) have been incorporated into the overall *Corridor Project every 0.3 miles* whenever feasible, and the installation of directional fencing would encourage the use of these undercrossings by kit foxes and other wildlife species, which may reduce the barrier effect of the highway.

Avoidance, Minimization, and/or Mitigation Measures

California Tiger Salamander and California Red-legged Frog

Because California tiger salamander and red-legged frog occupy similar habitat areas, the avoidance, minimization, and mitigation measures designed to protect these two species are similar and are discussed below.

Avoidance Measure TES-1 – Preconstruction meetings with the construction contractor and crew will be conducted to brief them on the potential presence of California tiger salamander, California red-legged frog, and other sensitive wildlife

species in the project area, and educate onsite workers in the identification and habitat requirements of wildlife, as well as the ramifications of take of a listed species. The minimization measures outlined will also be discussed.

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders, California red-legged frogs, and other sensitive wildlife species

Avoidance Measure TES-2 – A qualified biologist will conduct preconstruction surveys for California tiger salamander, California red-legged frog, and other sensitive species within two days of the initiation of project construction. Any encounter of a listed species will be reported to USFWS immediately or as soon as practicable (i.e., the following business day if encountered at night). Listed species that are found in harm's way will be relocated to appropriate habitat in consultation with USFWS.

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders, California red-legged frogs, and other sensitive wildlife species

Avoidance Measure TES-3 **–** Earthwork within 270 feet of California tiger salamander or red-legged frog aquatic habitat will be completed between May 1 and October 1.

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders, California red-legged frogs, and other sensitive wildlife species

Avoidance Measures TES-4 (2006 Minimization Measure 13) – Equipment and materials storage areas shall be located ~~in areas~~ *within the proposed median (or between the existing highway and the proposed alignment) to the maximum extent practicable. If a median location is unavailable, then equipment and material storage areas shall be located in areas on the north side of the current Highway 46 alignment whenever feasible between PM 51.4 54.5* ~~with no small mammal burrows or areas greather than 671 meters (2200 feet) from potential breeding pools.~~

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders

Avoidance Measure TES-5 **–** Pesticide application will be avoided within 500 feet of all wetlands/water courses.

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders and California red-legged frog

Avoidance Measure TES-6 **–** All areas greater than 15 feet beyond the proposed cut/fill limits would be off-limits to construction equipment within areas of the project with the potential to impact California tiger salamander and California red-legged frog.

Impact/reason for minimization measure – To reduce effects to California tiger salamanders and red-legged frogs

Avoidance and Minimization Measure TES-7 **–** Caltrans will comply with the conditions of the 2005 Biological Opinion issued by USFWS (1-8-03-F-59) that pertain to California tiger salamander and red-legged frog (appendix E).

Impact/reason for measure – to protect California tiger salamander and California red-legged frog and comply with regulations set forth in the Biological Opinion issued by USFWS.

Note on measure – Additionally, Caltrans also intends to purchase San Joaquin kit fox mitigation credits from the Palo Prieto Conservation Bank. The credits purchased to protect and enhance kit fox habitat will also benefit California tiger salamander and red-legged frog, which are known to breed and use upland habitat on the property.

Swainson's Hawk (New Resource)

Minimization Measure TES-8 **–** If construction begins between March 20 and August 31, at least two protocol level surveys during Periods I, II, or V will be conducted prior to the beginning of construction. The protocol level surveys will be replicated each spring that construction activities occur. if a Swainson's hawk nest is detected within the project limits or within 0.25 miles of construction activities, a buffer zone for the nest will be defined in consultation with California Department of Fish and Wildlife.

Impact/reason for mitigation measure – To reduce impacts to Swainson's hawk.

San Joaquin Kit Fox

The following are minimization measures, reasonable and prudent measures, as well as terms and conditions of the Biological Opinion:

Minimization Measure TES-9 (2006 Minimization Measure 11) – A qualified biologist would be hired full time, by the construction contractor, to implement the April 1997 "USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance". This person would also be responsible for biological monitoring requirements for other species, pre-construction surveys, and general monitoring of biological resources.

Impact/reason for minimization measure – The function of this position would be to insure the proper implementation of the avoidance and minimization measures for all species that could be in the project area. Specific duties would include monitoring for kit fox, pre-construction surveys, and establishment of ESA areas.

Minimization Measure TES-10 (2006 Minimization Measure 26) – Culverts for wildlife passage would be incorporated into the project to minimize impacts to San Joaquin kit fox. Culverts for wildlife passage would be a minimum of ~~91 centimeters (~~36 inches~~)~~ in diameter and would be placed, where topography would allow, at a minimum *of* ~~0.5 kilometer (~~0.3 mile~~)~~ intervals. Culverts would not be placed at ~~0.5 kilometer~~ *0.3 mile* intervals where drainage culverts or bridges greater than ~~91 centimeters (~~36 inches~~)~~ are already proposed. ~~Also, large box culverts would be~~

~~placed as cattle crossings on both State Routes 41 and 46, east of the wye, to facilitate livestock movement and to make the area within the Wye more accessible for wildlife~~.

Impact/reason for minimization measure – To minimize the barrier effect of the highway on all species, including San Joaquin kit fox.

Minimization Measure TES-11 (2006 Minimization Measure 27) – 1 meter wire mesh (with opening less than ~~5 centimeters or~~ 2 inches) drift fencing would be placed parallel to the highway or angled away from the highway, for ~~25 meters (82 feet)~~ *100 feet* from the inlets and outlets of drainage culverts and kit fox specific culverts to encourage their use.

Impact/reason for minimization measure – To encourage the use of the proposed wildlife passage culverts.

Mitigation Measure TES-12 (2006 Mitigation Measure 28) – Offsite mitigation for San Joaquin kit fox habitat impacts would be accomplished primarily through funding conservation easement purchases or by purchasing credits in an approved mitigation bank in the project vicinity. Offsite compensatory mitigation ratios would be 4:1 for permanent impacts ~~between kilopost 60.5 (postmile 37.6) and kilopost 90.6 (postmile 56.3), 3:1 between Airport Road and Jardine Road, and 2:1 between Jardine Road and kilopost 60.5 (postmile 37.6).~~ Temporary impacts would be mitigated offsite at a ratio of one-third: one (1/3:1).

Impact/reason for mitigation measure – To reduce the level of impact to San Joaquin kit fox and to compensate for the take of kit fox habitat.

Note on measure – Caltrans has already purchased a portion of the San Joaquin kit fox mitigation credits from the Palo Prieto Conservation Bank and will purchase the additional credits upon completion of the Supplemental Environmental Document for the State Route 46 *Corridor Improvement Project*.

Mitigation Measure TES-13 (2006 Mitigation Measure 29) – Enhancements proposed to reduce the impacts of the proposed project on San Joaquin kit fox include funding offsite mitigation.~~, enhancement, and site maintenance. Habitat enhancement projects may include the construction of artificial dens. Artificial dens would be constructed on properties from which conservation easements are purchased as mitigation for impacts resulting from this project, properties purchased outright for mitigation, on other private lands deemed suitable by the USFWS and the CDF&G or on public lands.~~

Impact/reason for mitigation measure – To reduce the level of impact to San Joaquin kit fox and to compensate for the take of kit fox habitat.

Avoidance and Minimization Measure TES-14 – Caltrans will comply with the conditions of the 2005 Biological Opinion issued by USFWS (1-8-03-F-59) that

pertain to San Joaquin Kit Fox and the 2081 Incidental Take Permit issued from CDFW in 2007 (No. 2081-2007-020-04) refer to Appendix F.

Impact/reason for measure: to protect San Joaquin Kit Fox and comply with regulations set forth in the Biological Opinion issued by USFWS and Incidental Take Permit from CDFW.

3.2.6 Invasive Species

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration 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

The 2006 EIR/FONSI, and the June 2019 Supplemental Natural Environmental Study completed for the Cholame Section were used to prepare this section of the document.

Several invasive plant species, as identified by the California Invasive Plant Council (Cal-IPC; https://www.cal-ipc.org/) occur within the Biological Study Area. One of the most notable invasive species is a grove of tree of heaven (*Ailanthus altissima*) surrounding Jack Ranch Café in the eastern portion of the Cholame Section. This tree species is native to China and is a prolific seed producer, grows fast, rapidly re-sprouts from root saplings, and has an aggressive root system known to cause damage to pavement, sewers, and building foundations. These trees have creeping roots that produce many suckers and produce chemical compounds that are toxic to other plant species. The grove at Jack Ranch Café appears to be a multi-aged stand containing both older, large trees and young saplings, and extends from the base of the hills north of the Café to south of the highway and along the roadway.

Elsewhere within the Biological Study area, the disturbed edges of the existing highway support several other invasive species including yellow star thistle (*Centaurea solstitialis*), Russian thistle (*Salsola tragus*), and sunflower (*Helianthus* sp.). Additionally, it should be noted that the grasslands of the Cholame Section are dominated by non-native grasses and forbs. However, these species are now considered to be naturalized in California due to their widespread nature.

Environmental Consequences

Ground disturbance and other aspects of project construction (e.g. erosion control, landscaping) could potentially spread or introduce invasive species within the project area.

Proper removal of Tree of heaven is essential to avoid the spread of this invasive species. As described above, these trees are able to rapidly re-sprout from root saplings. Proper removal protocol, as adapted from the "Field Guide for Managing Tree-of-Heaven in the Southwest" (U.S. Department of Agriculture), has been included as part of the minimization measures below.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance measures would be implemented to prevent the introduction or spread of invasive species during construction of the Cholame Section.

Minimization Measure IS-1 – Only clean fill shall be imported. When practicable, invasive exotic plants in the project site shall be removed and properly disposed. All vegetation removed from the construction site shall be taken to a landfill to prevent the spread of invasive species.

Avoidance Measure IS-2 – Construction equipment shall be free of excessive dirt that may contain weed seed before entering the construction site. If necessary, wash stations, either on-site or off-site, shall be established for construction equipment under the guidance of Caltrans to avoid or minimize the spread of invasive plants and/or seed within the construction area.

Minimization Measure IS-3 – Proper removal protocol for tree of heaven shall be followed:

- Tree of heaven seedlings shall be pulled mechanically or by hand, by removing as much root material as possible.
- Tree of heaven seedlings shall be cut at the base and an appropriate chemical herbicide shall be painted across the stump with a paint brush, such that the cambium layer (just inside the bark ring) is completely covered. The herbicide must be applied to the cut surface within five minutes of cutting to ensure uptake of the chemical before the plant can seal off the cut area. Cut-stump injections of an appropriate herbicide may be used in addition to the cut and paint method described above. Herbicide application shall be conducted by licensed and experienced Caltrans staff or a contractor with a current applicator's license.
- For trees that occur within 100-feet of jurisdictional wetlands or creek, chemical treatments shall use a glyphosphate-based herbicide approved by the U.S. Fish and Wildlife Service, such as Aquamaster® or Rodeo®;
- If any re-sprouting of trees occurs, a follow-up control strategy of foliar herbicide spraying (applying to leaves) should be completed. Licensed and

experienced Caltrans staff or a contractor with a current applicator's license shall use a hand-held sprayer to apply herbicide to leaves and be supervised by a certified arborist or qualified biologist that can adequately identify tree of heaven. Follow up spraying shall occur no sooner than 30 days after the tree of heaven have been removed, and no later than 60 days. Foliar applications of herbicide shall not occur when wind speeds are more than 3 miles per hour

Minimization Measure IS-4: Herbicide use shall be appropriate for the target species, and shall follow the below guidelines:

- All precautions shall be taken to ensure that no herbicide is applied to native vegetation;
- Herbicides shall not be applied on or near open water surfaces (no closer than 100-feet from open water);
- Herbicide spraying shall not occur when wind speeds are more than 3 miles per hour;
- No herbicides shall be applied within 24 hours of forecasted rain;
- Application of all herbicides shall be done by qualified Caltrans staff or contractors with a current applicator's license to ensure that overspray is minimized, that all applications are made in accordance with the label recommendations, and with implementation of all required and reasonable safety measures. A safe dye shall be added to the mixture to visually denote treated sites. Application of herbicides shall be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins;
- All herbicides, fuels, lubricants, and equipment shall be stored, poured, or refilled at least 500-feet from riparian habitat or water bodies in a location where a spill would not drain directly towards aquatic habitat. Prior to the onset of work, Caltrans shall ensure that a plan is in place for a prompt and effective response to accidental spills. All workers shall be informed of the importance preventing spills and of the appropriate measures to take should a spill occur.

Avoidance Measure IS-5 – Invasive species listed in the Cal-IPC Invasive Plant Inventory shall not be included in the Caltrans erosion control seed mix or landscaping planting plans.

Avoidance Measure IS-6 – The contract specifications for permanent erosion control will require the use of regionally appropriate California native forb and grass species that occur in the same general geographic area as the project site.

Avoidance Measure IS-7 – Mulches used on the project will be from source materials that will not introduce exotic species.

3.3 Socio-Economic Environment

3.3.1 Visual Resources

Regulatory Setting

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

Affected Environment

The following analysis regarding potential impacts to visual resources as a result of the Cholame North Modified Alternative is derived from the Supplemental Visual Impact Assessment (VIA) dated May 2018. The existing visual character in the Cholame area has not changed from that which is described in the 2006 EIR/FONSI. Although the Cholame North Alternative proposes moving the alignment to the north between Postmiles 51.9 and 54.6, the highway still passes through the same overall landscape as the 2006 EIR/FONSI preferred alternative (Alternative 1).

The 2006 EIR/FONSI defines the corridor landscape as three separate areas spanning from west to east, describing the landscape in the Cholame Section (eastern end of the corridor) as predominantly flat with views of the surrounding low hills.

This Supplemental Draft EIR/Updated EA provides additional details about the visual character and landscape within the limits of the Cholame Section.

Throughout the area of the Cholame North Modified Alternative, the highway itself follows mostly flat topography, with rolling hills visible to the north and south. Cholame Creek meanders along the valley floor, crossing Highway 46 at several locations in the vicinity.

Typical of the eastern Highway 46 corridor, the visual character along the North Alternative is distinctly rural. Occasional ranch development is seen in the area, and cattle grazing, and open space are the primary land uses. An electric sub-station is seen south of the highway, and an above-ground oil storage tank and support buildings are located along the highway to the north.

The existing highway alignment passes immediately south of the Jack Ranch Café and James Dean Memorial near the eastern portion of the project. The Jack Ranch Café is a popular stopping place for travelers and truckers along Highway 46. Portions of the Café building may date back to 1923, and since that time the site has included uses such as a restaurant, post office, gas station, and garage. Current uses include a restaurant and wine tasting room. A wooden post office kiosk is located north of the restaurant, and an unpaved parking lot surrounds the building.

The James Dean Memorial is located approximately 100 feet northeast of the café. The monument is made of stainless steel, in an inverted “L” placed around an Ailanthus tree (Tree of Heaven). The 30-square foot monument is placed on Japanese gravels and has a concrete bench along the perimeter. The monument is located within the unpaved parking lot shared with the café.

Scattered ailanthus, oak and sycamore trees are seen surrounding the Jack Ranch Café and James Dean Memorial complex, and as viewed from a distance are primary indicators of development at the site. North of the Café and monument complex is an access road to the adjacent ranch, along with cross-fencing, a corral, and an above ground water tank.

Surface water does not play an important role as a visual element throughout the region. No standing water bodies are within the viewshed of the project, and the few streams throughout the area are seasonal and not easily noticeable from a moving vehicle. Although surface water is not apparent, the riparian corridor of Cholame Creek is visible at various locations in the project vicinity.

State Route 46 is defined as an Eligible State Scenic Highway. Identification as such means that the highway has been recognized by the State of California as having the potential to become an Officially Designated State Scenic Highway, if nominated by the local jurisdiction and approved by the state. This eligibility affords no protections or restrictions on highway projects or adjacent development, however it is an indicator of the scenic value of the route and of possible viewer sensitivity to changes in the visual environment.

Environmental Consequences

A Supplemental Visual Impact Assessment (VIA) was prepared to evaluate the change in the degree of visual impacts as a result of the proposed Cholame North Alternative. The VIA model was initially developed by the Federal Highway Administration (FHWA) and improved by Caltrans. A detailed discussion regarding visual analysis methodology is included in Section 3.3.1 of the 2006 EIR/FONSI.

Visual impact is a function of assessing the amount of physical change (resource change) and comparing that with the degree of viewer sensitivity (viewer response). To understand and predict viewer response to the appearance of a highway project, we must know something about the viewers who may see the project. For highway projects, we begin with two general viewer groups those with views from the road (motorists) and those with views of the road (residents), as well as the physical location of each viewer group, the number of people in each group and the duration of their view.

The Photo simulations below document the existing scenic resources and changes, and are used to evaluate the effects of the proposed Build Alternative

Figure 3.3.1-1 shows the current view taken from State Route 46 looking east approximately 2 miles east of the Shandon Safety Roadside Rest Area. Figure 3.3.1-

2 provides a simulation of what a similar portion of the project would look like if the proposed Build Alternative was approved and constructed pm the new alignment. Figure 3.3.1-3 and 3.3.1-4 provide existing and simulated views looking west in the vicinity of the Jack Ranch Café.



Figure 3.3.1-1: Existing view of SR 46 looking east approximately two miles east of the Shandon Roadside Rest Area.



Figure 3.3.1-2: Future view looking east from the new alignment of the proposed Cholame North Modified Alternative (Option A)



Figure 3.3.1-3: Existing view of SR 46 looking west near the Jack Ranch Café.

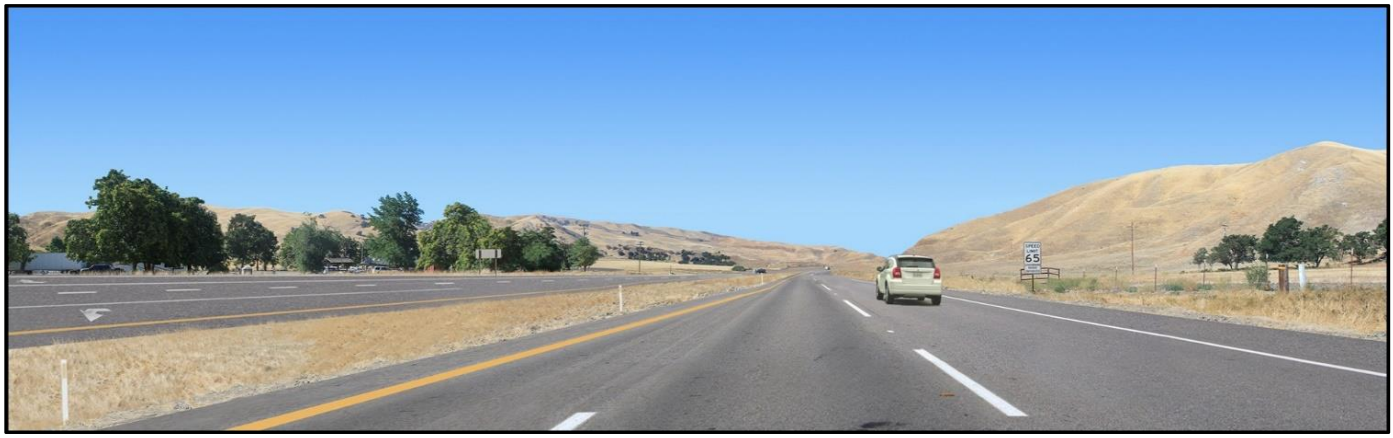


Figure 3.3.1-4: Simulated westbound view near the Jack Ranch Café as seen from the proposed Cholame North Modified Alternative (Option A).

The existing visual quality of SR 46 throughout the length of the project area is moderately high. This view quality is due primarily to the rural character, the topographic relief, scattered vegetation and the minimal visibility of built elements. Independent of the visual quality, it is expected that although many viewers will be sensitive to the changes proposed by the project, many others will have only moderate sensitivity regarding scenic quality of the route due to long distance travel through a continuous type landscape.

Changes in visual resources will occur within the project limits as a result of the proposed Build Alternative.

Large cut slopes and berms would be highly visible engineered features and without contouring would appear inconsistent with the natural slopes and previously

contoured cuts along the route and would be noticeable from long distances on and off the highway.

The CHP inspection site would also have an effect on the visual character of the area. This proposed facility would not be entirely out of character with the highway environment, however the site would add visual clutter to the area in terms of additional paving, signage, concrete barrier, parked and queued-up vehicles and other elements.

In the vicinity of the Jack Ranch Café, changes to visual quality would be associated with the increased scale of the highway facility in relation to the setting of the café. The existing highway alignment currently exposes the southern, front side of the café building to public view. The proposed Build Alternative realigns the highway to a location approximately 350 feet north of the existing highway, changing the highway viewpoints of the café property. Because the landform rises north of the café, the elevation of the realigned highway would be approximately 5 feet above the ground level of the café parking lot, increasing visual exposure to the property. Overall the noticeability of the Jack Ranch Café and James Dean memorial would remain the same or slightly increase as a result of the relocated highway. As seen from the highway, the visual value of the Café as an iconic rural roadside development would not decrease. Even with the primary views to the property being from the north, the property would be recognized by the visibility of the old buildings and the associated stands of mature trees. The numerous parked vehicles and people often present at the café and memorial would also help maintain the visual existing character of the property as seen from Highway 46. The existing windrow of trees along the existing highway south of the café would be retained. A new parking area would be visible to the west of the café. Channelization to provide turning movements and associated roadway signage would be part of a new access road to the Café property.

The two proposed changeable message signs (CMS) approximately 350 to 550 feet west of the Jack Ranch Café would adversely affect the visual character and quality of the Café setting by causing a loss of rural character and visual quality to the Jack Ranch setting.

Cumulatively, this project will not substantially detract from the total visual experience for the highway user along this route. The regional landscape can accommodate the proposed additional lanes, pavement width, earthwork and structures associated with this project without losing a substantial degree of noticeable visual quality.

Avoidance Minimization and Mitigation Measures

For consistency, the minimization measures below coincide with the visual resource measures listed in Chapter 6 of the 2006 EIR/FONSI. These measures were written to apply to all *Corridor Project* Sections. A strikethrough across a measure indicates that this measure does not pertain to the Cholame Section because it has either already been implemented in a previous project section or is a measure that is specific to the future Wye Section.

Minimization Measure 1 – Steepen constructed slopes at spot locations, if necessary, to save existing trees/woodlands.

Impact/reason for minimization measure – to reduce the amount of adverse visual impact.

Minimization Measure 2 – Replace all trees removed as part of the project at the ratio designated by the District Landscape Architect.

Impact/reason for minimization measure – To reduce the amount of adverse visual impact.

BMP 3 – Replant trees required as mitigation within the highway right-of-way to the greatest extent possible.

Impact/reason for BMP measure – To maintain the beauty of the highway corridor and to provide screening of the highway for viewers who live adjacent to the highway.

Minimization Measure 4 – Use slope-rounding techniques on all slopes.

Impact/reason for minimization measure – To minimize the contrast between the natural topography and the built environment of the highway in order to reduce the visual impact associated with a change in the highway configuration.

Minimization Measure 5 – Eliminate or minimize slope-benching on all slope design.

Impact/reason for minimization measure – To reduce the severity of the visual impact associated with the change in the built environment from a rural two-lane highway to the larger expressway.

Minimization Measure 6 – Apply erosion control to all disturbed slopes.

Impact/reason for minimization measure – To reduce the chance of erosion during high winds or storm events. Substantial erosion would cause a greater visual impact than well-constructed slopes.

Minimization Measure 7 – Design all guard rails, barrier, and other fixed objects to reduce the requirement for installation of crash cushion arrays.

Impact/reason for minimization measure – To reduce the visual impact associated with fixed object end treatments and to maintain the rural feel of the project area.

Noise Barrier Measures (Measures 8-16 below apply to sections of the Corridor Project that have already been constructed and therefore are shown with a strikethrough)

~~Minimization Measure 8 – Receptor 1[16] – Estrella Section, Alternatives 8N and 9N. Noise impact minimization measures include retaining as much of the existing landform as possible. If possible, this should be done by steepening the proposed cut slope.~~

~~Minimization Measure 9 – Receptors 4b and 5, Barrier 2 – Estrella Section, Alternatives 8N and 9N. Noise impact minimization measures recommend the construction of a 759 meter long by 2 meter tall (2,490 feet long by 6 feet tall) earthen berm. The berm should be designed to appear as a naturally-occurring landform. This can be accomplished by constructing side slopes of 1:3 (vertical to horizontal), contour grading the form, subtly varying the alignment, and including minimal native planting to blend the berm in with the surroundings.~~

~~Minimization Measure 10 – Receptor 16, Barrier 6 – Estrella Section, Alternatives 8N and 9N. Noise impact minimization measures recommend the construction of a 85 meter long by 3 meter tall (280 feet long by 10 feet tall) soundwall. A wall along the highway at this location would adversely affect the rural character of the area. It is recommended that a combination wall and berm should be constructed to reduce the perceived size of the wall. Native-looking planting should be included to transition the wall into its setting. *Note: Sound wall was not desired by affected resident and will not be constructed.*~~

~~Minimization Measure 11 – Receptor 17 – Shandon Section, Alternatives 1 and 2. Noise impact minimization measures include retaining as much of the existing landform as possible. No impact to visual resources would occur as long as the slope is not over-steepened and if successful erosion control measures are applied~~

~~*Location-specific measures to minimize visual impacts*~~

~~Impact/reason for minimization measure – The following minimization measures (12 – 32) are required to reduce the amount of negative visual impact.~~

~~Minimization Measure 12 – Near Hunter Ranch Golf Course (approximate kp 53.4) (pm 33.3): Plant oak trees and native shrubs along the eastbound roadside in the vicinity of the Hunter Ranch Golf Course to screen views of the highway.~~

~~Minimization Measure 13 – The Estrella River Bridges (approximate kp 63.8/64.0) (pm 39.8/40.0): Construct the bridges with Type 80 bridge rail.~~

~~Minimization Measure 14 – The Estrella River Bridges (approximate kp 63.8/64.0) (pm 39.8/40.0): If Estrella Section, Alternative 8N is selected, apply aesthetic treatment to slope paving in the vicinity of Estrella Road and on bridge columns.~~

[16] Please see the Noise Section in this document, Section 3.1.5, for a description of the receptor, barrier, and recommended noise minimization measure.

~~Minimization Measure 15 – The Estrella River Bridges (approximate kp 63.8/64.0) (pm 39.8/40.0): Engineer the bridge structures with as thin of a bridge deck as possible.~~

~~Minimization Measure 16 – The Estrella River Bridges (approximate kp 63.8/64.0) (pm 39.8/40.0): Plant appropriate native trees and shrubs on the embankment slopes at the Estrella River Bridge to reduce visibility of the highway facility.~~

Minimization Measure 17 – Proposed cut approximately ~~1.9 km~~ (1.2 mi) east of Cholame Creek Bridge #49-29 ~~(approximate kp 83.0) (~~pm 51.9~~)~~: Contour-grade the landform remnant ~~near Station 203~~ between the two proposed road alignments with maximum side-slopes of 1:3 to appear as a naturally occurring landform.

~~Minimization Measure 18 – The Jack Ranch Café (approximate kp 86.3) (pm 54.0): At the Jack Ranch Café, plant trees along the eastbound roadside to re-create the windrow appearance lost as part of the road construction.~~

~~Minimization Measure 19 – The Jack Ranch Café (approximate kp 86.3) (pm 54.0): Plant screening shrubs between the proposed Jack Ranch Café parking lot and the proposed highway.~~

Measures 18 and 19 no longer apply to the Cholame Section because the new proposed highway alignment would be situated to the north (backside) of the Jack Ranch Café property where there are existing mature trees between the café building and the new proposed alignment.

Minimization Measure 20 – Repair and improve the existing James Dean Memorial to enhance its setting.

Minimization measures 21 – 25 have been stricken out because they are to be implemented in the future Wye Section and do not pertain to the Cholame Section.

~~Minimization Measure 21 – The Wye Alternatives (approximate kp 88.0/88.8) (pm55.0/55.5): Wye Section, Alternatives 7, 8, or 9 – Investigate moving the interchange and realign State Route 41 approximately 100 meters to the east of the location currently proposed. This would cause State Route 41 north of the interchange to follow an existing "saddle" in the topography rather than cross the top of a minor ridgeline, as currently designed.~~

~~Minimization Measure 22 – Wye Section, Alternative 8b – Along the existing State Route 41 alignment near STA 28+00 to 30+00, reestablish the original ridgeline landform after the existing road is removed.~~

~~Minimization Measure 23 – Wye Section, all alternatives – If slope paving is required under the structure(s), use natural-appearing surface treatment or apply color and/or texture to the concrete to blend with the existing rural visual character.~~

~~Minimization Measure 24 – Wye Section, all alternatives – Contour-grade all slopes to achieve the appearance of a naturally occurring landform.~~

~~Minimization Measure 25 – Wye Section, all alternatives – Apply erosion control to all areas disturbed by construction.~~

~~Impact/reason for Minimization Measure – The following measures (26 – 29) are intended to reduce adverse visual impacts associated with the Wye section.~~

Minimization Measure 26 – Construct all slopes as flat as possible.

Minimization Measure 27 – Where required, construct wildlife exclusion fencing a minimum of ~~30 meters (~~98 feet~~)~~ from the highway or use earthen berms to screen visibility of fencing.

The following mitigation measures constitute a continuation of the visual measures listed in Chapter 6 of the 2006 EIR/FONSI and are specific to the Cholame Section. These measures would be incorporated into the project in order to maintain the visual quality of the corridor and to minimize visual impacts as a result of the proposed change to the highway alignment and added project features.

Mitigation Measure 28 – Roadside berms shall be minimized to the greatest extent possible.

Mitigation Measure 29 – Roadside berms, where required shall not exceed five-feet above the elevation of the adjacent highway lane so that views are not blocked. Berms shall have undulating profiles, footprints and side slopes to replicate a natural landform and shall be planted with shrub species or grasses native to the Cholame Valley.

Mitigation Measure 30 – The existing notch in the landform at approximately PM 51.8, and the remnant cut slope at PM 53.5 shall be backfilled and recontoured to eliminate the notched and remnant landforms and to blend with the natural topography.

Mitigation Measure 31 – Preserve existing trees to the greatest extent possible.

Mitigation Measure 32 – Color concrete barrier, end treatment crash cushions, and the concrete portable scale slab associated with the proposed CHP inspection station.

Mitigation Measure 33 – Relocate the Changeable Message (CMS) Sign system to an area west of the new alignment station 1275 + 00 (change to PM)

Mitigation Measure 34 – color the entire CMS system (including but not limited to frames, poles, truss systems, catwalks, ladders and associated hardware). Coloring shall also include the front and side frames and back panel of the State-furnished electronic sign panel itself.

Mitigation Measure 35 – Color any required camera poles and equipment cabinets, if cameras are subsequently required as part of the project

Mitigation Measure 36 – Color all the following roadside concrete elements:

- Concrete vegetation control
- Concrete pipe downdrains
- Concrete overside drains
- Concrete ditch lining

Mitigation Measure 37 – Color all exposed rock slope protection (RSP) and visible concrete associated with drainage structures from PM 50.7 to PM 51.0

Mitigation Measure 38 – Backfill the bottom of the RSP channel from PM 50.7 to PM 51.0 with soil and plant with erosion control.

Mitigation Measure 39 – All RSP drainage structures located with landform graded slopes shall be backfilled with soil and receive erosion control treatments.

3.3.2 Farmland Resources

Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, 7 United States Code [USC] 4201-4209; and its regulations, 7 Code of Federal Regulations [CFR] Part 658) require federal agencies, such as the Federal Highway Administration (FHWA), to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

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

Affected Environment

The following analysis regarding farmland impacts as a result of the Cholame North Modified Alternative (Option A) is derived from information obtained from the Natural Resources Conservation Service, the California Department of Conservation and the San Luis Obispo County Planning and Building Department.

Agriculture continues to be a major component of the economy and culture of San Luis Obispo County. San Luis Obispo County encompasses over 3,300 square miles of land (2.1 million acres). Farmland comprises 257,935 acres (12.1%) of the total land in the county.

Land use surrounding the Cholame Section is zoned rural agricultural. The existing State Route 46 alignment within the Cholame Section has farmland on both sides of the highway facility. Most of the land adjacent to the Cholame Section is grazing land with approximately 25% being dry farmed for production of field crops.

Table 3.3.2-1 has been updated from the 2006 EIR/FONSI with the most recent economic information regarding agricultural production in San Luis Obispo County. New information added to the table came from the San Luis Obispo County Department of Agriculture 2017 Annual Report.

Table 3.3.2-1: Dollar Value (millions) of each major agricultural industry

Type of Crop or Industry	Animal Industry	Field Crops	Nursery Crops	Fruit & Nut Crops	Vegetable Crops	Total
2006 EIR/FONSI Dollar Value Countywide	$36.031	$16.296	$82.853	$122.450	$135.393	$393.023
2017 Dollar Value Countywide	$47.909	$16.679	$82.802	$566.592	$210.716	$924.698

Federal Farmland Classification

The federal process for assessing farmland impacts is guided by the provisions of the Farmland Protection Policy Act, which calls for completion of Form CPA-106 Farmland Conversion Impact Rating for Corridor Projects. The updated form dated April 16, 2018 can be found in Appendix J of this Supplemental Draft EIR/Updated EA).

The United States Department of Agricultural Natural Resources Conservation Service (UADA-NRCS) office, located in Templeton, assisted in the completion of Form CPA-106 for the new proposed Build Alternative. The Templeton office of the NRCS also used the USDA Web Soil Survey database to develop a map (Figure 3.3.2-1) identifying soil type and the federal farmland classification within a 1-mile radius (Total Area of Interest) of the proposed Build Alternative.

The Total Area of Interest (AOI) encompasses 8,607 acres. Of the 8,607 acres, 63.4% (5,446 acres) of the land is classified as “Not prime farmland” (shown in red in Figure 3.3.2-1). Not prime farmland can be defined as land which is composed of soils that do not support prime farmland, farmland of statewide or local importance or unique farmland. 26% (2,216 acres) of the farmland within the AOI is composed of prime farmland, if irrigated (shown in yellow in Figure 3.3.2-1), and 9% (780 acres) is classified as farmland of statewide importance (shown in blue in Figure 3.3.2-1). The remaining 1.5% of land within the AOI is composed of bedrock or waterways.

According to the April 16, 2018 NRCS form CPA-106,141 acres of statewide and local important farmland would be converted to state highway right-of-way. The 2006 EIR/FONSI found that approximately 12 acres of prime farmland would be permanently removed as a result of the Cholame alternative. However, the 2018 CPA-106 form prepared by the NRCS did not identify any prime farmland within the project limits due to the lack of irrigation.

Farmland of statewide or local importance is farmland other than prime or unique, that is of statewide or local importance for the production of food feed, fiber, forage or oilseed crops, as determined by the state. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for the production of food feed, fiber, forage or oilseed crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops.

California Farmland Classification

In California, farmland is classified under the Farmland Mapping and Monitoring Program (FMMP). This classification is based on the lands physical and chemical characteristics.

According to the California Department of Conservation County Land Use Conversion Table, San Luis Obispo County reported a total of 1,586,355 acres of agricultural land in 2016. Of that total, 1,189,168 acres of grazing land was identified, and the remaining 397,187 acres was identified as important farmland, which includes, Prime Farmland; Farmland of Statewide Importance; Unique Farmland and Farmland of Local Importance.

Within the Total Area of Interest (AOI), the FMMP 2016 GIS layer was used to analyze state farmland classification and acreage. Figure 3.3.2-2 identifies FMMP classifications within the AOI. As depicted in Figure 3.3.2-2, 5,546 acres of land within the AOI is composed of grazing land and 31% (2,635 acres) is identified as farmland of local potential. The remainder is identified as farmland of local importance, urban and built-up land and other. Farmland of local potential is defined as lands having the potential for farmland, which have prime or statewide characteristics but are not cultivated.

In comparing Figures 3.3.2-1 and 3.3.2-2, the area identified by the California Department of Conservation as farmland of local potential (2,635 acres) is very similar to, but exceeds the area defined by the NRCS as prime farmland if irrigated. Therefore, the area identified in the FMMP map (Figure 3.3.2-2) as farmland of local potential was considered statewide or locally important farmland as described in the NRCS form CPA-106. This consideration assumes a worst-case scenario for assessment of farmland impacts.

Agricultural Preserves and Williamson Act Lands

An agricultural preserve defines the boundary of an area within which a city or county will enter into Williamson Act contracts with landowners. The Williamson Act of 1965 is the state's principal policy for the preservation of agricultural, open-space, and range land. The program encourages landowner to work with local governments to protect important farmland and open space. Landowners can enroll parcels for a minimum of 10 years. This program helps local governments to restrict land to agriculture and compatible open-space use. In doing so, land is assessed for property taxes at a rate consistent with its actual use, rather than the potential value of the land. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space and preservation and efficient urban growth.

One third of the of the land in San Luis Obispo County (Over 785,000 acres) of land is protected by the Williamson Act program (San Luis Obispo County Williamson Act Policy Guide, 2017). The majority of the land surrounding the Cholame Section is either under Williamson Act Contract or in Agricultural Preserve. Several parcels within the project limits are encumbered by a Williamson Act preserve contract. Figure 3.3.2-3 identifies parcels under Williamson Act Contract and those under Agricultural Preserve that are adjacent to the existing and proposed alignment as well as those that would be intersected by the Cholame North Modified Alternative (Option A).

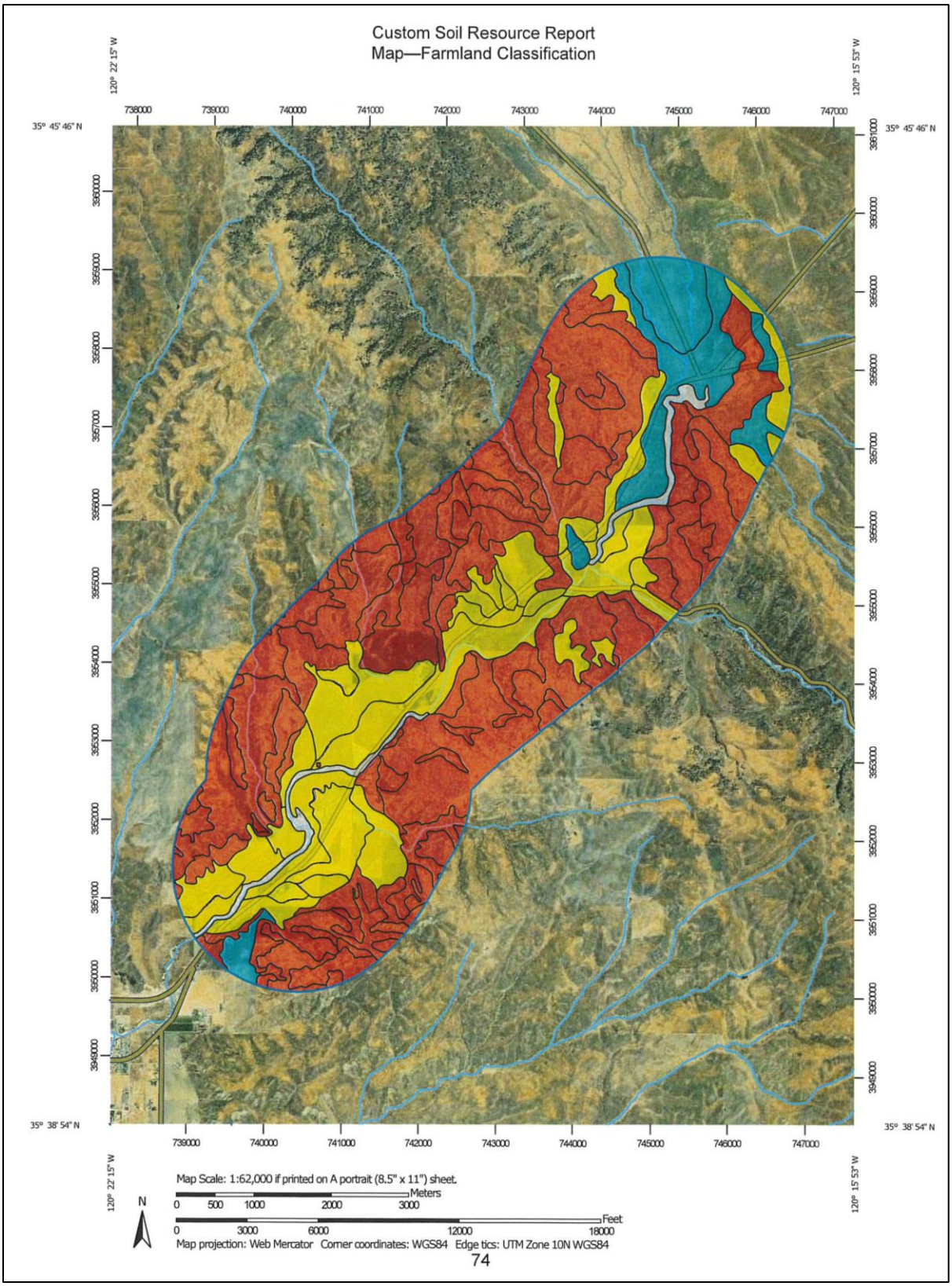


Figure 3.3.2-1: NRCS Farmland Classificaiton Map

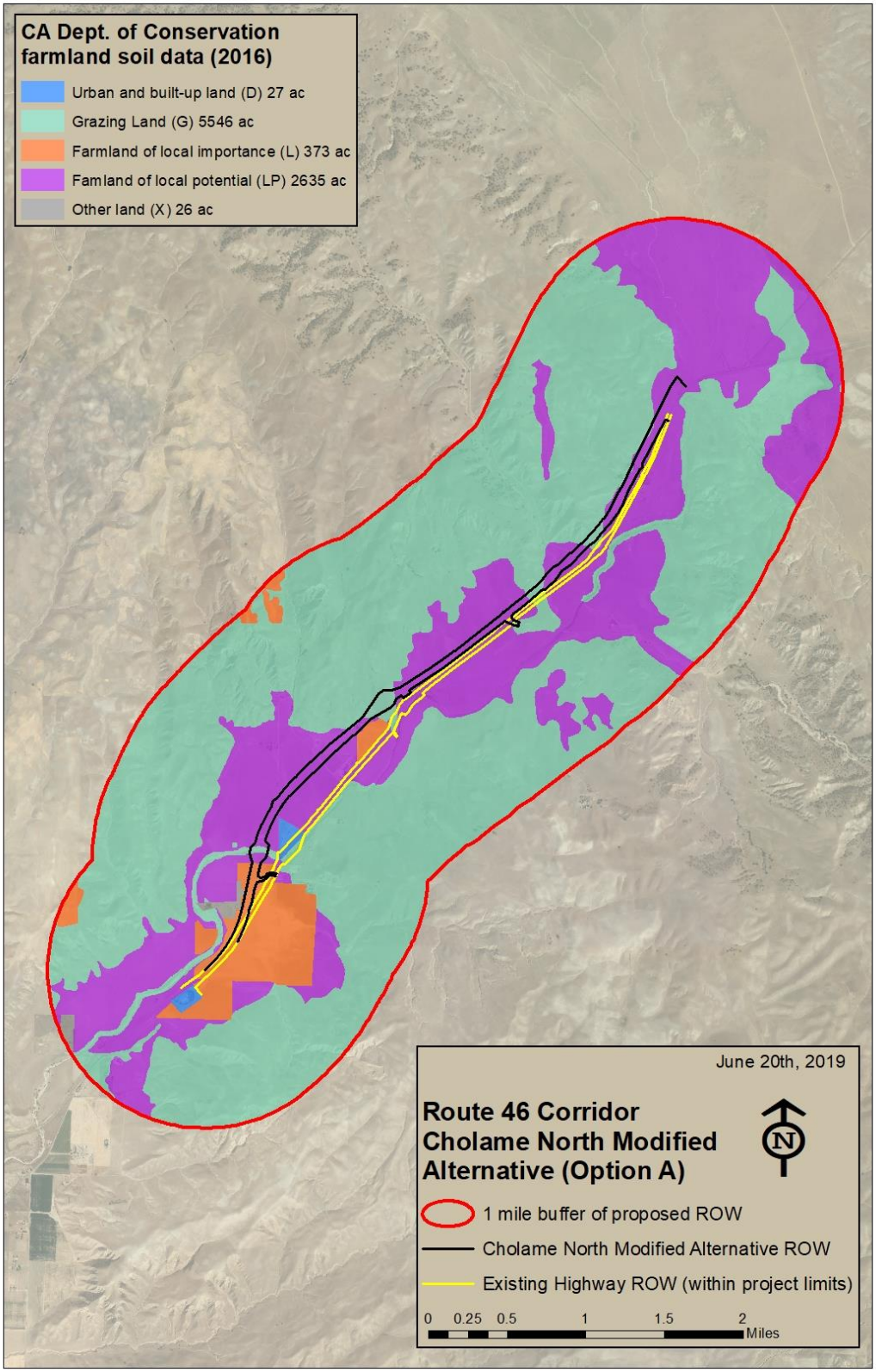


Figure 3.3.2-2: FMMP Farmland Classification Map

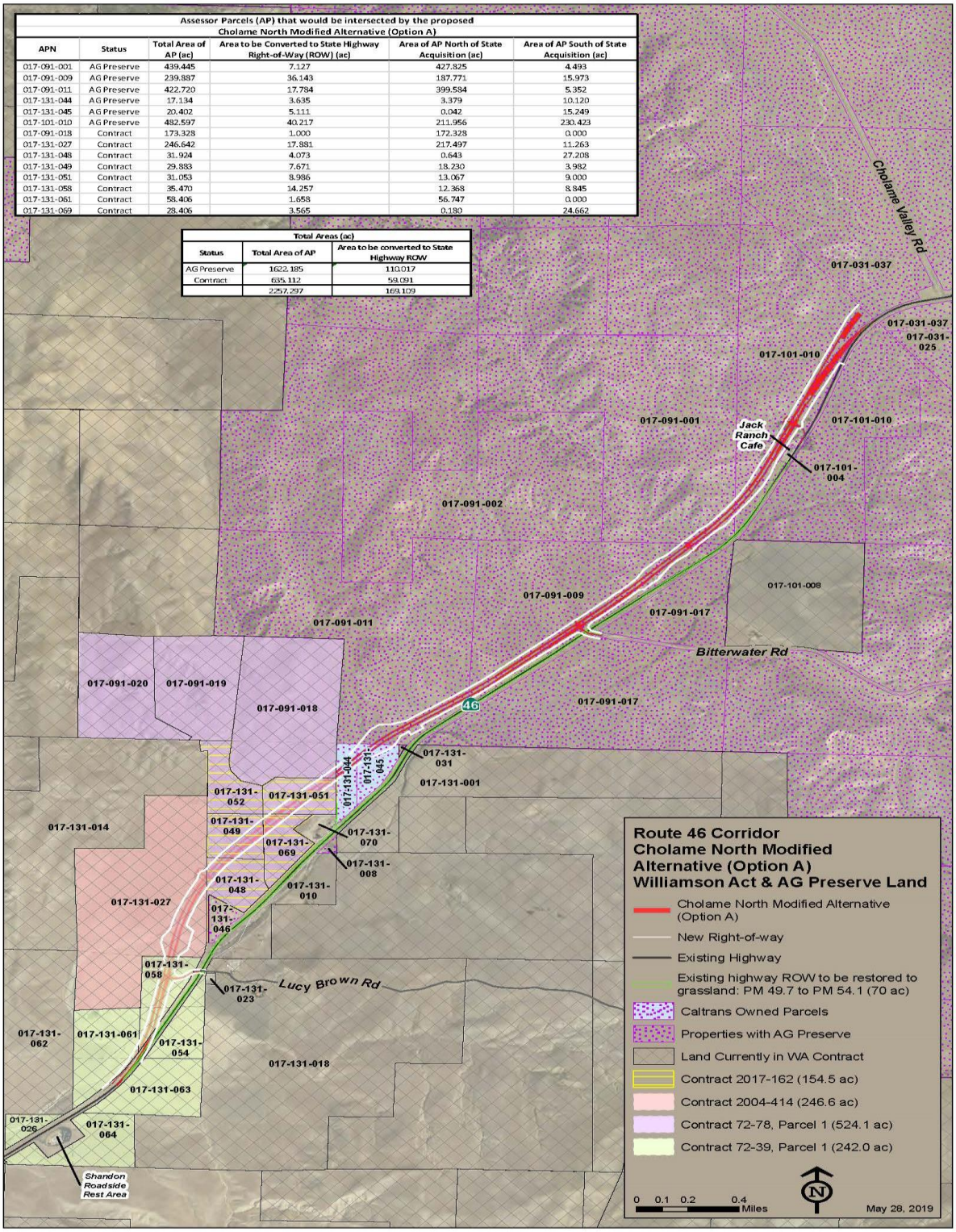


Figure 3.3.2-3: Land Under Agricultural Preserve and Williamson Act Contract-Cholame Section

Environmental Consequences

Construction of the Cholame North Modified Alternative (Option A) would result in the conversion of 169.1 acres of farmland into state highway right-of-way and intersect several assessor parcels held under Williamson Act contract (see figure 3.3.2-3).

An NRCS Form CPA-106 (Farmland Conversion Impact Rating for Corridor Projects) was completed to evaluate farmland impacts as a result of the new proposed Build Alternative. The site assessment evaluation is based on criteria, such as the percent of a site being farmed, the protection provided by state and local governments, and the availability of agricultural support services nearby. The form assigns the affected farmland a combined score of up to 260 points, composed of up to 100 points for relative value and up to 160 points for the site assessment. A score of 160 points is used as the minimum impact rating indicator for the Natural Resources Conservation Service and others to evaluate and consider the impacts to farmland as a result of a proposed alternative. For scores 160 and above, there is the potential for an adverse impact.

During preparation of the 2006 EIR/FONSI, Form NRCS-CPA-106 was completed to compare the farmland impact rating between the two Cholame Section Alternatives under consideration at that time (Cholame Alternative 1 and Cholame Alternative 2). The 2006 form can be found in Volume II, Appendix F of the 2006 EIR/FONSI.

In April 2018, an updated NRCS-CPA-106 form was submitted to the Natural Resources Conservation Service office in Templeton (Appendix D).

The proposed Build Alternative would result in a Farmland Conversion Impact Rating score of 149 points. NRCS farmland conversion guidance indicates that “sites receiving a total score of less than 160 need not be given further consideration for protection and no additional sites need to be evaluated”.

Table 3.3.2-2 Conversion Impact Rating Score 2006 vs. 2018

	Project Alternative	Relative Value of Farmland	Total Corridor Assessment	Total Points
2006 CPA-106	Cholame Alternative 1 (2006 Preferred Alternative)	81	75	156
2018 CPA-106	Cholame North Modified Alternative (Option A)	79	70	149

A total of 168.7 acres of farmland would be converted into transportation use. Form NRCS-CPA-106 identified 141 acres of this land as statewide and local important farmland. This represents a 0.06% reduction in countywide totals of statewide and local important farmland and a 0.001% reduction in statewide totals.

There are four Williamson Act Contracts within the limits of the Cholame North Modified Alternative (Option A). A total of eight assessor parcels held under Williamson Act contract will be intersected by the proposed Build Alternative. A combined total of 59.09 acres of farmland encumbered under Williamson Act contract would be impacted by the proposed Build Alternative. This impact represents a 0.00008% reduction in countywide totals of Williamson Act contract lands.

Several of the parcels encumbered by Williamson Act contract are required to maintain a minimum parcel size of 40 acres. Conversion of portions of these parcels for transportation purposes will result in reducing some parcels to below the minimum parcel size defined by the contract. Therefore, the project has the potential to cause several parcels to fall out of Williamson Act contract.

Parcels under Williamson Act contract that are able to maintain the minimum parcel size following state acquisition would have their contracts amended during the right-of-way process.

According to CEQA Guidelines, Section 15206, cancellation of Williamson Act contracts for parcels exceeding 100 acres is considered to be “of statewide, regional or area wide significance.” The proposed Cholame North Modified Alternative (Option A) does not put any parcels of 100 acres of more at risk of Williamson Act contract cancelation.

Several parcels that would be intersected by the proposed Build Alternative would be left with small slivers of land on either side of the new highway alignment (see table in Figure 3.3.2-3). These small fragments may no longer be suitable for continued farming practices. Loss in market value to the remainder of these parcels will be assessed during the right-of-way acquisition process and every reasonable effort will be made to ensure that the property owner does not suffer damages to the remainder of their property. If the assessed damage is higher than the value of the parcel in its entirety, the state will likely acquire the parcel in full.

The State Route 46 corridor is a critical interregional route for moving freight, especially agricultural related products. It is the most viable and active east-west corridor connecting the Central Coast to the San Joaquin Valley between US 101 and Interstate 5 (I-5), as well as the local communities and agricultural processing facilities carrying products between the Central Valley and the rest of the nation via I-5 and two Class 1 rail lines. Once implemented, the proposed Build Alternative would benefit agricultural businesses within the corridor by providing improved transportation conditions and more efficient movement of goods and services.

Avoidance Minimization and Mitigation Measures

While the proposed Cholame North Modified Alternative (Option A) would convert farmland of statewide importance to transportation use and conflict with land currently held under Williamson Act Contract, this conversion represents a relatively small area 0.001% reduction of statewide important farmland and 0.00008% reduction of total area in the county held under Williamson Act contract.

Access to farmland on both sides of the proposed expressway would be achieved by providing left turn channelization at intersections and access points in the median to accommodate turning radii for large vehicles, including farm equipment. Greater shoulder widths would be constructed, providing additional room in the event that farm equipment must pull off of the proposed expressway. The existing highway from the beginning of the project (PM 49.7) up to the Jack Ranch Café (PM 54.1) will be removed and revegetated with native grasses, resulting in restoration of approximately 70 acres of potential farmland. Following completion of the project, this land will be appraised and sold at public auction or to an adjoining property owner.

3.3.3 Cultural Resources

Regulatory Setting

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

Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the ACHP, the California State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The Programmatic Agreement (PA) implements the ACHP’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA’s responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code (PRC) Section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term "tribal cultural resources" to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.

PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires the Department to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding (MOU) between the Department and SHPO, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 PA will satisfy the requirements of PRC Section 5024.

Affected Environment

The effort to identify historic properties within the projects Area of Potential Effect (APE) included a search of pertinent documents and records, followed by field surveys. The results of these efforts are discussed below and are documented in the Historic Property Survey Report and Supplemental Archaeological Survey Reports from 2017 and 2018 (Haydu, 2018).

The proposed Build Alternative would convert the existing two-lane highway to a divided four-lane expressway, on SR 46 in eastern San Luis Obispo County. The change to the highway alignment associated with the proposed Build Alternative, required a change to the APE. The original APE included the maximum proposed right-of-way, in addition to a 49-foot buffer that would accommodate necessary construction easements and utility relocation. The supplemental (extended) APE is immediately adjacent and north of the original study area. It includes the entire project footprint, including current and proposed state right-of-way, temporary construction easements and staging areas. The majority of the land is utilized for agricultural and ranching operations with occasional homesteads.

The archaeological survey conducted in 1999 within the original APE identified CA-SLO-1927/H as a prehistoric habitation site and historical homestead on an alluvial fan

at the base of the Cholame Hills (Grover et al. 1999). The prehistoric component of the site (Locus A) is eligible for the NRHP/CRHR under Criterion D/4 (Berg and Hildebrandt 2000; Kiaha 2003). The survey found a low-density surface scatter of lithic debitage and ground stone and identified the site as a prehistoric habitation area and possibly the location of the ethnohistoric village of *Tisagues*. The historical component contains concrete structural remains, ranch fencing, a stock pond, and a scatter of domestic and agricultural debris that dates to the early and mid-twentieth century.

The prehistoric component (Locus A) includes an accumulation of flaked and ground stone tools, bone implements, and floral and faunal remains. Although much of the deposit has been heavily disturbed by modern earth moving equipment and the actions of burrowing rodents, a small, relatively intact portion of the site produced obsidian hydration data reflecting a single-component occupation dating to the central coast Early Period (5500-3000 B.P.). Extended Phase I/Phase II testing and evaluation was completed in 2000 (Berg and Hildebrandt 2000) and recommended Locus A eligible for listing in the National Register of Historic Places (NHRP) under Criterion D. Due to its chronological integrity, ability to address research issues regarding Early Period land-use patterns, and the origin of the interregional exchange of obsidian in central California, SHPO concurred on November 26, 2001. Criterion D references eligible sites that are important based upon the information about the past that they can provide.

The historic component represents a twentieth-century site associated with a nearby highway cafe, mid-century ranch residence, and ranching activities. The site includes a cement foundation associated with a 1920 residence and miscellaneous pieces of non-diagnostic glass, metal, and ceramic. The historic component lacks integrity and does not have the information necessary to address questions important to regional history. On April 3, 2002 SHPO concurred that the historic portion of CA-SLO-1927/H is not eligible for the NRHP.

The James Dean Memorial, adjacent to the Jack Ranch Café, was previously evaluated in 2001. The memorial was determined not eligible for the NRHP because of its age (built in 1977) and because it is primarily commemorative in nature. However, it is considered a significant resource for the purposes of CEQA in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code. The James Dean Memorial was determined to be historically significant under CEQA due to its artistic nature, its association with the state's cultural heritage (the movie industry), its function as a memorial to a person important to California history (James Dean), and its value as a monument with an international reputation,

Results of the archaeological field surveys conducted in 2016, within the supplemental APE, determined that there were no additional cultural resources contained within the Cholame Section and concluded that the only cultural resources within the supplemental and the original APE are CA-SLO-1927/H and the James Dean Memorial.

Notification of Interested Parties

During the preparation of the 2006 FIER, various members of the public were notified and consulted regarding the cultural resources studied for the larger State Route 46 Corridor Improvement Project. This outreach effort is further described in the 2006 EIR/FONSI on page 148 under “Notification of Interested Parties”.

Letters to Salinan groups and individuals were mailed on August 8, 2018 requesting continuing consultation based upon proposed changes to the original Cholame Alternative 1 alignment which have the potential to result in an Adverse Effect to CA-SBA-1927/H Locus A. Adverse effects are defined as the direct or indirect alteration of the characteristics that quality a historic property for inclusion in the NRHP.

Environmental Consequences

Under Section 106 of the National Historic Preservation Act, Caltrans, acting on behalf of the Federal Highway Administration (FHWA) as assigned under (23 United State Code [USC] 327) must take into account the effects of their undertakings on historic properties. Caltrans determined a Finding of Adverse Effect for the Route 46 Corridor Improvement Project—Cholame Section and has obtained concurrence from SHPO on October 17, 2018.

The project identified a prehistoric archaeological resource contained within the supplemental project APE. CA-SBA-1927/H Locus A has been identified as an accumulation of flaked and ground stone tools, bone implements, and floral and faunal remains, with obsidian hydration data reflecting a single-component occupation dating to the central coast Early Period. The site’s chronological integrity and ability to address research issues regarding Early Period land-use patterns to the site’s NRHP eligibility.

Construction activities related to the proposed Build Alternative have the potential to cause physical destruction or damage to portions of the historic property. Overall, the project (undertaking) as a whole has an adverse effect on historic properties.

No impacts to the James Dean Memorial would occur as a result of the proposed Build Alternative.

Avoidance, Minimization and Mitigation Measures

Caltrans finds that there is a historic property affected pursuant to Programmatic Agreement Stipulation IX.B. The undertaking will have an adverse effect on CA-SLO-1927/H Locus A located within the APE, and Caltrans is consulting to resolve adverse effects pursuant to Programmatic Agreement Stipulation X, 36 CFR 800.6(a).

Adverse effects to CA-SLO-1927/H Locus A will be mitigated through a program data recovery. A Finding of Effect (FOE) document was prepared to fully evaluate project effect on the features (flaked and ground stone tools, bone implements, and floral and faunal remains) of the pre-historic site that contribute to its eligibility for listing in the NRHP under Criterion D. Data recovery is an important measure that is implemented to mitigate adverse effects to an archaeological site when there is no feasible

alternative to avoid the resource. Data recovery (or Phase III study) is an excavation program designed to recover the materials to capture information about the past that would be lost as a result of the project. The data recovery consists of preparation of a proposal for fieldwork and analysis, fieldwork, laboratory work and analysis, and reporting the study's results.

The potential contribution of a prehistoric site to archaeological research can be preserved, at least in part, through a Memorandum of Agreement (MOA). The MOA will be prepared in consultation with Native American representatives and the SHPO. The MOA will outline mitigation measures (Archaeological Treatment Plan) to be implemented to reduce the adverse effect to Locus A, the eligible component of CA-SLO-1927/H. After the Memorandum of Agreement (MOA) with the SHPO is executed, field investigations will commence.

Prior to ground disturbance, Caltrans will initiate a contract with an on-call archaeological consulting firm to recover the features of the pre-historic site that contribute to its eligibility for listing in the NRHP (flaked and ground stone tools, bone implements, and floral and faunal remains). The artifacts will then be cataloged, recorded and stored to provide for the ability to address several local and inter-regional research issues.

An Archaeological Treatment Plan will be attached to the MOA, developed in consultation with Native American representatives and SHPO. Yearly reports documenting the fulfillment of commitments outlined in the MOA will be submitted to SHPO. Procedures for fieldwork, laboratory analysis, and reporting, as well as procedures for archaeological monitoring, are detailed in the Archaeological Treatment Plan.

The following measures will be implemented in order to mitigate adverse effects:

Mitigation Measure 1– Monitoring by a Native American tribal representative from the Salinan Tribe will be required during all ground-disturbing activities and water screening associated with data recovery excavations. The archaeological contractor will provide at least five (5) working days advance notice before requesting a monitor and will coordinate schedule with the monitor on a daily basis after monitoring starts.

Mitigation Measure 2– Monitoring by a qualified archaeologist and a Native American tribal representative is required for all ground-disturbing activities during construction. The archaeological and Native American monitors must be notified at least five (5) working days in advance of the start of construction to ensure availability.

Mitigation Measure 3– If an unanticipated archaeological deposit is identified, construction personnel and equipment will be temporarily excluded from working within 30 meters of the discovery until cultural materials can be properly assessed, documented, and/or recovered.

Mitigation Measure 4– If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

Mitigation Measure 5– If human remains are discovered, California Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent (MLD). The person who discovers the remains will contact District 5 Environmental Branch, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

3.3.4 Land Use, Planning and Growth (Incorporate by Reference)

3.3.5 Populations, Communities and Housing (Incorporate by Reference)

3.3.6 Public Services (Incorporate by Reference)

3.3.7 Transportation and Traffic (Incorporate by Reference)

3.3.8 Utilities and Service Systems

The proposed Build Alternative has been designed to reduce impacts to utilities, thereby reducing the linear footage of oil and gas pipeline relocation and associated potential hazardous waste concerns. For additional information regarding utility relocation please refer to Section 3.1.3 (Hazardous Waste).

3.4 Borrow Sites, Disposal Sites and Construction Staging Areas

Borrow/Disposal Sites

The proposed Build Alternative is considered a “balanced project” meaning that the project has been designed to make use of all excavated material, eliminating the need to import fill or export excess material.

Construction Staging Areas

The project contractor is required to secure, at the contractor’s expense, areas required for equipment and material storage and concrete batch plant(s). No area is available within the contract limits for the exclusive use of the Contractor. However, temporary storage of equipment and materials on State property may be arranged with the Resident Engineer (RE) approval, subject to the prior demands of State

maintenance forces and to other contract requirements. If the contractor is proposing to use an area outside of the state right-of-way, the following documentation must be submitted to Caltrans for review and approval:

- A site plan, including site limits and access roads
- Final property owner agreement
- Release of liability
- Environmental documentation prepared by an appropriately qualified environmental specialist
- All necessary Permits, Licenses, Agreements and Certifications (PLAC's)
- Final grading plan in conformance with Caltrans Standard Specifications
- Water Pollution Control Plan

3.5 Relationship Between Local Short-Term Uses of the Environment and Maintenance and Enhancement of Long-Term Productivity (Incorporate by Reference)

3.6 Irreversible and Irretrievable Commitments of Resources (Incorporate by Reference)

3.7 Unavoidable Adverse Impacts Irreversible

Unavoidable adverse impacts are defined under CEQA as "where the environmental effect of the proposed project reaches the threshold of significance, but no feasible mitigation is available to reduce the impact to a less than significant level". Unavoidable adverse impacts to a prehistoric archaeological site would occur as a result of the Cholame North Modified Alternative (Option A). For the full discussion of impacts to the prehistoric archaeological site, see Section 3.3.3 (Cultural Resources).

Chapter 4 Cumulative Impacts

4.1 Cumulative Impacts

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

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

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

Methodology

Identification of the resources to consider is the first step in preparing a cumulative impact analysis. A cumulative impact analysis focuses on resources that have the potential to be significantly impacted by a proposed project or on resources that are currently in poor or declining health, even if the potential project impacts are relatively small.

The Cumulative Impact Analysis in the 2006 EIR/FONSI evaluated fifteen resources that have the potential to be adversely impacted by the *Corridor Project*, which includes the Cholame Section. For information regarding potential cumulative affects to these resources, please refer to the 2006 EIR/FONSI, Sections 4.1.1 through 4.1.15.

The changes to the Cholame Section, Cholame North Modified Alternative (Option A) will result in an adverse effect to a prehistoric cultural resource. Therefore, this document will evaluate potential cumulative impacts to cultural resources. This document will also evaluate potential cumulative impacts to three animal species that were not evaluated in the 2006 EIR/FONSI.

The American badger is considered a species of special concern that is in poor or declining health. Impacts to this species were not evaluated in the 2006 EIR/FONSI. The species is known to occur within the project area and therefore discussion of potential direct and cumulative impacts to this species is included in this document under both sections 3.2.4 and 4.1

The pallid bat is considered a species of special concern that is in poor or declining health. The existing Cholame Creek Bridge provides important habitat for this bat species as they use the bridge as a maternity roost. Removal of the bridge will result in direct and indirect impacts to this species and is therefore considered as a resource in this cumulative impact analysis.

Potential impacts to the California tiger salamander were discussed in the 2006 EIR/FONSI but this species was not included in the cumulative impact analysis and is therefore being considered as a resource in the cumulative impact analysis in this document.

Each resource, their associated study areas and a brief description of the historic and current health of the resources are described below in the affected environment section.

Affected Environment

Cultural Resources

Study Area

The geographic extent of a resource cumulative impact analysis is called a Resource Study Area (RSA). The RSA for prehistoric cultural resources is approximately 25,530 acres and encompasses the Cholame Valley, Shandon Valley, and Turkey Flats area in the far northeastern portion of San Luis Obispo County. The RSA is uniquely tied both physically and culturally as an area of transition between the Central Valley and Interior Central Coast. The RSA extent captures the prehistoric archaeological context of settlement, trade, and transition as indicated by the site features found at the prehistoric resource site CA-SLO-1927/H. CA-SLO-1927/H is the prehistoric resource site that would be adversely affected by the proposed Cholame North Modified Alternative (Option A) and contains features such as flaked and ground stone tools, bone implements, and floral and faunal remains. The area in which the proposed project is located lies on the historic boundary between the territories of two native groups: the Salinans and the Tachi Yokuts. It is possible the greater Cholame Valley area, which straddles a major trade/transportation route between the valley and the coast, served as a joint use area for both groups (Applied Earthworks, July 2013). Therefore, the RSA takes into consideration the cultural geography of the Salinan and Tachi Yokut people who occupied the region prehistorically (See Figure 4.1-1).

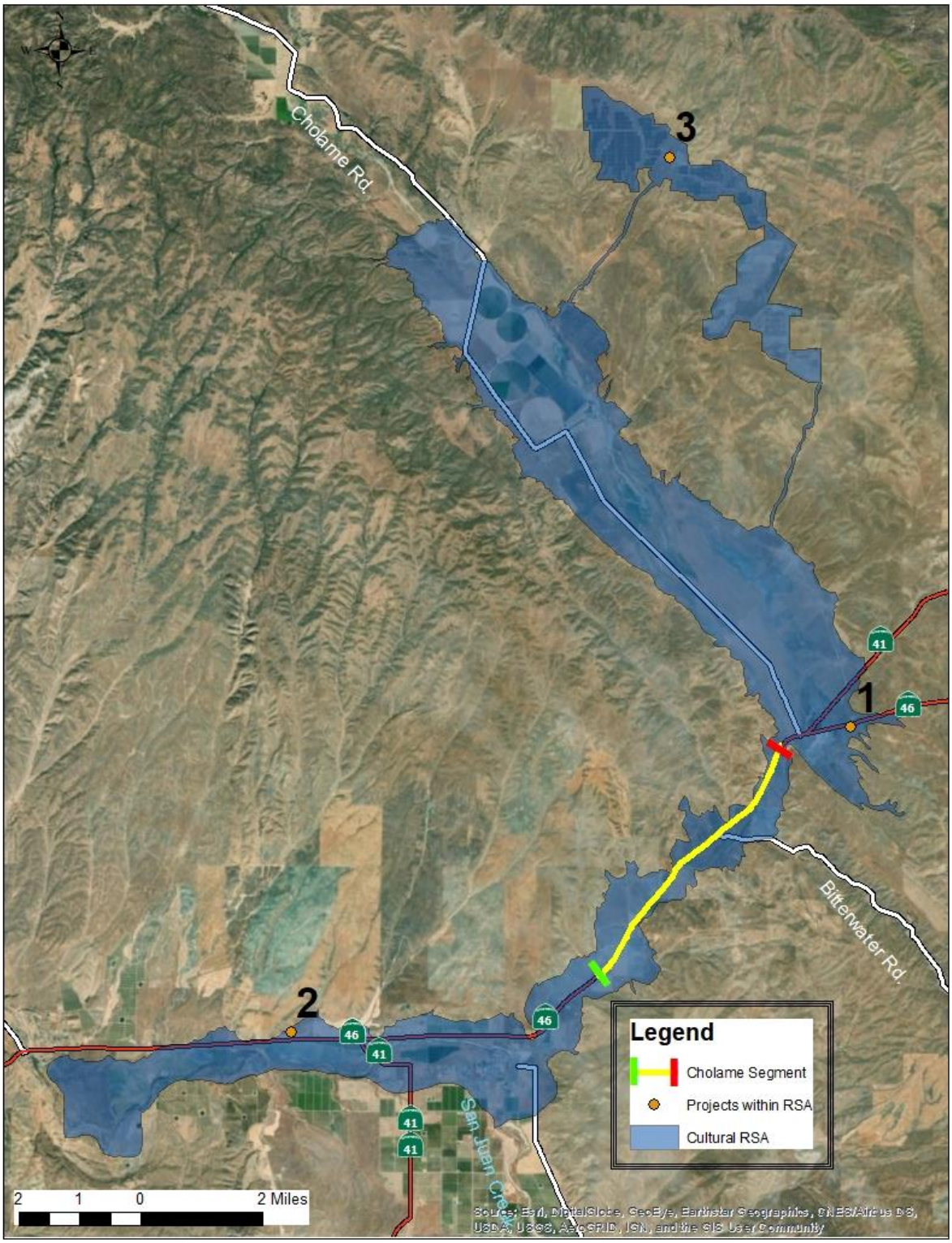


Figure 4.1-1 Cultural Resource Study Area

Current Health

The cumulative analysis considers the integrity of the known resources that make up the cultural heritage of the Salinans and the Tachi Yokuts within the RSA. The condition of these resources varies depending on the influence of various natural and/or human-caused events which can diminish the integrity of a single cultural resource or group of cultural resources. The most apparent impacts on cultural resources in the cumulative analysis are the result of human activities, including the following:

- Settlement, urbanization, and population growth;
- Ranching, agriculture, and silviculture; and
- Development of roads, transmission lines, and other infrastructure.

The primary natural factors affecting the integrity of prehistoric cultural resources within the RSA are erosion, sedimentation, and soil reduction. Often times these natural processes are accelerated by human activity and may increase their impact on prehistoric cultural resources. For example, road construction can destabilize slopes and increase erosion of prehistoric sites; and certain agricultural practices can increase erosion or create other damage to prehistoric cultural resources.

Almost every known cultural resource in the RSA has been affected to some extent by one or a combination of past natural and human interferences. In some cases, effects have been sufficient to damage or destroy the most important qualities of the resource. It is important to note that most of the known cultural resources within the RSA were discovered as a result of recent human development and the precursory surveys or construction monitoring required by State and Federal law. There are likely more than fifteen thousand acres within the RSA which have not been surveyed for prehistoric resources. The health and volume of prehistoric resources in these areas is unknown. However, the Cholame Valley is considered a highly sensitive archaeological area by the County of Monterey.

Environmental Consequences

Four projects, including the proposed Build Alternative considered in this supplemental document have been identified within the cultural resources study area that could contribute to cumulative impacts to cultural resources. Table 4.1-1 provides a list of current and reasonably foreseeable future projects within the cultural resource study area. Information regarding current and reasonably foreseeable future projects was developed by contacting the following agencies: San Luis Obispo Planning Department; California Department of Fish and Wildlife; Regional Water Quality Control Board; U.S. Army Corps of Engineers; Caltrans Transportation Planning Department and Caltrans Encroachment Permits Branch.

Table 4.1-1 Projects Evaluated within the Cultural Resource Study Area

Map Key	Development/Project	Location	Document Type	Potential Impacts to Cultural Resources
1	State Route 46 4-Lane Widening Project "Antelope Grade Section"	State Route 46; Post Mile 55.7/60.9	MND/FONSI	No Anticipated Impacts
2	AT&T Mobility & Devine Conditional Use Permit	5658 Prancing Deer Place, Paso Robles, CA	ND	No Anticipated Impacts
3	California Flats Solar Project	Southeastern Monterey County, southeast of Parkfield, east of Turkey Flats Road and north of State Highway 46	EIR	Less than significant with mitigation

The proposed Antelope Grade Project (Map Key #1) will widen State Route 46 to a four-lane expressway from PM 55.7 to PM 60.9. The westernmost 1.5 miles of the 5-mile project extent is within the RSA. Based on the project's Negative Declaration and Finding of No Significant Impact, there is a prehistoric site (CA-SLO-1355/H) that would be adversely affected by the project. This site is located outside the RSA identified for this cumulative impact analysis. Nonetheless, mitigation in the form of recovery of the site's important information and dissemination of that information to scientific and public audiences is expected to mitigate impacts to less than significant.

The proposed AT&T Mobility & Devine Project (Map Key #2) will disturb approximately 4,160 square feet in order to construct a 60-foot-tall antenna structure. The County of San Luis Obispo Negative Declaration did not identify any prehistoric cultural resources impacts.

The 2,900 acre California Flats Solar Project was completed in 2019 and is currently in operation (Map Key #3). The project EIR documented thirty-nine prehistoric archeological sites within the project disturbance area. Fourteen of the sites were deemed eligible for listing in the NHRP and an additional five sites were assumed eligible because they were not evaluated in EIR. The EIR described implementation of mitigation measures that would reduce anticipated impacts of prehistoric resources to less than significant.

Although the prehistoric resource site (CA-SLO-1927/H) is expected to be adversely affected as a result of the Cholame North Modified Alternative (Option A), the application of specific State and Federal regulations and County policies, actions, and development standards should result in avoidance or minimization of impacts to prehistoric cultural resources from other individual projects within the RSA. Cumulative construction impacts related to known and unknown prehistoric archaeological cultural resources would be similar to that which is described for project-specific impacts and would be addressed on a project-by-project basis. These regulations, policies, and standards require avoidance of significant prehistoric resources whenever feasible; if avoidance is not feasible, then appropriate mitigation measures would be applied. Examples of mitigation include data recovery, capping, public outreach, monitoring of construction activity, and protocols in the case of inadvertent discovery to name but a few. Mitigations measures presented in Section 6.10 of this EIR for the Route 46 Corridor Improvement Project-Cholame Section fall under the suite of accepted mitigation for impacts to archaeological resources. Although proposed measures for CA-SLO-1927/H will not mitigate impacts of the specific resource to less than significant, the net effect of the mitigation measures will lessen the potential of the project's contribution to cumulative impacts within the RSA. Through these actions, the cumulative diminishment of the number of individual prehistoric resources will be mitigated to less than significant and therefore cumulative impacts are considered less than significant.

Affected Environment

Biological Resources

Study Area

The RSA's identified for each species in this cumulative analysis section were created with consideration of known or likely forage and/or dispersal ranges (See Figure 4.1-2).

American Badger: The badger has an average annual home range of 2100 acres (approximately 3.3 square miles). However, badgers have a large and variable range depending on the season and they are not deterred by topography. Therefore, the RSA is composed of a 6.6-mile buffer around CNDDB occurrences for American Badger within the project area. The RSA for American Badger is approximately 130,000 acres.

Pallid bat: The pallid bat forages up to 3 miles from their day roost. Therefore, the RSA is composed of a 3-mile buffer around CNDDB occurrences for pallid bat within the project area (only 3 occurrences in CNDDB). The RSA for pallid bat is approximately 36,000 acres

California Tiger Salamander (CTS): CTS has a maximum dispersal distance of 1.3 miles from breeding ponds. Therefore, the RSA is composed of a 1.3-mile buffer around known and potential CTS breeding ponds identified in the Supplemental NES. The RSA for CTS is 13,500 acres.

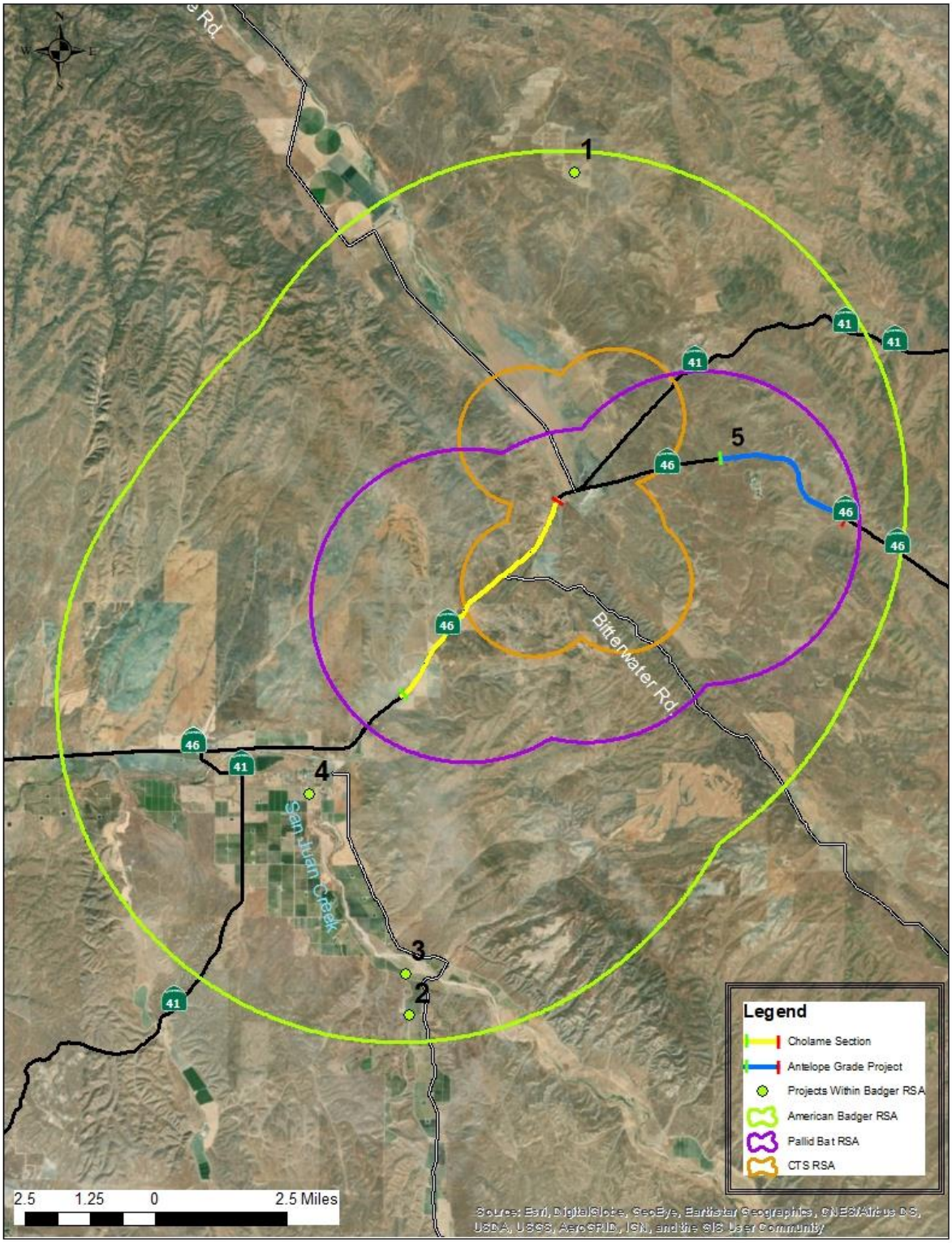


Figure 4.1-2 Biological Resource Study Areas

Current Health

American Badger: Although the health of the American Badger relative to the RSA is unknown, populations have declined drastically in California within the last century (Grinnell et al., 1937; Longhurst, 1940). Grinnell et al. (1937) noted that Badgers were reduced in numbers over almost all of their range in California by 1937. At that time, they were still numerous in the Central Valley, but now they survive only in low numbers in peripheral parts of the valley and adjacent lowlands to the west in eastern Monterey, San Benito and San Luis Obispo counties. Agricultural and urban development, direct and secondary poisoning, and shooting and trapping for control all have had deleterious effects on badgers in California.[17]

Pallid bat: Although the health of pallid bat relative to the RSA is unknown, overall there has been a decline in pallid bat populations in California over the last half century. This decline is likely due to the bats sensitivity to roost site disturbance, the use of pesticides resulting in the loss of edible insects, and from human development and removal of oak woodland habitats.[18]

California Tiger Salamander (CTS): Although the health of CTS relative to the RSA is unknown, multiple factors have contributed to population declines of the Central California Distinct Population Segment. These factors include habitat loss and fragmentation; predation from, and competition with, invasive species; hybridization with nonnative barred tiger salamanders; mortality from road crossings; contaminants; and small mammal burrow control efforts (Service 2004, 2014). Potential threats include introduction of diseases such as ranaviruses and chytrid fungi, and also climate change (Service 2004, 2014).[19]

Environmental Consequences

American Badger:

Six projects, including the proposed Build Alternative considered in this supplemental document have been identified within the RSA that have the potential to impact American badger. Table 4.1-2 provides a list of current and reasonably foreseeable future projects within the RSA. Information regarding current and reasonably foreseeable future projects was developed by contacting the following agencies: San Luis Obispo Planning Department; California Department of Fish and Wildlife; Regional

[17] Bolster, B.C., editor. 1998. Terrestrial Mammal Species of Special Concern in California. Draft Final Report prepared by P.V. Brylski, P.W. Collins, E.D. Pierson, W.E. Rainey and T.E. Kucera. Report submitted to California Department of Fish and Game Wildlife Management Division, Nongame Bird and Mammal Conservation Program for Contract No.FG3146WM.
[18] Erickson, Gregg A., et al. Bat and Bridges Technical Bulletin (Hitchhiker Guide to Bat Roosts), California Department of Transportation, Sacramento CA. 2002.
[19] U.S. Fish and Wildlife Service. 2017. Recovery Plan for the Central California Distinct Population Segment of the California Tiger Salamander (Ambystoma californiense). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. v + 69pp.

Water Quality Control Board; U.S. Army Corps of Engineers; Caltrans Transportation Planning Department and Caltrans Encroachment Permits Branch.

Table 4.1-2 Projects Evaluated within the American badger Resource Study Area

Map Key	Development/Project	Location	Document Type	Potential Impacts to Biological Resource
1	Calflats Solar Farm	Southeastern Monterey County, southeast of Parkfield, east of Turkey Flats Road and north of State Highway 46	EIR	Less Than Significant Impact with Mitigation
2	Brodiaea/Truesdale Vineyard Grading Permit	4.25 miles south of the community of Shandon	Mitigated Negative Declaration (MND) (July 2018)	No Anticipated Impacts
3	Brodiea Grading Permit	4.75 miles south of the community of Shandon	MND (September 2018)	No Anticipated Impacts
4	Shandon Community Plan	Community of Shandon Limits	General Plan (April 2012)	Less Than Significant Impact with Mitigation
5	Route 46 Widening – Future Antelope Grade	State Route 46; Post Mile 57.8/60.8	Negative Declaration (ND)/FONSI (April 2005)	Less Than Significant Impact with Mitigation

The 2,900 acre California Flats Solar Project was completed in 2019 and is currently in operation (Map Key #1). The project included an approximate 346-acre disturbance area within the American badger RSA. The project's EIR described the American badger as ubiquitous throughout the region and stated that an abundance of evidence supporting presence of the species was observed, including the spotting of two adult badgers. Therefore, the entire project site was determined to provide high quality suitable habitat for American badgers. The EIR determined that the project could result in injury or mortality of individual American badgers and would result in habitat loss and modifications. These impacts to the American badger were deemed significant, but

with the implementation of mitigation and avoidance measures, the impacts to the species and habitat was reduced to less than significant.

Two new agricultural reservoirs and approximately 9 acres of disturbance within the Truesdale Vineyard (Map Key #2 & #3) were proposed in 2018. Based on the Mitigated Negative Decelerations written by San Luis Obispo County, the CNDDB was queried for San Joaquin Kit Fox (SJKF) and other special status species occurrences within ten miles of the two project sites. The CNDDB query identified the project sites within an area important for habitat for SJKF. Due the project site conditions all other special status species were not expected to occur on site. The sites consist of an area with predominately bare soils devoid of vegetation and do not support suitable denning habitat for the SJKF due to the regular cycles of disturbance associated with disking and farming practices. Active ground squirrel abatement practices in concert with ongoing agricultural operations reduce the availability of small mammal and other potential SJKF prey at the sites. Nonetheless, the open water surfaces of the two reservoirs were considered permanent SJKF habitat loss and construction activities were considered a potential threat to wildlife. Therefore, mitigation for the permanent total loss of 6 acres of SJKF habitat is included for the projects. Also, avoidance and minimization measures are included in the projects to limit direct impacts to wildlife species during construction. Because the project sites are heavily disturbed, the permanent loss of SJKF habitat will be mitigated, and avoidance measures will be implemented to protect wildlife during construction; impacts to the American badger and its habitat are less than significant.

The 2012 Shandon Community Plan (Map Key #4) identifies avoidance and minimizations to limit temporary direct impacts to the American Badger during construction activities. Habitat loss specific to the American Badger is not discussed, but habitat mitigation will be completed for SJKF to address permanent habitat loss. SJKF shares similar habitat type with the American badger. Implementation of avoidance and minimization measures during construction include: pre-construction surveys, active den buffers during breeding season, closing/collapsing active dens prior to grading, and biological monitoring. These measures would reduce temporary direct impacts to the American badger and any permanent loss of habitat will be mitigated to less than significant through habitat mitigation for the SJKF.

The Antelope Grade Project (Map Key #5) will be the last section of Route 46 in San Luis Obispo County to be converted to a 4-lane divided expressway. The ND/FONSI prepared for this project did not discuss potential impacts to American Badger. However, presence of American Badger individuals and habitat is assumed for the purposes of this cumulative analysis. The project includes mitigation and avoidance measures to limit impacts to the SJKF individuals and habitat. These same measures will limit impacts to the American badger because they have similar lifestyles and occupy similar habitat areas. Through implementation of measures outlined in the Biological Opinion for the protection of SJKF direct impacts to the American badger during construction would be reduced to less than significant and any potential loss of habitat would be mitigated. It's important to note that re-initiation of formal Section 7 Consultation will be required for this project since project

construction has not yet begun and the Biological Opinion (dated April 25, 2005) is over 2 years old.

The Cholame North Modified Alternative (Option A) includes mitigation and avoidance measures to limit impacts to the individual SJKF and their habitat. These same measures will limit impacts to the American badger because they have similar lifestyles and occupy similar habitat areas. With implementation of the proposed avoidance, minimization and mitigation measures for the protection of the SJKF, the proposed project is not expected to contribute to an adverse cumulative impact to the American Badger.

Pallid bat:

Two projects, including the proposed Build Alternative considered in this supplemental document have been identified within the RSA that have the potential to impact Pallid bat. Table 4.1-3 provides a list of current and reasonably foreseeable future projects within the RSA. Information regarding current and reasonably foreseeable future projects was developed by contacting the following agencies: San Luis Obispo Planning Department; California Department of Fish and Wildlife; Regional Water Quality Control Board; U.S. Army Corps of Engineers; Caltrans Transportation Planning Department and Caltrans Encroachment Permits Branch.

Table 4.1-3 Projects Evaluated within the Pallid Bat Resource Study Area

Map Key	Development/Project	Location	Document Type	Potential Impacts to Biological Resource
5	Route 46 Widening – Future Antelope Grade	State Route 46; Post Mile 57.8/60.8	ND/FONSI (April 2005)	No Anticipated Impacts

Past, current, or foreseeable projects within the RSA are limited to the already the proposed sections of the Caltrans' Route 46 Improvement and Widening Projects. After thorough review of public information and coordination with participating agencies, no other projects were found with the RSA.

The proposed improvement and widening of Route 46 (Map Key #5) through the Antelope Grade (Antelope Grade Section) is within the RSA. In the 2005 ND/FONSI, the Antelope Grade Section determined that the project would have no effect on eight different bat species queried around the project area. The pallid bat was not one of the eight species identified in the 2005 ND/FONSI. Therefore, according to the April 2005 ND/FONSI, construction and operation of the Antelope Grade project is not expected to result in direct or indirect impacts on the pallid bat.

The Cholame North Modified Alternative (Option A) would remove the existing Cholame Creek Bridge where about 800 bats roost throughout the year, resulting in permanent loss to bat habitat. However, the new bridges across Cholame Creek have been designed to incorporate day and night roosting crevice habitat similar to crevice habitat on the existing Cholame Creek bridge. Therefore, day roosting habitat for the pallid bat will be replaced and no net loss of roosting habitat is expected as a result of construction and operation of the proposed new Build Alternative. Through incorporation of avoidance, minimization and mitigation measures for the protection of pallid bat (and other bat species), the proposed Cholame North Modified Alternative (Option A) is not expected to contribute to an adverse cumulative effect to pallid bat.

California Tiger Salamander:

There are no other known projects, aside from the proposed Build Alternative within the RSA that could contribute to cumulative impacts to CTS. Information regarding current and reasonably foreseeable future projects was developed by contacting the following agencies: San Luis Obispo Planning Department; California Department of Fish and Wildlife; Regional Water Quality Control Board; U.S. Army Corps of Engineers; Caltrans Transportation Planning Department and Caltrans Encroachment Permits Branch. After thorough review of public information and coordination with participating agencies, no other projects were found with the RSA.

As discussed in Section 3.2.5, it is anticipated that the Cholame North Modified Alternative (Option A) would provide a net benefit for CTS within the RSA. Therefore, the project will not contribute to cumulative impacts to CTS.

Chapter 5 Environmental Significance Checklist

5.1 Determining Significance under the California Environmental Quality Act

The proposed project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration (FHWA) 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). FHWA's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans. The Department is the lead agency under CEQA and NEPA.

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

CEQA, on the other hand, does require the Department 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 EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

5.2 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.

The list below provides a summary of the CEQA significance determinations for the following resources.

5.2.1 Aesthetics

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

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

Less Than Significant With Mitigation Incorporated— The proposed project will create changes to the existing hillside landform within the project limits affecting the scenic vista, therefore minimization and mitigation measures would be implemented to reduce these changes to below significant. Please refer to Section 3.3.1: Visual Resources; Environmental Consequences and Avoidance, Minimization and Mitigation Measures.

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

No Impact—Route 46 has not yet been designated a state scenic highway. Please refer to Section 3.3.1: Visual Resources; Environmental Consequences.

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?

Less Than Significant With Mitigation Incorporated— The proposed project will create changes to the existing rural character within the project limits, therefore minimization and mitigation measures would be implemented to reduce these changes to below significant. Please refer to Section 3.3.1: Visual Resources; Environmental Consequences and Avoidance, Minimization and Mitigation Measures.

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

Less Than Significant With Mitigation Incorporated—The proposed project will introduce a new source of nighttime light within the project limits, therefore

minimization and mitigation measures would be implemented to reduce these changes to below significant. Please refer to Section 3.3.1: Visual Resources; Environmental Consequences and Avoidance, Minimization and Mitigation Measures.

5.2.2 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?

Less Than Significant Impact - The project would convert 141 acres of statewide and local important farmland to non-agricultural use. This conversion represents a relatively small reduction in county and statewide totals. See Section 3.3.2 Farmland Resources; Environmental Consequences.

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

Less Than Significant Impact –Construction of the proposed Build Alternative would result in the conversion of 169.1 acres of farmland into transportation use. 59.09 acres of this total are held under Williamson Act contract. This impact represents a 0.00008% reduction in countywide totals of Williamson Act contract lands. Additionally, the project is listed in the 2014 Regional Transportation Plan (RTP) and the Final 2019 Federal Transportation Plan (FTIP) and is listed in the financially constrained 2017 FTIP, which was found to conform by the San Luis Obispo Council of Governments (SLOCOG). See Section 3.3.2 Farmland Resources; Environmental Consequences.

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 - Land use surrounding the Cholame Section is zoned rural agricultural. For more information on the project's zoning, see Section 3.3.2.

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

No Impact – There is no forest land within the project corridor. Land use surrounding the Cholame Section is zoned rural agricultural. For more information on the project's zoning, see Section 3.3.2

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 - There will not be other changes in the existing environment that could result in conversion of Farmland to non-agricultural use, or conversion of forest land to non-forest use. See Section 3.3.2 for more information on farmland resources.

5.2.3 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?

Less Than Significant Impact - The Cholame Section is listed in the 2014 Regional Transportation Plan and the 2019 RTP and is listed in the financially constrained 2017 FTIP, which was found to conform by the San Luis Obispo Council of Governments (SLOCOG) on October 12, 2016. Please refer to Section 3.1.1: Air Quality; Environmental Consequences; Regional and Project Level Air Quality.

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

Less Than Significant Impact - The Project is located within a nonattainment area for both the 2008 Federal 8-hour and 2015 federal 8-hour ozone levels, and nonattainment for State PM_{10} and 1-hour ozone levels. With respect to ozone, regional and project level conformity has been met with the project's inclusion in the 2019 RTP and fiscally constrained 2017 FTIP. The rise in PM_{10} with the 2042 Build Alternative due to increased vehicle speeds is not large enough to be considered a cumulatively considerable net increase. Please refer to Section 3.1.1: Air Quality; Environmental Consequences.

c) Expose sensitive receptors to substantial pollutant concentrations?

No Impact - There are no sensitive air receptors within 500 feet of the existing and proposed highway. Please refer to Section 3.1.1: Air Quality; Affected Environment.

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

Less Than Significant Impact – The project is located in a fairly unpopulated rural area but may cause temporary degradation in air quality due to the release of particulate emissions and short-term odors during construction. Construction impacts to air quality are short-term and, therefore will not result in long-term adverse impacts to air quality conditions. Please refer to Section 3.1.1: Air Quality; Affected Environment and Environmental Consequences.

5.2.4 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 With Mitigation Incorporated—The proposed Build Alternative has the potential to result in direct and indirect impacts to plant and animal species that are listed as species of special concern or as threatened or endangered. Through incorporation of avoidance, minimization and mitigation measures potential impacts would be reduced to below significant. Please refer to Sections 3.2.3 through 3.2.4.

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 With Mitigation Incorporated— The new proposed Build Alternative would result in minor permanent impacts to intermittent streams and non-riparian streambank areas within the limits of the Cholame Section. Through incorporation of avoidance, minimization and mitigation measures potential impacts would be reduced to below significant. Please refer to Section 3.2.2; Environmental Consequences and Avoidance, Minimization and Mitigation.

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?

No Impact—There are no wetland or vernal pool impacts associated with the proposed Cholame North Modified Alternative (Option A). Please refer to Section 3.2.2; Environmental Consequences.

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?

Less Than Significant With Mitigation Incorporated—The existing two-lane highway is currently a complete barrier to some wildlife species, especially within the 1.4 mile section where there is a concrete median barrier. For other species outside of the median barrier section, the highway may be a partial barrier. The proposed Build alternative would incorporate 36" diameter culverts every 0.3 miles, where topography will allow. Along with the use of directional fencing, these culverts would effectively pass small to medium bodied wildlife species from one side of the highway to the other. Additionally, Caltrans added an additional crossing specifically for wildlife within the project and enlarged the two culverts at White Canyon to 14-foot diameter to accommodate a wider variety of species. Please refer to Section 3.2.4 and 3.2.5

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

No Impact—The proposed Build Alternative for the Cholame Section does not conflict with any local policies protecting biological resources. Please refer to Section 3.2.2; Environmental Consequences.

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—There is no adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan within the limit of the Cholame Section. Please refer to Section 3.2.2; Affected Environment.

5.2.5 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 only historical resources in the project APE is the James Dean Memorial, and there will be no impacts to the site as a result of the proposed Build Alternative. Please refer to Section 3.3.3: Cultural Resources; Environmental Consequences.

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

Significant and Unavoidable Impact - CA-SBA-1927/H Locus A has been identified as a prehistoric archaeological resource pursuant to §15064.5 within the project APE. Construction activities related to the proposed Build Alternative have the potential to cause physical destruction or damage to portions of the resource. Mitigation measures will reduce adverse changes to the extent possible. Please refer to Section

3.3.3: Cultural Resources; Environmental Consequences and Avoidance, Minimization and Mitigation Measures.

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

No Impact - No human remains are anticipated in the project APE. However, if human remains are discovered, Caltrans will comply with California Health and Safety Code (H&SC) Section 7050.5. Please refer to Section 3.3.3: Cultural Resources; Environmental Consequences and Avoidance, Minimization and Mitigation Measures.

5.2.6 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?

Less Than Significant Impact - The 2042 Build Alternative would cause slightly higher gasoline consumption than the 2042 No-Build Alternative. However, the 2042 Build Alternative would consume 445 fewer gallons of gasoline per day than the current 2016 existing conditions. Please refer to Section 3.1.9: Energy.

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

Less Than Significant Impact - The proposed project is one of many projects planned and included in the SLOCOG's 2014 and 2019 RTP/SCS with the aim of reducing congestion and GHG emissions. In June 2015, ARB determined that the SLOCOG's 2014 RTP/SCS would achieve the GHG emissions reduction targets that ARB established for the region, which is an eight percent reduction from 2005 in both 2020 and 2035. For more information on the project's conformity with greenhouse gas emissions, see Section 5.4.

5.2.7 Greenhouse Gas Emissions

Would the project:

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

Less Than Significant Impact—The project's impact will be less than significant with the implementation of construction GHG-reduction measures. For more information on greenhouse gas emissions, please refer to Section 5.4.

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

Less Than Significant Impact— The proposed project is anticipated to reduce operational greenhouse gas emissions compared to existing emissions. It is one of many projects planned and included in the SLOCOG's 2014 and 2019 RTP/SCS with the aim of reducing congestion and GHG emissions. For more information on GHG emissions, please refer to Section 5.4.

5.2.8 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?

Less Than Significant Impact— Caltrans, under its MS4 Permit, is required to develop a Statewide Stormwater Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction and maintenance activities. These SWMP requirements in addition to the Construction General Permit which regulates discharges from construction sites will effectively reduce any potential violation of water quality standards, waste discharge requirement or degradation of surface or ground water quality. Please refer to Section 3.1.4: Hydrology, Floodplains, Water Quality; Regulatory Setting and Environmental Consequences.

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 proposed Highway widening project does not have the potential to deplete groundwater supplies or interfere with groundwater recharge. Please See Section 3.1.4: Hydrology, Floodplains, Water Quality; Environmental Consequences.

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;

Less Than Significant Impact—. Incorporation of Construction site BMP's and permanent treatment BMP's will effectively reduce erosion and siltation potential on and off-site. Please refer to Section 3.1.4.

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

Less Than Significant Impact— The project has been designed in accordance with Caltrans cross culvert criteria and federal standards in order to design culver crossing to convey the 100-year (1% probability) flood. Please refer to Section 3.1.4.

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

No Impact— All drainage systems are designed to convey the 100-year (1% probability) flood without objectionable backwater depths and velocities to prevent flooding of adjacent land. Please see Section 3.1.4: Hydrology, Floodplains, Water Quality; Environmental Consequences.

iv) Impede or redirect flood flows?

Less Than Significant Impact—All drainage systems are designed to convey the 100-year (1% probability) flood without objectionable backwater depths and velocities to prevent flooding of adjacent land. Please see Section 3.1.4: Hydrology, Floodplains, Water Quality; Environmental Consequences.

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

No Impact—The project is not within a flood hazard, tsunami, or seiche zones

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

No Impact—Construction and operation of the proposed highway project does not have the potential to conflict with any water quality control plans or sustainable groundwater management plans.

5.2.9 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?

Less Than Significant Impact - The predicted noise levels for the Build Alternative do not approach the noise abatement criteria levels for the two identified sensitive receptors in this project. To read more about the changes in noise levels due to the project, see Section 3.1.5.

b) Generation of excessive ground borne vibration or ground borne noise levels?

Less Than Significant Impact - The project will not generate excessive ground borne vibration or ground borne noise levels. See Section 3.1.5 for more information.

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 located within the vicinity of a private airstrip, airport land use plan, or public airport.

5.2.10 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

Significant and Unavoidable Impact—CA-SBA-1927/H Locus A has been identified as a prehistoric archaeological resource pursuant to §15064.5 within the project APE. The site is a tribal cultural resource and is eligible for listing in the California Register of Historical Resources. Construction activities related to the proposed Build Alternative have the potential to cause physical destruction or damage to portions of the resource. Please refer to Section 3.3.3: Cultural Resources for more information.

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 — Please refer to Section 3.3.3: Cultural Resources for more information.

5.2.11 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?

Less Than Significant Impact — The proposed build alternative would require relocation of utilities, but it has been designed to reduce utility conflicts to the maximum extent practicable. Please refer to Section 3.1.3 Hazardous Waste.

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

No Impact— Water used to construct the project would be non-potable and temporary. Operation of the new highway would not require long-term, permanent use of water.

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— This question in not applicable to highway construction or operation.

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— This question in not applicable to highway construction or operation.

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

No Impact— This question in not applicable to highway construction or operation.

5.2.12 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—This project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones.

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—This project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones.

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—This project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones.

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—This project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones.

5.2.13 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?

Less Than Significant With Mitigation Incorporated -- Avoidance, minimization and mitigation measures have been incorporated into the project that would reduce habitat impacts and impacts to individual species to less than significant. Please refer to Section 3.2.

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.)

Less Than Significant Impact With Mitigation Incorporated – Through incorporation of avoidance, minimization and mitigation measures impacts associated with the construction and operation of the project are not expected to contribute to an adverse cumulative impact to affected resources. Please refer to Section 4.1.

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

Less Than Significant Impact With Mitigation Incorporated – Through incorporation of avoidance, minimization and mitigation measures, impacts associated with the construction and operation of the project will not cause direct or indirect adverse effects on humans. Please refer to Chapter 3

5.3 Climate Change

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

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

In the U.S., the main source of greenhouse gas emissions is electricity generation, followed by transportation.[20] In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest contributors of greenhouse gas emissions.[21] The dominant greenhouse gas emitted is CO_2, mostly from fossil fuel combustion.

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

Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce 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.

[20] https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014
[21] https://www.arb.ca.gov/cc/inventory/data/data.htm

The National Environmental Policy Act (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.[22] This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability."[23] Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level and will inform the analysis and stewardship needs of project-level decision-making.

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

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

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

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

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

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

The U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of greenhouse gas emission standards for new cars and light-duty vehicles in April 2010[24] and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because the National Highway Traffic Safety Administration cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which the National Highway Traffic Safety Administration, EPA, and Air Resources Board will decide on the Corporate Average Fuel Economy (CAFE) and greenhouse gas emissions standard stringency for model years 2022–2025. The National Highway Traffic Safety Administration has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Donald Trump ordered the EPA to reopen the review and reconsider the mileage target.[25]

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

[24] https://one.nhtsa.gov/Laws-&-Regulations/CAFE-%E2%80%93-Fuel-Economy

[25] https://www.federalregister.gov/documents/2017/03/22/2017-05316/notice-of-intention-to-reconsider-the-final-determination-of-the-mid-term-evaluation-of-greenhouse

carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO_2 emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

State

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

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

Executive Order S-3-05 (June 1, 2005): The goal of this 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 32 in 2006 and SB 32 in 2016.

Assembly Bill 32 (AB 32), Chapter 488, 2006: Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that the 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 set forth the low carbon fuel standard (LCFS) for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. The Air Resources Board re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 greenhouse gas reduction goals.

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

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires 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.

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

Executive Order B-16-12 (March 2012): This order required 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): This order established 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 ($MMTCO_2e$). Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, (SB 32) Chapter 249, 2016: This bill 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.

Environmental Setting

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce greenhouse gas emissions in California. 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. The Scoping Plan was first approved by the Air Resources Board in 2008 and must be updated every 5 years. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce greenhouse gas emissions. As part of its supporting documentation for the updated Scoping Plan, the Air Resources Board released the

greenhouse gas inventory for California.[26] The Air Resources Board is responsible for maintaining and updating California's Greenhouse Gas Inventory per H&SC Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure 5.2-1 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists the Air Resources Board in demonstrating progress toward meeting the 2020 goal of 431 $MMTCO_2e$.[27] The 2018 edition of the GHG emissions inventory found total California emissions of 429 $MMTCO_2e$ for 2016.

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

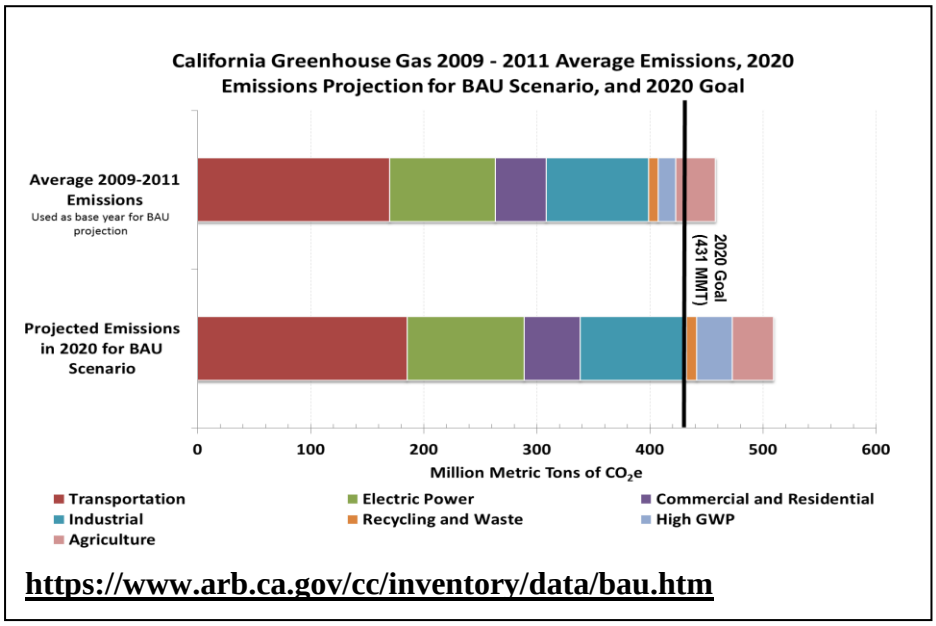


Figure 5.4-1: 2020 Business as Usual (BAU) Emissions Projection 2014 Edition

[26] 2018 Edition of the GHG Emission Inventory (July 2017): https://www.arb.ca.gov/cc/inventory/data/data.htm

[27] The revised target using Global Warming Potentials (GWP) from the IPCC Fourth Assessment Report (AR4)

Project Analysis

An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of greenhouse gas.[28] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, you must compare the incremental impacts of the project with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

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

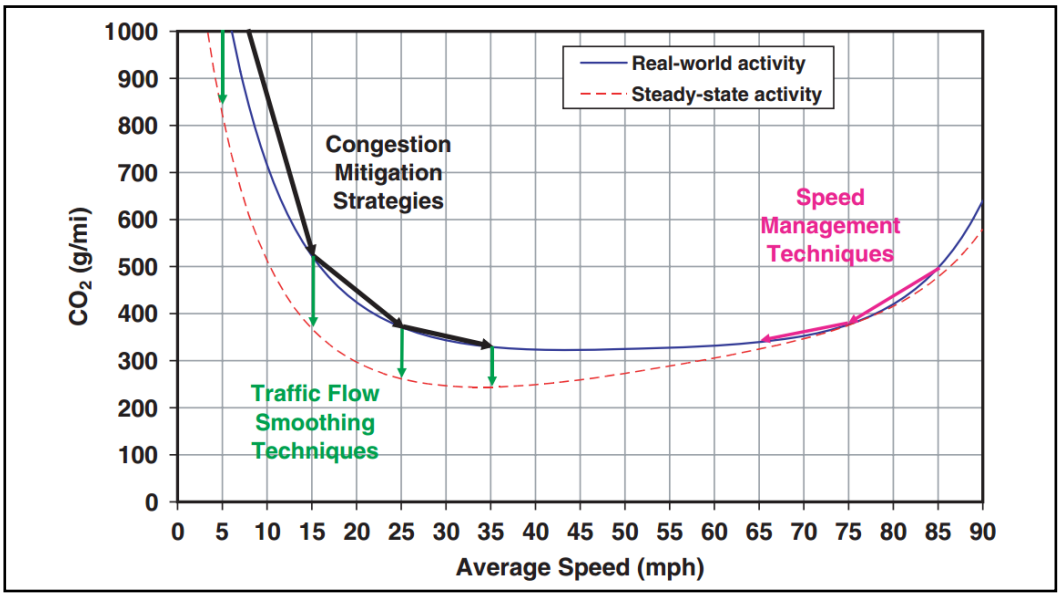


Figure 5.4-2 Possible Use of Traffic Operation Strategies in Reducing On-Road CO_2 Emissions

Source: Matthew Barth and Kanok Boriboonsomsin, University of California, Riverside, May 2010 (http://uctc.berkeley.edu/research/papers/846.pdf)

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

Operational Emissions

Four primary strategies can reduce greenhouse gas emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity, (3) transitioning to lower greenhouse gas-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued concurrently.

The Federal Highway Administration supports these strategies to lessen climate change impacts, which correlate with efforts that the State of California is undertaking to reduce greenhouse gas emissions from the transportation sector.

The highest levels of CO_2 from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 5.4-2 above). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, greenhouse gas emissions, particularly CO_2, may be reduced.

For transportation planning purposes, the proposed Project is within the jurisdiction of the San Luis Obispo Council of Governments (SLOCOG). The Project is included in the SLOCOG's 2014 fiscally constrained Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), where it is described as "a statewide priority to ensure safe and efficient passage for travelers and commodity moving between the Central Valley and the Central Coast," and it remains a priority corridor in the SLOCOG's 2019 RTP/SCS.

The RTP reflects a wide spectrum of sustainability objectives as part of long-range planning efforts. The project is included in the RTP and therefore is one of many projects planned in combination to reduce congestion and GHG emissions. In June 2015, ARB established that full implementation of the SLOCOG's 2014 RTP/SCS would achieve the GHG emissions reduction targets that ARB established for the region, which was an eight percent per capita reduction from 2005 in both 2020 and 2035. The 2015 addendum to the 2014 RTP/SCS EIR notes that "strategies and investments in the 2014 RTP/SCS result in a projected 9.43 percent reduction by 2020 and a 10.91 percent reduction by 2035, which exceed California Air Resources Board targets." These reductions also exceed ARB's current (2018) reduction targets (relative to 2005) for SLOCOG of three percent by 2020 and eleven percent by 2035.[29] The new 2018 ARB targets are incorporated into the 2019 RTP/SCS, which includes the Cholame project. The 2019 RTP/SCS states that it is "challenged to meet both targets through robust regional modeling of a preferred future land use pattern and corresponding set of transportation investments." The Cholame project is included as one of the transportation investments in the 2019 RTP.

[29] https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets

One of the goals of the *Corridor Project* is to reduce existing and predicted future peak hour congestion. Widening the existing two-lane highway to a four-lane expressway will reduce existing and predicted future congestion.

State Route 46 is open to bicycle travel within the limits of the *Corridor Project*; however, the area sees very limited bicycle traffic. The ten-foot wide outside shoulders would provide room for bike travel. At public road intersections, a separate six-foot wide bike lane would be provided to avoid conflicts with vehicles turning right.

As shown in Table 5.4-1, annual CO_2 emissions would decrease in the future under all the project alternatives (Build and No-Build) compared to current conditions (2016), even with increased vehicle miles traveled (VMT). This reduction despite rising VMT is partially due to emissions benefits of rulemakings, including on-road diesel fleet rules, Advanced Clean Car Standards, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation. The California vehicle fleet also will become less polluting over time as older engines are phased out and replaced by newer, less polluting engines.

Table 5.4-1: Modeled Annual CO_2 Emissions and Vehicle Miles Traveled by Alternative

Alternative	CO_2 Emissions (Tons/Year)	Annual Vehicle Miles Traveled[1]
Existing/Baseline 2016	14,738	28,505,248
Open to Traffic 2022		
No-Build Alternative	12,991	31,031,576
Build Alternative	13,915	31,031,576
20-Year Horizon/Design-Year 2042		
No-Build Alternative	12,443	42,339,008
Build Alternative	13,407	42,339,008

CO_2 = carbon dioxide
Source: CT-EMFAC 2017
[1] Annual vehicle miles traveled (VMT) values derived from Daily VMT values multiplied by 347, per ARB methodology (ARB 2008).

A twenty-year time horizon is modeled to demonstrate the conditions that will occur after many years of project operation. The increased emissions under the Build Alternative compared to the No-Build Alternative under Design-Year 2042 is likely tied to the overall increase in vehicle speeds on the highway. The optimal vehicle speed for the combustion of fossil fuels and the subsequent release of emissions occurs at about 45 miles per hour. This congestion relief project will expand the existing two-lane highway to a four-lane divided expressway, raising the posted speed limit from 55 to 65 miles per hour. As vehicle speeds increase above 45 miles per hour, the CO_2 emissions are expected to increase as well.

The analysis represents a best faith effort to describe the potential emissions related to the proposed project. Revised emissions are lower than those presented in the 2006 EIR/EA due to the revised annual VMT. Emissions decrease in future years due to CT-EMFAC accounting for emissions benefits of rulemakings, including on-road diesel fleet rules, Advanced Clean Car Standards, and the Phase I Heavy Duty Vehicle Greenhouse Gas Regulation. The California vehicle fleet also becomes less polluting over time as older engines are phased out and replaced by newer, less polluting engines. Though CT-EMFAC is currently the best available tool for use in calculating GHG emissions, it is important to note that the CO_2 numbers provided are only useful for a comparison of alternatives.

Limitations and Uncertainties with Modeling

CT-EMFAC

Although CT-EMFAC can calculate CO_2 emissions from mobile sources, the model does have limitations when it comes to accurately reflecting changes in CO_2 emissions due to impacts on traffic. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008) and a 2009 University of California study[30], brief but rapid accelerations, such as those occurring during congestion, can contribute significantly to a vehicle's CO_2 emissions during a typical urban trip. Current emission-factor models do not distinguish the emission of such modal events (i.e., acceleration, deceleration) in the operation of a vehicle and instead estimate emissions by average trip speed. It is difficult to model this because the frequency and rate of acceleration or deceleration that drivers chose to operate their vehicles depend on each individual's human behavior, their reaction to other vehicles' movements around them, and their acceptable safety margins. Currently, the EPA and the CARB have not approved a modal emissions model that is capable of conducting such detailed modeling. This limitation is a factor to consider when comparing the model's estimated emissions for various project alternatives against a baseline value to determine impacts.

Other Variables

With the current understanding, project-level analysis of greenhouse gas emissions has limitations. Although a GHG analysis is included for this project, there are numerous external variables that could change during the design life of the proposed project and would thus change the projected CO_2 emissions.

First, vehicle fuel economy is increasing. The EPA's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2016,"[31] which provides data on the fuel economy and technology characteristics of new light-duty

[30] Matthew Barth, Kanok Boriboonsomsin. 2009. *Energy and emissions impacts of a freeway-based dynamic eco-driving system.* Transportation Research Part D: Transport and Environment
Volume 14, Issue 6, August 2009, Pages 400–410

[31] https://www.epa.gov/fueleconomy/light-duty-automotive-technology-carbon-dioxide-emissions-and-fuel-economy-trends-1975-1

vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy improves each year with a noticeable rate of change beginning in 2005. Corporate Average Fuel Economy (CAFE) standards remained the same between model years 1995 and 2003, subsequently increasing to higher fuel economy standards for future vehicle model years. The EPA estimates that light duty fuel economy rose by 29% from model year 2004 to 2015, attributed to new technology that improved fuel economy while keeping vehicle weight relatively constant. Table 5.4-2 shows the increases in required fuel economy standards for cars and trucks between Model Years 2012 and 2025, from the National Highway Traffic Safety Administration for the 2012–2016 and 2017–2025 CAFE Standards.

Table 5.4-2. Average Required Fuel Economy (mpg)

	2012	2013	2014	2015	2016	2017	2018	2020	2025
Passenger Cars	33.3	34.2	34.9	36.2	37.8	39.6-40.1	41.1-41.6	44.2-44.8	55.3-56.2
Light Trucks	25.4	26	26.6	27.5	28.8	29.1-29.4	29.6-30.0	30.6-31.2	39.3-40.3
Combined	29.7	30.5	31.3	32.6	34.1	35.1-35.4	36.1-36.5	38.3-38.9	48.7-49.7
Sources: EPA and NHTSA 2010, 2012. https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-passenger-cars-and									

Second, new lower-emission and zero-emission vehicles will come into the market within the expected design life of this project. According to the 2013 Annual Energy Outlook (AEO 2013):

> LDVs that use diesel, other alternative fuels, hybrid-electric, or all-electric systems play a significant role in meeting more stringent GHG emissions and CAFE standards over the projection period. Sales of such vehicles increase from 20 percent of all new LDV sales in 2011 to 49 percent in 2040 in the AEO2013 Reference case.[32]

The greater percentage of lower-emissions and zero-emissions vehicles on the road in the future will reduce overall GHG emissions as compared to scenarios in which vehicle technologies and fuel efficiencies do not change.

Third, California adopted a low-carbon transportation fuel standard in 2009 to reduce the carbon intensity of transportation fuels by 10 percent by 2020. The regulation became effective on January 12, 2010 (codified in title 17, California Code of Regulations, Sections 95480-95490). Beginning January 1, 2011, transportation fuel producers and importers must meet specified average carbon intensity requirements for fuel in each calendar year.

[32] http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf

Limitations and Uncertainties with Impact Assessment

Figure 5.4-3 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis, as noted in the *National Highway Traffic Safety Administration Final EIS for MY2017–2025 CAFE Standards* (NHTSA 2012):

> Moss and Schneider (2000) characterize the 'cascade of uncertainty' in climate change simulations (Figure [##]). As indicated in Figure 5.4-3, the emission estimates have narrower bands of uncertainty than the global climate effects, which are less uncertain than regional climate change effects. The effects on climate are, in turn, less uncertain than the impacts of climate change on affected resources (such as terrestrial and coastal ecosystems, human health, and other resources …). Although the uncertainty bands broaden with each successive step in the analytic chain, all values within the bands are not equally likely; the mid-range values have the highest likelihood.[33]

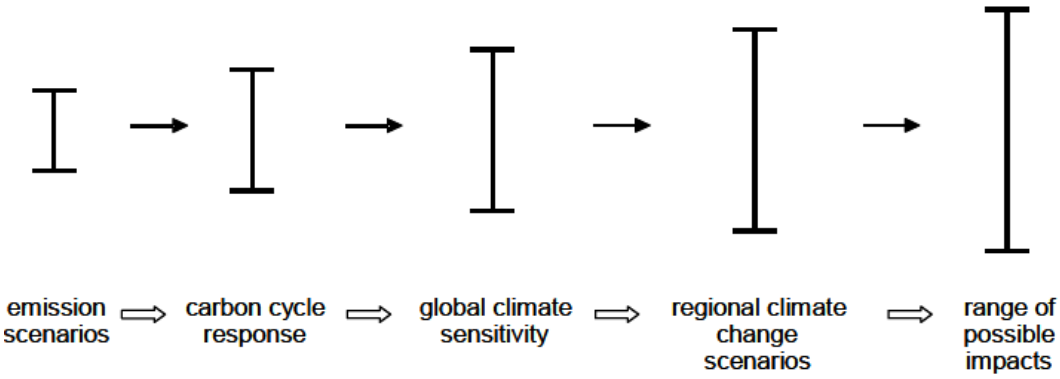


Figure 5.4-3 Cascade of Uncertainty in Climate Change Simulations
Source: National Highway Traffic Safety Administration Final EIS for MY2017-2025 CAFE Standards (July 2012). Page 5-22.

Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in CO_2 emissions would mean for climate change given the overall California GHG emissions inventory of approximately 430 million tons of CO_2 equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios

[33] http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FINAL_EIS.pdf. page 5-21

project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons CO_2 from 2000 to 2030, which represents an increase of between 25 and 90%.[34]

The assessment is further complicated by the fact that changes in GHG emissions can be difficult to attribute to a particular project because projects often cause shifts in the locale for some type of GHG emissions, rather than causing "new" GHG emissions. It is difficult to assess the extent to which any project-level increase in CO_2 emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

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 can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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

The Caltrans Construction Emissions Tool 2018 (CAL-CET2018) was used to estimate construction GHG emissions. Construction activity would generate approximately 22.5 metric tons of CO_2e greenhouse gas emissions for the Build Alternative over an assumed 27-month construction time frame. CAL-CET2018 focuses on construction vehicle emissions, considering variables such as project type, cost, and duration.

Caltrans Standard Specifications Section 14-9.02, Air Pollution Control, a part of all construction contracts, requires that contractors comply with all federal, state, and local rules, regulations, statutes, and ordinances related to air quality, some of which also reduce GHG emissions. Measures to reduce construction GHG emissions include maintenance of construction equipment and vehicles, limiting construction vehicle idling time, and scheduling and routing of construction traffic to reduce engine emissions. A construction traffic management plan would also help reduce GHG emissions from idling vehicles during construction traffic delays.

CEQA Conclusion

1. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment?

[34] Intergovernmental Panel on Climate Change (IPCC). February 2007. *Climate Change 2007: The Physical Science Basis: Summary for Policy Makers*. https://www.ipcc.ch/publications_and_data/ar4/wg1/en/spm.html

The 2042 Build Alternative would increase operational greenhouse gas emissions by 964 metric tons per year compared to the 2042 No-Build Alternative. However, even with projected increases in VMT, greenhouse gas emissions with the project in 2042 will be 1,331 tons per year less than 2016 baseline existing conditions, showing progress towards meeting statewide emissions reduction goals. This reduction, despite rising VMT, is partially due to emissions benefits of rulemakings, including on-road diesel fleet rules, Advanced Clean Car Standards, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation. The California vehicle fleet also will become less polluting over time as older engines are phased out and replaced by newer, less polluting engines. With implementation of construction GHG-reduction measures, the impact would be less than significant.

With implementation of construction GHG-reduction measures, the impact would be less than significant.

2. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas?

The proposed project is anticipated to reduce operational greenhouse gas emissions compared to existing emissions. It is one of many projects planned and included in the SLOCOG's 2014 and 2019 RTP/SCS with the aim of reducing congestion and GHG emissions. In June 2015, ARB determined that the SLOCOG's 2014 RTP/SCS would achieve the GHG emissions reduction targets that ARB established for the region, which is an eight percent reduction from 2005 in both 2020 and 2035. The proposed project is also consistent with the San Luis Obispo General Plan Land Use Element goal to manage streets and highways so that traffic levels during peak traffic periods do not result in extreme congestion; and the Circulation Element's goal to support statewide and regional efforts to create more sustainable communities, reduce greenhouse gas emissions, and develop transportation systems that support all modes of circulation. The proposed project would provide wide shoulders that could accommodate bicycle travel and separate bike lanes at intersections; therefore, it is consistent with San Luis Obispo County's climate action plan[35] and its EnergyWise Plan.[36] Accordingly, the proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The impact would be less than significant.

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

[35] Koopman, M., K. Meis, and J. Corbett.2010. *Integrated Climate Change Adaptation Planning in San Luis Obispo County*. The Geos Institute Local Government Commission. http://climatewise.org/projects/829-san-luis-obispo

[36] County of San Luis Obispo. 2011. *EnergyWise Plan*. November. https://www.slocounty.ca.gov/Departments/Planning-Building/Energy-and-Climate/Energy-Climate-Reports/EnergyWise-Plan.aspx.

Greenhouse Gas Reduction Strategies

Statewide Efforts

To further the vision of California's greenhouse gas reduction targets outlined in AB 32 and SB 32, Governor Edmund G. Brown Jr. identified key climate change strategy pillars (concepts). See Figure 5.4-3. These pillars highlight the idea that several major areas of the California economy will need to reduce emissions to meet the 2030 greenhouse gas emissions target. These pillars are (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy-efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farm and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.



Figure 5.4-3 Governor's Climate Change Pillars: 2030 Greenhouse Gas Reduction Goals

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

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

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the 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 a new 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. The plan defines performance-based goals, policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system. It serves as an umbrella document for all of the other statewide transportation planning documents.

SB 391 (Liu 2009) requires the California Transportation Plan to meet California's climate change goals under AB 32. Accordingly, the CTP 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, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

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

- Increasing percentage of non-auto mode share
- Reducing vehicle miles traveled per capita
- 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 funding and technical assistance

programs that have greenhouse gas reduction benefits. These include the Bicycle Transportation Program, Safe Routes to School, Transportation Enhancement Funds, and Transit Planning Grants. A more extensive description of these programs can be found in Caltrans Activities to Address Climate Change (2013).

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

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

Project-Level Greenhouse Gas Reduction Strategies

The following measures have been included in Section 3.1.1 (Construction Emissions) to address air quality during construction and will also serve to reduce GHG emissions and potential climate change impacts from the projects.

- The construction contractor must comply with the Department's Standard Specifications in Section 14. Section 14 specifically requires compliance by the contractor with all applicable laws and regulations regarded to air quality, including air pollution control district and air quality management district regulations and local ordinances.

- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.

- A construction traffic management plan will ensure construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

In addition, the minimization measures listed below (from Section 3.1.1) will reduce GHG emissions and potential climate change impacts from the project.

- Minimization Measure 10 – Schedule truck trips to minimize impacts to traffic flow

- Minimization Measure 12 – Construction equipment will be operated in proper tune according to manufacturer's specifications.

- Minimization Measure 13 – Use only California Air Resources Board approved fuel for all diesel-powered equipment used during construction.

- Minimization Measure 14 – To the extent feasible, use electric grid power to replace diesel-powered generators and to power air compressors and light sources.

- Minimization Measure 15 – Diesel equipment shall not be allowed to idle for more than 10 minutes.

The project also includes the following features and practices that help reduce GHGs.

- Balanced earthwork will avoid emissions from truck trips that would otherwise be needed to transport soils to and from the project site.
- Construction will be staged in such a way as to permit the contractor to remove and incorporate the asphalt concrete pavement from the existing SR 46 alignment into the new structural section. Such recycling reduces GHG emissions associated with producing new materials.
- Wide shoulders and bike lanes at street intersections will support non-motorized modes of transportation.

Adaptation Strategies

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

Federal Efforts

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality, the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011[37], outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provided an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as fresh water, and providing accessible climate information and tools to help decision-makers manage climate risks.

The federal Department of Transportation issued a U.S. DOT Policy Statement on Climate Adaptation in June 2011, committing to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT to ensure that taxpayer resources are invested wisely and that transportation

[37] https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience

infrastructure, services and operations remain effective in current and future climate conditions."[38]

To further the DOT Policy Statement, on December 15, 2014, the Federal Highway Administration issued order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*).[39] This directive established a 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 will work to integrate consideration of these risks into its planning, operations, policies, and programs to promote preparedness and resilience; safeguard federal investments; and ensure the safety, reliability, and sustainability of the nation's transportation systems.

The Federal Highway Administration has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, state, and local levels.[40]

State Efforts

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

Then-Governor Schwarzenegger also requested the National Academy of Sciences to prepare an assessment report to recommend how California should plan for future sea-level rise. The final report, Sea-Level Rise for the Coasts of California, Oregon, and Washington (Sea-Level Rise Assessment Report),[41] was released in June 2012 and included relative sea-level rise projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates, and the range of uncertainty in selected sea-level rise projections. It provided a synthesis of existing information on projected sea-level rise impacts to state infrastructure (such as roads, public facilities, and beaches), natural areas, and coastal and marine ecosystems, and a discussion of future research needs regarding sea-level rise.

---

[38] https://www.fhwa.dot.gov/environment/sustainability/resilience/
[39] https://www.fhwa.dot.gov/legsregs/directives/orders/5520.cfm
[40] https://www.fhwa.dot.gov/environment/sustainability/resilience/
[41] *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.

In response to Executive Order S-13-08, the California Natural Resources Agency (Resources Agency), in coordination with local, regional, state, federal, and public and private entities, developed The California Climate Adaptation Strategy (Dec 2009),[42] which summarized the best available science on climate change impacts to California, assessed California's vulnerability to the identified impacts, and outlined solutions that can be implemented within and across state agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan).

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

Executive Order S-13-08 also gave rise to the *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided "guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California," specifically, "information and recommendations to enhance consistency across agencies in their development of approaches to SLR."[43]

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

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

The project is within the floodplain at two locations designated as FEMA Special Flood Hazard Area (Sone A). The updated location hydraulic study considered the risk of overtopping from flows down from the hillsides to the north. The two crossing structures have been designed to avoid impacts to the capacity of the floodplains. As an adaptive co-benefit, the raised elevation of the highway and bridge at Cholame Creek and design capacity of the culverts at the White Canyon crossing would protect them from potential damage from a 100-year (1% probability) flood and flows from

[42] http://www.climatechange.ca.gov/adaptation/strategy/index.html
[43] http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document/

the adjacent hillsides. The proposed new Cholame Creek Bridge is also designed to pass a 50-year (2% probability) flood, in accordance with current Caltrans *Highway Design Manual* requirements. It will have 6.85 feet of freeboard above the 100-year flood water surface.

While the increase from two lanes to four will increase runoff from additional impervious surfaces, stormwater and surface flows will be treated with infiltration strips, biofiltration swales, and infiltration-type permanent treatment BMPs. Slopes would be regraded to no more than a 45-degree angle; and existing vegetation will be preserved as much as possible. These project features protect the surrounding landscape and provide resilience to the highway facility.

This page intentionally left blank

Chapter 6 Avoidance Minimization and Mitigation Summary

The chapter provides a summary of all avoidance, minimization, best management practice (BMP), and mitigation measures that would be implemented to reduce environmental impacts that could result from the construction and operation of the Cholame North Modified Alternative (Option A). A brief reason for each measure, and the person, department, or party responsible for seeing the commitment trough to fruition is included as well. These measures were written to apply to all *Corridor Project* Sections and therefore some of them do not apply to the Cholame Section but will remain in this Supplemental DEIR/Updated EA because they will continue to be implemented in future phases of the larger *Corridor Project*. Measures with a strikethrough constitute measures that are no longer being proposed either because they pertain to previous sections of the *Corridor Project* that have already been constructed or because they are no longer feasible.

The measures below follow the same numbering system as the measures listed in Chapter 6 of the 2006 EIR/FONSI. Number extensions constitute additional measures to be implemented. More detailed information about a measure due to more developed design plans are written in Italics.

6.1 Air Quality

Minimization Measure 1 – Reduce the amount of disturbed areas where possible.

Minimization Measure 2 – Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 25 mph. Reclaimed (non-potable) water would be used whenever possible.

Minimization Measure 3 – All dirt stock-pile areas would be sprayed daily as needed.

Minimization Measure 4 – Permanent dust control measures identified in the approved project re-vegetation and landscape plans would be implemented as soon as possible following completion of any soil disturbing activities.

Minimization Measure 5 – All roadways, driveways, sidewalks, etc. to be paved would be completed as soon as possible unless seeding or soil binders are used.

Minimization Measure 6 – All trucks hauling dirt, sand, soil, or other loose materials on public roads are to be covered or would maintain at least two feet of freeboard in accordance with California Vehicle Code Section 23114.

Minimization Measure 7 – Sweep streets at the end of the day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water would be used where feasible.

Minimization Measure 8 – Fugitive dust emissions from any source during this project will not exceed 20% opacity, with the exception of specific pieces of equipment that are allowed to emit at higher opacity limits under a permit. Should 20% opacity be exceeded, the Contractor must expand their dust control effort to bring the emissions to below the limit.

Impact/reason for protective measure(s) – The following measures (9 – 14) are intended to reduce the amount of combustion emissions produced during project construction. Minimizing the production of primary pollutants would also reduce the production of secondary pollutants during construction.

~~Minimization Measure 9 – Caltrans would use after-treatment control devices on some of the most highly used and high emitting pieces of construction equipment. The determination of the number and type of equipment that shall be retrofitted with these devices shall be discussed and agreed to in conjunction with the SLOAPCD staff prior to the bidding process for each sub-phase of construction.~~

This measure has been eliminated. Caltrans 2015 Standard Specification Section 4-9.02 (Air Pollution Control) requires that the contractor comply with all local air-pollution-control rules, regulations, ordinances and statutes that apply to work performed under the Contract, including those provided in Government Code § 11017 (Public Contract Code § 10231), which states that all state agencies shall comply with all local air pollution control rules, regulations and ordinances which are more stringent than any applicable state air pollution control statute, rule or regulation. In addition, Caltrans' cannot dictate that the contractor tamper with their equipment as this would invalidate equipment warranty and has the potential to result in damage to the equipment. This measure was eliminated from the 2006 EIR/FONSI through preparation of a CEQA/NEPA Re- validations and Addendum to File completed on August 30, 2010.

Minimization Measure 10 – Schedule truck trips to minimize impacts to traffic flow.

~~Minimization Measure 11 – Should Caltrans and the SLOAPCD review of emission estimates indicate that planned construction activities would be substantially greater than the APCD's Tier 3 emission threshold, then phasing of construction activities will be one option form emission reduction.~~

This measure has been eliminated. Phasing of construction activities based on emission estimates and is being eliminated due to legal and contractual issues due to liquidated damages clause in State Contracts. Additionally, Caltrans 2015 Standard Specification Section 4-9.02 (Air Pollution Control) requires that the contractor comply with all local air-pollution-control rules, regulations, ordinances and statutes that apply to work performed under the Contract, including those provided in Government Code § 11017 (Public Contract Code § 10231), which states that all state agencies shall comply with all local air pollution control rules, regulations and ordinances which are more stringent than any applicable state air pollution control statute, rule or regulation.

Minimization Measure 12 – Construction equipment would be operated in proper tune according to manufacturer's specifications.

Minimization Measure 13 – Use only California Air Resources Board approved fuel for all diesel-powered equipment used during construction.

Minimization Measure 14 – To the extent feasible, use electric grid power to replace diesel-powered generators and to power air compressors and light sources.

Minimization Measure 15 – Diesel equipment shall not be allowed to idle for more than 10 minutes.

~~Minimization Measure 16 – Install catalytic converter after-treatment control devices on some of the project's higher usage, higher emitting pieces of non-road, diesel-powered construction equipment during each sub-phase of the construction project. The determination of the number and type of equipment that shall be retrofitted with these devices shall be based on finalized emissions estimates calculated for each sub-phase. Caltrans and the Air Pollution Control District shall work together to determine the appropriate level of control prior to the opening of the bidding process for each sub-phase of construction.~~

This measure has been eliminated. Caltrans 2015 Standard Specification Section 4-9.02 (Air Pollution Control) requires that the contractor comply with all local air-pollution-control rules, regulations, ordinances and statutes that apply to work performed under the Contract, including those provided in Government Code § 11017 (Public Contract Code § 10231), which states that all state agencies shall comply with all local air pollution control rules, regulations and ordinances which are more stringent than any applicable state air pollution control statute, rule or regulation. In addition, Caltrans' cannot dictate that the contractor tamper with their equipment as this would invalidate equipment warranty and has the potential to result in damage to the equipment. This measure was eliminated from the 2006 EIR/FONSI through

preparation of a CEQA/NEPA Re- validations and Addendum to File completed on August 30, 2010.

6.2 Geology/Seismic and Soil Types (Incorporate by Reference)

6.3 Hazards and Hazardous Material

BMP Measure 1 – If suspected contaminated soil is discovered during construction of the project, all work would cease in the suspected contaminated area. The suspected material would be sampled in place to determine the content and concentration of the hazardous material. All hazardous materials found would be removed, handled, and disposed of in accordance with state and federal regulations. Impact/reason for BMP measure – This measure is intended to protect public and worker health and safety and to provide a plan for the proper handling of hazardous materials in the event that suspected materials are discovered during the construction of the project.

Impact/reason for BMP measure – The following measures (2 - 4) are intended to protect public health and safety and the health of the physical environment by containing and providing for the proper handling of known hazardous materials.

BMP Measure 2 – If asbestos-containing materials identified on Bridges #49-36 and #49-29 would be disturbed during construction, they would be treated as a hazardous material and disposed of by a licensed and certified asbestos abatement contractor. This would be done prior to any construction activities that would disturb the ACM to a point at which it could possibly become airborne.

BMP Measure 3 – A Notification for Renovation and Demolition of Asbestos Containing Materials would be submitted to the Regional Air Pollution Control District 10 days prior to the beginning of the project.

~~BMP Measure 4 – Peeling, lead-containing paint on Bridge #49-95 is to be removed and disposed of by a certified and licensed abatement contractor in conjunction with any planned demolition work associated with this project. All painted surfaces on Bridge #49-33 would be treated as lead-containing and handled using the same procedure described above for Bridge #49-95. This would occur only during any maintenance, demolition, or renovation activities associated with this project.~~

This measure does not apply to the Cholame Section or to the future Wye Section because there is no lead-based paint on any of the bridges identified

for removal in those sections and both bridges 49-95 and 49-93 were in previous sections of the *Corridor Project* that have already been constructed.

~~BMP Measure 5 – A notification of construction would be filed with the FAA, using FAA Form 7460-1, prior to the beginning of construction activities. Impact/reason for BMP measure – To notify the Federal Aviation Administration that construction will begin within the 3.2 kilometer (two mile) limit of the Paso Robles Municipal Airport.~~

This measure does not apply to the Cholame Section or to the future Wye Section. These sections are far more than two-miles away from the Paso Robles Municipal Airport.

BMP Measure 6 – Minimize single-lane control during construction to the maximum extent feasible so that emergency services would have the freest flowing traffic conditions available in the event of an emergency.

Impact/reason for BMP measure – Although State Route 46 is not a designated emergency evacuation route by the County Office of Emergency Services, it could be designated for such use in the event of a catastrophic emergency. Because of this, the above best management practice would be implemented to the greatest extent possible.

6.4 Hydrology, Floodplains, and Water Quality

Minimization Measure 1 – Existing culvert capacities would be analyzed and upgraded, extended, or replaced as necessary to follow the Caltrans cross-culvert criteria and federal standards for the proposed roadway widening. Treatments to the specific culverts outlined in Table 3.1.4-3 *(2006 EIR/FONSI)* will be completed as agreed upon between Caltrans and the U.S. Environmental Protection Agency (see italics below):

Two 12-foot by 10-foot box culverts at the White Canyon crossing will replace the existing 6-foot by 7-foot box culverts. The culvert inlet would be installed below stream grade. The culvert outlet would be raised to flatten the slope and a 2-foot tall concrete wall would be constructed inside the culvert at the inlet and outlet to help retain the sediment an prevent head-cutting upstream. Retention of sediment inside the culvert would encourage its use by migrating wildlife.

Minimization Measure 2 – The design of all new, widened, and re-constructed bridges would use the Caltrans bridge design guidelines and Federal floodplain standards and would comply with state and federal criteria. *The existing two-lane, 199-foot bridge will be replaced with two, 199-foot two lane bridges (one westbound and one eastbound). The distance between the bridge freeboard and the water surface elevation would be 6.85 feet.*

Minimization Measure 3 – ~~To mitigate for potential rises in water-surface elevations in Cholame Creek associated with raising the highway profile grade in the Cholame section area, the length and height of the two new bridges proposed in Cholame section, Alternatives 1 and 2 would be increased. In addition to increasing the length and height of the bridge, a series of box culverts placed under State Route 46 are being proposed to mitigate potentially unacceptable backwaters associated with the raising of the highway profile grade. These box culverts would be installed under any of the proposed build alternatives.~~

Minimization Measure 3 was prepared with the assumption that the base flood elevation in the vicinity of the proposed bridge would overtop the banks of the creek channel (Figure 3.1.4-1). This measure was written prior to conducting a detailed study showing that the base flood elevation would not overtop the banks of the creek channel in this area. Therefore, this measure has been deleted and a new measure (see below in italics) has been included to account for potential flooding of the roadway from the hillsides to the north.

Minimization Measure 4 - To prevent flows from the adjacent hillsides to the north from overtopping the roadway, the roadway and the two new bridges would be elevated.

Water Quality

Minimization Measure 1 – Approved design pollution prevention and treatment BMPs would be incorporated into the project design. Permanent, location specific BMPs would be determined by the project design team in conjunction with the district storm water coordinator and the Regional Water Quality Control Board.

Approved design pollution prevention and treatment BMPs have been incorporated into the project design. Permanent, location specific BMPs have been determined by the project design team in conjunction with the District Stormwater/NPDES Permit Coordinator. Where feasible, *the project will implement a combination of design pollution prevention infiltration areas (DPPIA) swales and/or strips that will infiltrate and treat the Water Quality Volume (WQV) from the 85th percentile 24-hour storm event. The following measures will be incorporated into this project to improve water quality: DPIAA strips along the facility will infiltrate WQV runoff from impervious areas. This method will decrease the velocity of discharge plus decrease the volume of sheet flow discharge through infiltration and allow for pollutant removal.*

- *DPIAA swales will be constructed to infiltrate and treat the WQV for concentrated flows coming from pavement and cut slopes.*

- *All slopes will be landform graded to blend with the existing natural topography and would be no steeper than a 45-degrees. This will improve revegetation efforts, reduce erosion and decrease maintenance costs. Use of dikes would be minimized to the extent possible to promote sheet flow to vegetated areas, promoting infiltration and improving water quality.*

Impact/reason for minimization measure – Caltrans is required by the NPDES permit to control the discharge of pollutants from Caltrans facilities, activities, and properties to the maximum extent practicable. These permanent BMPs would be designed to minimize impacts to water quality to the maximum extent practicable

Minimization Measure 2 – A Storm Water Pollution Prevention Plan (SWPPP) would be prepared, approved, and implemented prior to the start of any ground disturbing activities.

Impact/reason for minimization measure – The SWPPP would identify the BMP's that would be implemented to reduce or eliminate the potential for short-term impacts to water quality as a result of construction.

Impact/reason for BMP measure – The following BMP measures (3 – 9) are intended to minimize impacts to water quality during construction.

BMP Measure 3 – Sediment control barriers (example, silt fences, hay bales, drain inlet protection, gravel bags) would be used to prevent the movement of pollutants to surface bodies of water during storm events.

Sediment control barriers such as temporary large sediment barrier, temporary fiber rolls, temporary erosion control, stabilized construction site entrance/exit, street seeking, temporary check dam, drain inlet protection, gravel bags) would be used to prevent the movement of pollutants to surface bodies of water during storm events.

BMP Measure 4 – Existing vegetation would be preserved as much as possible.

BMP Measure 5 – All disturbed areas would be stabilized with vegetation or hard-surface treatment upon completion of construction in any specific area.

BMP Measure 6 – All inactive disturbed soil areas would be temporarily stabilized with both sediment and temporary erosion control 10 days prior to the beginning of the rainy season ~~(October 15th).~~

All inactive disturbed soil areas would be temporarily stabilized with both sediment and temporary erosion control prior to every predicted rain event. October 15th is no longer used to define the beginning of the rainy season.

~~BMP Measure 7 – No more than 20 acres of ground would be disturbed at any one-time during construction.~~

~~BMP Measure 8 – No more than 5 acres of ground would be disturbed at any one time during the rainy season (October 15th to April 15th), unless approved by the Resident Engineer.~~

Measures 8 and 9 above are being removed due to changes in the Construction General Permit (CGP) approved in September 2010. The 2010 CGP eliminated the acreage limits and now directs the contractor to implement the provision regarding Disturbed Soil Area (DSA) based on an individual projects Stormwater Pollution Prevention Plan (SWPPP). Additionally, the CGP does not define the "rainy" season due to the unpredictability of rain events in a given year. Rather, the CGP now requires a contractor to cover inactive DSA within fourteen days and apply permanent erosion control immediately upon completion of finished slopes or grade. When a rain event is predicted, which is defined as a 50% or greater chance of getting 0.1-inch or more of rain, the contractor is required to immediately protect all DSA, including stockpiles.

BMP Measure 9 – Erosion control methods such as hydroseeding, erosion control blankets, and emulsion would be used during the rainy season.

BMP Measure 10 – Caltrans would submit a Notice of Construction (NOC) to the RWQCB 30 days prior to the start of construction.

Caltrans would submit a Notice of Intent (NOI) to the SWRCB through the Stormwater Application and Report Tracking System (SMARTS). Construction activities may not commence until the SWPPP has been approved, uploaded to SMARTS and a Waste Discharge Identification (WDID) number issued for the project.

BMP Measure 11 – Temporary erosion and sediment control BMPs would be implemented at all times from ~~October 15th to April 15th~~.

Temporary erosion and sediment control BMPs would be implemented when a rain event is predicted, which is defined as a 50% or greater chance of getting 0.1-inch or more of rain. October 15th through April 15th is no longer used to define the beginning of the rainy season.

6.5 Noise

~~Minimization Measure 1~~

~~Receptor 1: Minimize the amount of cut on eastbound side to the greatest extent possible.~~

~~Minimization Measure 2 – Receptors 4b and 5: Construct 6-foot tall earthen berm between STA 109+40 and 117+00 on the eastbound side at the right of way line (Estrella Section, map sheet E8 and E9, Appendix A.1, Volume II)~~

~~Minimization Measure 3 – Receptor 17: Reduce cut to the greatest extent possible between STA 119+00 and 121+40.~~

Minimization Measure 4 – The telephone number of the Resident Engineer would be provided to residents in the event that a complaint or concern arises.

Minimization Measure 5 – Construction information would be posted in local news media prior to the start of each phase of construction.

Minimization Measure 6 – In areas where sensitive receptors are identified, temporary sound barriers consisting of sheet plywood on safety shape barrier may be used to reduce potential construction noise impacts.

Minimization Measure 7 – All equipment used in construction would have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators, intact and operational.

Minimization Measure 8 – All equipment operating on the project site would conform to the "Sound Control Requirements" of the Special Provisions that would be part of the contract and to Section 14-8.02 of Caltrans Standard Specifications.

Minimization Measure 9 – The Resident Engineer would schedule the noisiest construction activities during times least likely to disturb local residents.

Minimization Measure 4 – The telephone number of the Resident Engineer would be provided to residents in the event that a complaint or concern arises.

Minimization Measure 5 – Construction information would be posted in local news media prior to the start of each phase of construction.

Minimization Measure 6 – In areas where sensitive receptors are identified, temporary sound barriers consisting of sheet plywood on safety shape barrier may be used to reduce potential construction noise impacts.

Minimization Measure 7 – All equipment used in construction would have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators, intact and operational.

Minimization Measure 8 – All equipment operating on the project site would conform to the "Sound Control Requirements" of the Special Provisions that

would be part of the contract and to Section 14-8.02 of Caltrans Standard Specifications.

Minimization Measure 9 – The Resident Engineer would schedule the noisiest construction activities during times least likely to disturb local residents.

6.6 Topography and Visual Features (Incorporate by Reference)

6.7 Paleontological Resources (Incorporate by Reference)

6.8 Biological Resources

As described in the Biological Resources Chapter (Section 3.2), there have been extensive changes to the avoidance, minimization, and mitigation measures proposed for the Cholame Section in comparison to the 2006 EIR/FONSI. For consistency with the new formatting for the Biological Resources Chapter and reader clarity, the measures in this document have been renumbered with a prefix to match subsection headings.

In the Biological Resources Chapter (Section 3.2), measures are presented with their new numbering listed first, and the old numbering system from the 2006 EIR/FONSI is provided in parentheses. However, for ease of comparison with the 2006 EIR/FONSI, the presentation of the numbered measures has been reversed, such that the 2006 measure number is listed first, and the newly applied number is provided in parentheses. Changes to the 2006 measures are presented such that additions are italicized and deletions are struck out. For those measures that have been substantially altered or removed entirely, an explanation is provided below each measure. Measures that are struck out in ~~gray~~ have been removed because they are not applicable to the Cholame Sections. These measures include those that have already been implemented for the western sections, or those that will be implemented in the future during construction of the Wye Section.

Finally, this summary is structured so that the 2006 measures are listed in order, with newly proposed measures listed at the end of each subsection.

6.8.1 Vegetation

This summary section provides all of the measures included in the vegetation section of the 2006 EIR/FONSI, in the order they appeared in the 2006 EIR/FONSI. Since the release of the 2006 EIR/FONSI, Caltrans developed new environmental document standards and a template that discusses “vegetation” under two different subsections: Natural Communities (Section

3.2.1) and Plant Species (Section 3.2.3). Therefore, this section provides measures pertaining to both subsections.

For the new numbering system, a prefix of NC for natural communities or PLA for plant species has been applied.

~~2006 Mitigation Measure 1 – Impacts to blue oaks and blue oak woodland would be mitigated by restoring degraded blue oak woodland and conserving existing blue oak woodland in eastern San Luis Obispo County. Degraded blue oak woodland would be restored so that at least 147 mature trees would be established at a density similar to that of the affected stands. In addition, sufficient blue oaks would be planted to ensure the establishment of an additional 89 blue oaks to mitigate the loss of the individual trees in the project area. A total of 236 blue oaks would be re-established.~~

~~Impact/reason for mitigation measure – To reduce the impacts to blue oak woodlands to a less than significant level under CEQA.~~

Reason for removal – There are no blue oak woodlands in the Cholame Section.

~~2006 Minimization Measure 2 – The final project plans would delineate ESAs around the driplines of all oak trees that the project would not remove within the proposed right of way and temporary construction easements. No vehicle access within these ESAs would be permitted. During construction, the Resident Engineer and environmental monitor would determine and agree upon the exact placement of ESA markers, based on the project plans, and would determine and agree upon the appropriate method for marking the ESAs.~~

~~Impact/reason for minimization measure – To minimize construction impacts to remaining blue oaks and blue oak woodland~~

Reason for removal – There are no protected oak trees in the Cholame Section.

~~2006 Minimization Measure 3 – Fremont cottonwood woodland in the construction area and temporary construction access routes would be trimmed down to the ground, leaving the root structures in place so that the vegetation could re-sprout. These trimmed areas would be covered by a layer of clean river substrate (sand or cobble) to prevent damage to the underlying soil and root structure. This substrate would be removed upon completion of construction activities. Construction access would be limited to the minimum area required for bridge construction. Areas beyond that would be designated as Environmentally Sensitive Areas and off limits during construction. Designation of the ESA areas would follow the recommendations described in the Additional Avoidance and Minimization Measures (ESAs) section, page 122.~~

~~Impact/reason for minimization measure – To minimize impacts to Fremont cottonwood woodland~~

Reason for removal – There are no Fremont cottonwood woodlands in the Cholame Section.

~~2006 Minimization Measure 4 – To minimize impacts from noise and light to Fremont cottonwood woodland, a screening technique would be used. Examples of appropriate screening techniques include earthen berms, walls, and vegetation screens. The project development team would determine the appropriate method of screening during the final phases of project design.~~

~~Impact/reason for minimization measure – To minimize impacts to Fremont cottonwood woodland.~~

Reason for removal – There are no Fremont cottonwood woodlands in the Cholame Section. ~~2006 Mitigation Measure 5 – Direct, permanent impacts (based on acreage) to Fremont cottonwood woodland including areas permanently degraded by placing the bridges over it would be mitigated at a 3:1 ratio, with temporary impacts mitigated at a 1:1 ratio. The goal of this mitigation effort would be to mitigate these impacts in the Estrella River watershed.~~

~~Impact/reason for mitigation measure – To reduce the level of impact to Fremont cottonwood woodland to a negligible level.~~

Reason for removal – There are no Fremont cottonwood woodlands in the Cholame Section.

~~2006 Minimization Measure 6 – Within the entire Wye section, construction access would be limited to the minimum area required for construction, and areas beyond that would be designated as an ESA and off-limits. 4.6 meters (15.0 feet) of access beyond the cut and fill limits would be permitted through most of the Wye section, with more, if needed, at specific locations. Designation of the ESA areas would follow the recommendations described in the Additional Avoidance and Minimization Measures (ESA's) section, page 122.~~

~~Impact/reason for minimization measure – To minimize impacts to valley sink scrub habitat and crownscale populations.~~

Reason for removal – this measure pertains only to the Wye Section. It will be implemented during future construction of this section. Avoidance Measure NC-1 protects bush seepweed scrub within the Cholame Section.

~~2006 Minimization Measure 7 – Caltrans would designate the highway right of way in the Cholame Valley floor and the highway right of way encompassing stands of gypsum-loving larkspur as a Vegetation Management Area (VMA).~~

~~Caltrans would establish highway maintenance guidelines within the management area to preserve and promote the maintenance of valley sink scrub that would be incorporated in the new right of way.~~

~~Impact/reason for minimization measure – To improve the quality and expand the range of valley sink scrub habitat, crownscale, and gypsum-loving~~

Reason for removal – Given the complexities of gypsum-loving larkspur, additional botanical surveys were conducted to clarify whether larkspur plants within the Biological Study Area represented the non-sensitive parent species of gypsum-loving larkspur (*Delphinium gypsophilum*), or the sensitive subspecies of small-flowered gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *paryiflorum*). A Caltrans botanist surveyed the BSA in May 2019, after an above average rainfall year and determined that larkspur plants represented the parent species, not the sensitive small-flowered subspecies.

~~2006 Mitigation Measure 8 – For Wye Section, Alternative 8b, existing roadbeds to be abandoned would be removed. Caltrans would remove these sections of old roadbed and would restore the natural hydrology to promote the expansion of the valley sink scrub community.~~

~~Impact/reason for mitigation measure – To reduce impacts to valley sink scrub to a negligible level.~~

Reason for removal – This measure pertains only to the Wye Section. It will be implemented during future construction of this section.

~~2006 Minimization Measure 9 – Portions of the existing roadbeds to be abandoned in the Wye section would be removed and restored to match adjacent elevations. Crownscale would colonize the road removal areas naturally because they are on the same floodplain as the mapped population and are between unaffected patches of crownscale.~~

~~Impact/reason for minimization measure – To minimize impacts to crownscale in the Wye section of the project area.~~

Reason for removal – This measure pertains only to the Wye Section. It will be implemented during future construction of this section. Minimization Measure WET-1 addresses the treatment of the abandoned roadbeds in the Cholame Section.

~~2006 Mitigation Measure 10 – Caltrans would collect seed from gypsum-loving larkspur within the preferred alternatives' footprint for two years prior to construction. These seeds and the affected plants would be planted on the new north-facing fill slopes. The species has colonized highway fill slopes along State Route 46 on Antelope Grade. Transplanting the affected plants and planting seeds may establish new patches of gypsum-loving larkspur on the north facing fill slopes.~~

~~Impact/reason for mitigation measure – To compensate for impacts to gypsum-loving larkspur in the Shandon and Wye Sections of the project.~~

Reason for removal – Given the complexities of gypsum-loving larkspur, additional botanical surveys were conducted to clarify whether larkspur plants within the Biological Study Area represented the non-sensitive parent species of gypsum-loving larkspur (*Delphinium gypsophilum*), or the sensitive subspecies of small-flowered gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *paryiflorum*). A Caltrans botanist surveyed the BSA in May 2019, after an above average rainfall year and determined that larkspur plants represented the parent species, not the sensitive small-flowered subspecies

New measures proposed for Natural Communities (Section 3.2.1):

Minimization Measure NC-1: An Environmentally Sensitive Area (ESA) surrounding bush seepweed scrub habitat near PM 54.5 to 54.7 will be designated on the design plans and fencing will be established in the field to alert construction of the ESA and to avoid entering it for any reason. Construction access would be limited to the minimum area required for construction, which is 15 feet of access beyond the cut and fill limits with more, if needed, at specific locations.

Impact/reason for minimization measure – To avoid impacts to bush seepweed scrub habitat.

Avoidance Measure NC-2 – To protect White Canyon drainage as well as scale broom scrub temporary impacts would be limited to 15 feet off of the cut and fill. The area outside of this buffer will be designated and fenced as ESA on the project plans. Access to the White Canyon drainage will be limited to the minimum areas required for construction, defined as no more than 20 feet beyond the cut and fill areas for final grading. Scale broom scrub habitat outside of the minimum area will be designated as an Environmentally Sensitive Area.

Impact/reason for measure – To avoid impacts to scale broom scrub habitat and the sensitive wildlife species that occupy this habitat area.

Minimization Measure NC-3 – Scale broom (*Lepidospartum squamatum*) will be purchased commercially (if available) and applied as hydroseed for permanent erosion control at White Canyon. Seeds of the plant shall also be hand collected on-site for one to two years prior to the start of construction in case seeds are not commercially available at the time of construction. Collected seeds will either be incorporated into the hydroseed or will be hand broadcast.

Impact/reason for measure – To minimize impacts to scale broom scrub habitat and promote the establishment and spread of the habitat following project construction.

Minimization Measure NC-4 – Areas of scale broom habitat that are temporarily impacted by construction will be reseeded using a combination of locally collected and commercially sourced scale broom seed. Control of non-native vegetation such as Russian thistle will be implemented to reduce competition during scale broom habitat establishment.

Impact/reason for measure – To minimize impacts to scale broom scrub habitat and promote the establishment and spread of the habitat following project construction.

New measures proposed for Plant Species (Section 3.2.3):

Avoidance Measure PLA-1 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance of the north facing slopes in the project area which may provide suitable potential habitat for the protruding buckwheat.

Impact/reason for minimization measure – To minimize impacts to habitat suitable for protruding buckwheat in the Cholame Section.

Minimization Measure PLA-2 – Caltrans will collect seed from the protruding buckwheat plants within the project footprint for two years prior to construction. These seeds would be used in the hydroseed or hand broadcast on the new north-facing fill slopes for permanent erosion control.

Impact/reason for minimization measure – To minimize impacts to protruding buckwheat in the Cholame Section.

Additionally, an established population, of protruding buckwheat exists within the Palo Prieto Conservation Bank where credits will be purchased to mitigate for impacts to the San Joaquin kit fox. Preservation and enhancing habitat for the San Joaquin kit fox on lands held under the conservation bank may also preserve habitat for protruding buckwheat

Avoidance Measure PLA-3 – Historically known locations of crownscale will be delineated on project plans and Environmentally Sensitive Area fencing will be installed during construction to restrict access to these sites

Impact/reason for minimization measure – To minimize unintended impacts to crownscale in the Cholame Section of the project area.

6.8.2 Wildlife

This summary section provides all of the measures included in the wildlife section of the 2006 EIR/FONSI, in the order they appeared in the 2006 EIR/FONSI. Since the release of the 2006 EIR/FONSI, Caltrans developed new environmental document standards and a template that discusses "wildlife" under two different subsections: Animal Species (Section 3.2.4) and Threatened and Endangered Species (Section 3.2.5). Therefore, this section provides measures pertaining to both subsections.

For the new numbering system, a prefix of AMS for Animal Species or TES for Threatened and Endangered Species has been applied.

2006 Minimization Measure 11 (renumbered as TES-9 in this document) **-** A qualified biologist would be hired full time, by the construction contractor, to implement the April 1997 "USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance" (Appendix E). This person would also be responsible for biological monitoring requirements for other species, pre-construction surveys, and general monitoring of biological resources.

Impact/reason for minimization measure – The function of this position would be to insure the proper implementation of the avoidance and minimization measures for all species that could be in the project area. Specific duties would include monitoring for kit fox, pre-construction surveys, and establishment of ESA areas.

~~2006 Minimization Measure 12 – Caltrans would designate the highway right of way from STA 135+00 in the Cholame section to the end of the project as a VMA. Caltrans would establish highway maintenance guidelines within the management area to preserve and promote the maintenance of native plant and animal communities that would be incorporated into the new highway right of way. This would prevent or minimize activities that could harm specific species if they occur within the right of way, protecting habitat that is now subject to potentially harmful, unregulated activities.~~

~~Impact/reason for minimization measure – To improve and maintain habitat quality for the following species: California tiger salamander, western spadefoot toad, California horned lizard, western burrowing owl, mountain plover, California horned lark, grasshopper sparrow, Tulare grasshopper mouse, San Joaquin pocket mouse, and San Joaquin kit fox.~~

Reason for removal – This measure was originally designed to protect a sensitive subspecies of gypsum-loving larkspur (Delphinium gypsophilum), which does not occur within the project limits and protruding buckwheat. Protruding buckwheat only occurs on steep, north-facing slopes, therefore the establishment of ESAs to protect these slopes is a more effective minimization strategy than the designation of VMAs. Avoidance Measure

PLA-1 and Minimization Measure PLA-2 address the protection of protruding buckwheat in the Cholame Section.

2006 Minimization Measure 13 (renumbered as TES-4 in this document) – Equipment and materials storage areas shall be located ~~in areas~~ *within the proposed median (or between the existing highway and the proposed alignment) to the maximum extent practicable. If a median location is unavailable, then equipment and material storage areas shall be located in areas on the north side of the current Highway 46 alignment whenever feasible between PM 51.4 54.5* ~~with no small mammal burrows or areas greater than 671 meters (2200 feet) from potential breeding pools.~~

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders

~~2006 Minimization Measure 14 – Within the entire Wye section construction access would be limited for all alternatives to the minimum area required for construction. Areas beyond would be designated as an ESA. 4.6 meters (15.0 feet) of access beyond the cut and fill limits would be permitted with more if needed at specific locations. Designation of the ESA areas would follow the recommendations described in the Additional Avoidance and Minimization Measures (ESA's) section, page 122.~~

~~Impact/reason for minimization measure – To minimize impacts to sensitive wildlife species and their habitat within the Cholame Valley floor.~~

Reason for removal – This measure pertains only to the Wye Section.

~~2006 Minimization Measure 15 – For Wye Section, Alternative 8B, earthwork within 82 meters (270 feet) of potential aquatic habitat between STA 29+00 and 42+00 (kiloposts 73.1 to 74.0/postmiles 45.4 to 46.0) would occur between May 1 and October 31. Construction access would be limited to 4.6 meters (15.0 feet) beyond the cut and fill lines.~~

~~Impact/reason for minimization measure – To avoid impacts to red-legged frog habitat during the time of its potential use.~~

Reason for removal – This measure pertains only to the Wye Section.

~~2006 Minimization Measure 16 – Since Wye Section, Alternative 8B was selected, The following measure has been incorporated into the project:~~

~~A qualified biologist will conduct pre-construction surveys for California red-legged frogs within the project area within two days of initiation of project construction.~~

~~Any California red-legged frogs encountered will be reported to the Service immediately or as soon as practicable (e.g., the following business day if encountered at night).~~

~~California red-legged frogs found in harm's way will be captured and relocated to appropriate habitat as determined after discussions with Service staff.~~

~~All new sightings of California red-legged frogs within the project areas will be reported to the Service and the CNDDB.~~

~~Pre-construction meetings with the construction contractor and crew will be conducted to brief them on the potential presence of California red-legged frogs in the project areas and educate onsite workers in the identification and habitat requirements of California red-legged frogs, as well as the ramifications of take of listed species. The minimization measures outlined here will also be discussed.~~

~~To the maximum extent practicable, contractors will avoid all project-related activities including road construction, within 91.4 meters (300.0 feet) of all wetlands/water courses that provide suitable breeding and foraging habitat for the California red-legged frog.~~

~~Pesticide application will be avoided within 152.4 meters (500.0 feet) of all wetlands/water courses. Bank slope protection placed on creek channel banks will be designed for erosion control by means of riparian function enhancement. Designs utilizing native topsoil and riparian local stock are preferred (biotechnology, logs, willow wattles, potted willows, terracing, etc.).~~

~~Prior to commencing construction, Caltrans will coordinate with the CDFG to prepare a riparian vegetation replacement program for the project. Riparian vegetation removed as a result of the project will be replaced at a 3:1 ration.~~

~~California native species (local stock preferred) will be utilized in re-vegetation and habitat enhancement efforts associated with the project.~~

~~Within 91.4 meters (300.0 feet) of potential California red-legged frog breeding habitat, only water will be used for dust abatement.~~

~~Impact/reason for minimization measure – To avoid impacts to California red-legged frogs and their habitat.~~

Reason for removal – Measures to protect California red-legged frog have been combined with similar measures to protect California tiger salamander. See measures TES-1 through TES-7. Avoidance and Minimization Measure TES-7 references the conditions of the Biological Opinion for red-legged frogs.

~~2006 Minimization Measure 17 – Within the entire Wye section, construction access would be limited to the minimum area required for construction, and areas beyond would be designated as an ESA. Additional ESAs would be established, in the Estrella section, between STA 50+80 and 54+80 westbound, 55+00 and 65+00 eastbound, and 69+00 and 86+00 eastbound. 4.5 meters (14.8 feet) of access beyond the cut and fill limits would be permitted, with more if needed at specific locations. Designation of the ESA areas would follow the recommendations described in the Additional Avoidance and Minimization Measures (ESAs) section, page 122.~~

~~Impact/reason for minimization measure – To minimize impacts to western spadefoot toads and their habitat.~~

Reason for removal – This measure only pertains to the Wye and Estrella Sections. The avoidance and minimization measures proposed for California tiger salamander and California red-legged frog (measures TES-1 through TES-6) will adequately protect western spadefoot toad.

~~2006 Mitigation Measure 18 – Cholame Section, Alternative 1 would remove portions of the existing lanes adjacent to Cholame Creek. This would compensate for impacts to southwestern pond turtles by restoring 3.4 hectares (8.5 acres) of upland habitat adjacent to permanent and intermittent waters in the creek.~~

~~Impact/reason for mitigation measure – To enhance habitat for southwestern pond turtles and mitigate impacts to their habitat to a negligible level.~~

Reason for removal – While this measure addresses the protection of western pond turtles in the Cholame Section and is thus still relevant to this document, the action described in this measure is duplicative of the action described in Minimization Measure WET-1. Measure WET-1 better describes the restoration work to be completed in areas where the existing roadway will be abandoned. Further, design changes since the 2006 EIR/FONSI will move the roadway further from Cholame Creek and increase the acreage of restored areas. Additional measures to address the protection of western pond turtles include AMS-1 through AMS-3.

~~2006 Minimization Measure 19 – ESAs would be established at all drainages to minimize impacts to Other Waters. This would also minimize impacts to California horned lizard habitat. Designation of the ESA areas would follow the recommendations described in the Additional Avoidance and Minimization Measures (ESAs) section, page 122.~~

~~Impact/reason for minimization measure – To minimize construction related impacts to California horned lizards.~~

Reason for removal – While this measure addresses the protection of horned lizards in the Cholame Section and is thus still relevant to this document, the

establishment of ESA's surrounding wetlands is already described in Minimization Measure WET-2. Therefore, this measure has been removed to simplify the list of environmental commitments.

2006 Minimization Measure 20 (renumbered as AMS-3 in this document) – ~~Pitfall traps with drift fences would be placed within construction areas in the seven drainages identified in the environmental impacts section for several days prior to construction.~~ *Prior to clearing and grubbing and collection of topsoil at White Canyon and Cholame Creek, a qualified biologist will supervise the installation of exclusion fencing. Within the exclusion area, shrubs will be initially trimmed by hand or using a trimmer and a potato rake would be used to gently comb the ground surface for any buried wildlife (e.g., legless lizards, horned lizards).* Captured individuals would be relocated *downstream of the project on the south side of SR 46* to avoid direct mortality from construction.

Impact/reason for minimization measure – To minimize construction related impacts to California horned lizards.

Reason for alteration – Since publication of the 2006 EIR/FONSI, it has been determined that pitfall traps may be harmful to these sensitive lizard species. Therefore, a new method for identifying and relocating wildlife is proposed here.

2006 Minimization Measure 21 (renumbered as measure AMS-4 in this document) – Initial habitat disturbance and construction ~~in the Pine Creek (kilopost 65.2, postmile 40.5), Shimmin Canyon (kilopost 68.1, postmile 42.3), an unnamed drainage at kilopost 69.8 (postmile 43.4), McMillan Canyon (kilopost 73.2, postmile 45.5),~~ *at* Cholame Creek bridge~~s~~ #49-29 ~~and #49-95~~, and White Canyon (~~kilopost 85.5,~~ postmile 53.1) ~~drainage's~~ would occur between April and October to ensure that horned lizards are active on the surface, and therefore able to be captured and relocated.

Impact/reason for minimization measure – To minimize construction related impacts to California horned lizards.

2006 Minimization Measure 22 (renumbered as measure AMS-5 in this document) – ~~All disturbance within 50 meters (164 feet) of occupied burrowing owl burrows would be mitigated per the Santa Cruz Predatory Bird Research Group's burrowing owl "on-site mitigation guidelines," which are summarized below (http://www2.ucsc.edu/scpbrg/mitigation.htm). If these guidelines are updated prior to construction, then the updated guidelines should be implemented.~~ All uncultivated grounds to be disturbed during construction should be surveyed for potential burrows less than 30 days prior to ground disturbance. *If a burrowing owl is discovered within the project limits or within 500 feet of the construction activities, a buffer zone for the burrow or burrow complex will be defined. Between February 1 and August*

31 (nesting season), the buffer shall be 500 feet. During the fall or winter (September 1- January 30), the buffer shall 250 feet. Burrowing owls will not be disturbed at any time.

~~Occupied burrows must be avoided between February 1 and August 31 due to nesting activities, unless California Department of Fish and Game personnel verify that egg-laying has not begun or that juveniles are capable of independent foraging.~~

~~Any burrow encountered between September 1 and January 31 should be carefully excavated by hand after placing one-way doors at entrances for 48 hours. Flexible plastic pipe should be inserted into burrows during excavation to provide an escape route for any remaining owls or other occupants.~~

~~Disturbed burrows shall be replaced with artificial burrows at a 1:1 ratio within 50-75 meters (164-246 feet) of the disturbed burrows, but at least 50 meters (164 feet) from the construction area.~~

Impact/reason for minimization measure – To minimize potential impacts to burrowing owls in the project area.

Reason for alteration – Implementation of AMS 5 will effectively protect burrowing owl from disturbance during construction.

2006 Minimization Measure 23 ~~– Artificial burrows for burrowing owls would be constructed on property purchased for kit fox habitat mitigation.~~

~~Impact/reason for minimization measure – To enhance burrowing owl habitat on the property used for San Joaquin kit fox mitigation and to offset project impacts to occupied burrows and potential burrow sites.~~

This measure has been omitted. Implementation of AMS 5 will effectively protect burrowing owl from disturbance during construction.

2006 Minimization Measure 24 (renumbered as measure AMS-6 in this document) – ~~At all locations east of Whitley Gardens, *P*~~re-construction surveys would be performed for California horned lark and grasshopper sparrow where grasslands, including within the existing right of way, are to be cleared with machinery between March 15 and July 31. If a*n* occupied nest is found~~, vegetation would not be cleared within 50 meters (164 feet) of that nest until that nest is abandoned or a permit is obtained from the USFWS to remove the nest~~ *within the project limits or within 250 feet of the project limits, a 250 foot buffer shall be defined to provide protection to the nest and its occupants until it is determined that the fledglings can fly on their own and are no longer dependent on their nest.*

Impact/reason for minimization measure – To minimize potential impacts to nesting California horned larks and grasshopper sparrows.

This buffer distance for this measure has been increased in response to more stringent guidelines released since the 2006 EIR/FONSI.

2006 Mitigation Measure 25 (renumbered as measure WET-1 in this document) – Abandoned road sections resulting from ~~any of~~ the ~~Wye section alternatives,~~ Cholame Section - *North Modified Alternative (Option A)* ~~Alternative 1, Shandon Section Alternative 2, and Estrella Section Alternative 8N~~ would be removed and restored to grassland. ~~Each acre of on-site mitigation would reduce the permanent impacts that must be mitigated by one acre.~~ *The restoration process will include the removal of asphalt and roadbed followed by regrading of the roadway to blend in with the contours of the surrounding landscape. Restored areas would be revegetated using California native species, with local stock used when practicable.*

Impact/reason for mitigation measure – ~~To mitigate on-site for impacts to San Joaquin kit fox habitat.~~ *To offset impacts to jurisdictional areas, as well as other sensitive species (e.g., California Tiger Salamander, California Red-legged Frog, San Joaquin Kit Fox).*

2006 Minimization Measure 26 (renumbered as measure TES-10 in this document) – Culverts for wildlife passage would be incorporated into the project to minimize impacts to San Joaquin kit fox. Culverts for wildlife passage would be a minimum of ~~91 centimeters (~~36 inches~~)~~ in diameter and would be placed, where topography would allow, at a minimum *of* ~~0.5 kilometer (~~0.3 mile~~)~~ intervals. Culverts would not be placed at ~~0.5 kilometer~~ *0.3 mile* intervals where drainage culverts or bridges greater than ~~91 centimeters (~~36 inches~~)~~ are already proposed. ~~Also, large box culverts would be placed as cattle crossings on both State Routes 41 and 46, east of the wye, to facilitate livestock movement and to make the area within the Wye more accessible for wildlife~~.

Impact/reason for minimization measure – To minimize the barrier effect of the highway on all species, including San Joaquin kit fox.

2006 Minimization Measure 27 (renumbered as measure TES-11 in this document) – 1 meter wire mesh (with opening less than ~~5 centimeters or~~ 2 inches) drift fencing would be placed parallel to the highway or angled away from the highway, for ~~25 meters (82 feet)~~ *100 feet* from the inlets and outlets of drainage culverts and kit fox specific culverts to encourage their use.

Impact/reason for minimization measure – To encourage the use of the proposed wildlife passage culverts.

2006 Mitigation Measure 28 (renumbered as TES-12 in this document) – Offsite mitigation for San Joaquin kit fox habitat impacts would be accomplished primarily through funding conservation easement purchases or by purchasing credits in an approved mitigation bank in the project vicinity.

Offsite compensatory mitigation ratios would be 4:1 for permanent impacts ~~between kilopost 60.5 (postmile 37.6) and kilopost 90.6 (postmile 56.3), 3:1 between Airport Road and Jardine Road, and 2:1 between Jardine Road and kilopost 60.5 (postmile 37.6).~~ Temporary impacts would be mitigated offsite at a ratio of one-third: one (1/3:1).

Impact/reason for mitigation measure – To reduce the level of impact to San Joaquin kit fox and to compensate for the take of kit fox habitat.

Note on measure – Caltrans has already purchased a portion of the San Joaquin kit fox mitigation credits from the Palo Prieto Conservation Bank and will purchase the additional credits upon completion of the Supplemental Environmental Document for the State Route 46 *Corridor Improvement Project*.

2006 Mitigation Measure 29 (renumbered as TES-13 in this document) – Enhancements proposed to reduce the impacts of the proposed project on San Joaquin kit fox include funding offsite mitigation.~~, enhancement, and site maintenance. Habitat enhancement projects may include the construction of artificial dens. Artificial dens would be constructed on properties from which conservation easements are purchased as mitigation for impacts resulting from this project, properties purchased outright for mitigation, on other private lands deemed suitable by the USFWS and the CDF&G *CDFW*, or on public lands.~~

Impact/reason for mitigation measure – To reduce the level of impact to San Joaquin kit fox and to compensate for the take of kit fox habitat.

~~2006 Minimization Measure 30 – In the Estrella Section, at least one week prior to tree removal, the on-site environmental monitor will construct one-way bat exclusion devices at all tree cavities that are potential bat roosts. The exclusion devices would likely be constructed from screen or other material as recommended in guidelines from Bat Conservation International. The one-way exclusion devices would allow any bats in tree cavities to exit at night but would prevent re-entry and force the bats to re-locate to alternate roosts outside of the construction area.~~

~~Impact/reason for minimization measure – To minimize impacts to sensitive bat species.~~

Reason for removal – This measure was implemented during construction of the Estrella Section (Union and Whitley 1 Segments) and is being removed because it does not apply to the Cholame Section.

2006 Minimization Measure 31(renumbered as measure AMS-7 in this document) – For ~~Estrella Section, Alternative 9N and for both Cholame alternatives if~~ *replacement of* Bridge #49-29 ~~were to be removed~~, bats would be excluded from roosts on the existing bridge between ~~October and March~~

October 15 and November 15. *The exclusion must remain in place during the rainy season until the bridge can be demolished in May per jurisdictional permit conditions.*

- *The Contractor shall develop a "bat exclusion" plan that will outline the methods and techniques for exclusion with the least possible level of disturbance. At a minimum this plan should attempt to install exclusion devices during the winter and early spring months (mid-November through May).*

- *The materials (i.e. netting or plastic sheeting) as well as the assembly of the exclusion shall not inadvertently trap bats or birds. It must be monitored weekly and repaired as soon as an issue arises. Foam may also be employed to fill up the joint and prevent access into the crevice once it has been determined that all bats have excavated the bridge.*

- *A qualified biologist will be present during the entire exclusion process to confirm the absence of bats, approve the quality of the work, and to prevent any potential impacts to bats.*

Impact/reason for minimization measure – To minimize impacts to sensitive bat species.

Reason for alteration – bat exclusion protocols have been revised since publication of the 2006 EIR/FONSI

~~2006 Minimization Measure 32 – For both Shandon section alternatives, bridge deck removal of Bridge #49-95 would occur between October and March to avoid affecting night roosts during the maternity season.~~

~~Impact/reason for minimization measure – To minimize impacts to sensitive bat species.~~

Reason for removal – This measure does not apply to the Cholame Section. During construction of the Shandon Section (Whitley 2A and 2B) bridge decks were ultimately removed during summer months due to permit requirements from regulatory agencies.

2006 Minimization Measure 33 (renumbered as measure AMS-8 in this document) **–** ~~For both Cholame section alternatives, if the Cholame Creek Bridge #49-29 were to be removed, then c~~ *C*onstruction of new roosts on the new Cholame Creek Bridges would occur prior to bats being excluded from the existing Bridge #49-29.

Impact/reason for minimization measure – To minimize impacts to sensitive bat species.

~~2006 Mitigation Measure 34 – To replace the lost night roost habitat resulting from bridge removals, all new bridges would incorporate bat-friendly features:~~

- ~~Minimize sandblasting: a final surface treatment under box-girder bridges often includes sandblasting. This smoothes the surfaces and, unfortunately, removes any surface irregularities and roughness that bats can grasp while roosting. If the bridge construction includes sandblasting or otherwise smoothing-out of external or internal surfaces under the bridges, all surfaces should be left rough within a few inches of the insides of corners that are 90 degrees or less. This can be accomplished by placing a small board in the corners while sandblasting to block the treatment.~~
- ~~Construct grooves or ridges: small grooves or ridges could be built into each corner underneath the bridges. Bats often grasp the slightest irregularities, such as the small ridges of concrete resulting from seams between boards used in the concrete forms.~~

~~Impact/reason for mitigation measure – To mitigate for the loss of bat roosts in the project area.~~

This measure has been omitted and replaced with AMS 9 (2006 Mitigation Measure 36 below) which will serve to replace both day and night roosting habitat.

~~2006 Mitigation Measure 35 – Compensatory mitigation must be considered for Estrella Section, Alternative 9N because it would remove a bridge that is a day roost and may be a maternity roost for California special concern species. One option is to design the new bridges with soffit openings to allow bats access into wooden boxes within the concrete box girder. Another option would be to construct bat roosts offsite. A potential location would be at the proposed Fremont cottonwood woodland mitigation site adjacent to the Estrella River.~~

~~Impact/reason for mitigation measure – To compensate for the loss of day roosts and maternity roosts for sensitive bat species.~~

Reason for removal – This measure does not apply to the Cholame Section. The measure was successfully implemented, and bat habitat was incorporated into the new Estrella Bridge.

2006 Mitigation Measure 36 (renumbered as measure AMS-9) – *The new Cholame bridges will be designed with bat habitat to account for the loss of roosting habitat on the existing bridges. Five bat boxes will be incorporated into each of the two new bridges (10 bat boxes total). The boxes will be installed facing to the east where they capture maximum morning and direct sunlight for warmth. The boxes will be close to the bridge deck to maintain a consistent temperature. At least one of the bat boxes will be suitable for night roosting.* ~~Compensatory mitigation must be considered for both Cholame~~

~~alternatives if they would remove Bridge #49-29. This bridge contains at least 600 bats and is most likely a maternity roost for California special concern species. Each Cholame alternative has three options for compensatory mitigation:~~

~~Leave Bridge #49-29 in place.~~

~~Modify abandoned buildings to enhance them as bat roosts.~~

~~Construct bridges with modifications to allow bat roosting. The new bridge designs for either Cholame section alternative could replace the bat roosts. Any bridge construction modifications that provides accessible interior spaces or crevices that allow bats close to the sun-heated bridge deck would create suitable habitat. Expansion joints in girder or box construction bridges create suitable habitat. Pre-cast twin-beam construction is known to provide maternity roosts for high concentrations of crevice-roosting bats such as those on the existing bridge. With a concrete box girder, bats would have to be allowed inside the box girder (but contained in wooden boxes) through modified weep holes or other openings, or external features would have to be added to create suitable crevices near the bridge deck.~~

Impact/reason for mitigation measure – To compensate for the loss of roosts for sensitive bat species.

Reason for modification – the design phase of the Cholame Section is further along than it was at the time the 2006 EIR/FONSI was published, therefore the design and placement of the bat boxes has already been determined.

~~2006 Minimization Measure 37 – All of the Wye section alternatives would construct two new bridges over Cholame Creek. The bridges would be 120 and 140 meters (394 and 459 feet) in length. The bridges should be designed so they may be successful as crossing structures for pronghorn antelope (in addition to many other species).~~

~~Impact/reason for minimization measure – To reduce the impact of the barrier effect of the highway to a less than substantial level.~~

Reason for removal – This measure pertains only to the Wye Section. It will be implemented during future construction of this section.

~~2006 Best Management Practice Measure 38 – The population of pronghorn antelope in the Wye section of the project area would be monitored for a period of five years in order to determine the usage of the undercrossing structures. The large undercrossings proposed with this project will offer a good opportunity to further the knowledge of pronghorn behaviors in relation to roads and crossing structures.~~

~~Impact/reason for BMP measure – To determine the most effective way to mitigate for the barrier effects of the highway expansion on pronghorn antelope.~~

Reason for removal – This measure pertains only to the Wye Section. It will be implemented during future construction of this section.

~~2006 Best Management Practice Measure 39 – Fencing near the pronghorn antelope crossing structure would have to be modified to promote the use of the structure. Right of way fences that parallel the highway must not do so at the undercrossings. Fences would be built 0.4 kilometers (0.25 miles) or more away from the crossing structure and must have smooth bottom wires at least 508 millimeters (20 inches) from the ground. Modifying these fences would benefit not only wildlife species in the Cholame Valley but the movement of livestock as well.~~

~~Impact/reason for BMP measure – To promote the successful use of wildlife/pronghorn antelope crossing structures in the project area.~~

Reason for removal – This measure pertains only to the Wye Section. It will be implemented during future construction of this section.

~~2006 Mitigation Measure 40 – Caltrans will commit $20,000 towards the retrofit and/or the removal of abandoned fences on public lands within the range of the County's pronghorn antelope herd.~~

~~Impact/reason for BMP measure – To offset temporary habitat fragmentation related to construction activities.~~

Reason for removal – This measure will be implemented during construction of the Wye Section. Implementation of this measure will ultimately benefit the pronghorn herd in the greater Cholame Valley as a whole, including those pronghorn that utilize grasslands specifically within the Cholame Section.

~~Minimization Measure 41 – Prior to removing riparian vegetation at the Estrella River between February 15 and July 15, the environmental monitor will survey the riparian vegetation for nesting birds. Any nesting birds found will be avoided until the birds have fledged. A 30 meter (100 foot) buffer will be applied to prevent birds from abandoning their nests due to construction activities.~~

~~Impact/reason for minimization measure – To minimize impacts to migratory birds.~~

Reason for removal – This measure pertains only to the Estrella Section. During construction riparian vegetation was removed prior to February 15th, so nesting bird surveys were not needed.

2006 Minimization Measure 42 (renumbered as measure AMS-10 in this document) – Swallow netting would not be placed on the Cholame Creek Bridges (Bridges #49-29 and 49-95) ~~and the Estrella River Bridge (Bridge #49-33)~~ because bats use these bridges. Swallow netting here would entangle bats and potentially cause mortality. ~~At the Estrella River Bridge, riparian vegetation and oak trees that would be removed during construction would be removed between July 15 and February 15. Otherwise, surveys for nesting birds will have to be completed before vegetation removal, and construction would be delayed if nesting migratory birds were found. The Cholame Creek Bridge decks would be removed between October 1 and February 28 to avoid the need to remove occupied nests and to avoid the bat maternity roosting season.~~

Impact/reason for minimization measure – To minimize potential bat population impacts that would result from minimization measures for migratory birds.

Reason for modification – Portions of this measure that do not pertain to the Cholame Section have been struck out. Additionally, during construction of previous sections of the *Corridor Project* bridge decks needed to be removed during summer months to avoid impacts to wetlands and other waters, as required by regulatory agencies. Therefore, the timing of bridge removal has been removed from this measure.

2006 Minimization Measure 43 (renumbered as measure AMS-11 in this document) – At ~~the Estrella River Bridge,~~ the White Canyon culvert at ~~kilopost 85.6 (~~postmile 53.2~~) and the culverts at kiloposts 69.8 and 90.8 (~~postmile~~s 43.4 and~~ 56.4~~),~~ nests would be removed prior to ~~March 1~~ *February 15* and then weekly thereafter as long as swallows attempt to nest.

Impact/reason for minimization measure – To minimize impacts to swallows.

~~2006 Minimization Measure 44 – For deer, minimum 3.7 meter by 3.7 meter (12 foot by 12 foot) box culverts that would not carry drainage should be placed at two locations, coupled with deer fencing. This would maintain connectivity for deer and all other species in areas of concentrated resources and movement corridors. Providing these crossings would also reduce the chance of vehicle collisions with deer, which can be fatal both to drivers and deer. The locations include: at kilopost 52.9 and 60.7 (postmile 32.9 and 37.7), and at the Dry Creek crossing~~

~~Impact/reason for minimization measure – To reduce the barrier effect of the highway on migratory wildlife species and to increase the safety of the traveling public~~

Reason for removal – This measure pertains to the Estrella Section (Union Segment and Whitley 1 Segment). The referenced culverts were successfully installed.

~~2006 Minimization Measure 45 – Environmentally Sensitive Areas (ESAs) would be designated for grassland species throughout the Wye section, for blue oaks and blue oak woodland, gypsum-loving larkspur, wetlands, crownscale, valley sink scrub, Fremont cottonwood woodland, western spadefoot toad, California horned lizard, and California red-legged frog. In general, construction access would be limited to the minimum required area to work. Most ESAs would restrict access to areas further than 3.0 meters (9.8 feet) from the cut and fill limits except where more space is required at, for example, bridge locations. Final project plans would include ESA locations for each construction phase segment. ESAs would be established in the field according to project plans and would be identified by a method agreed upon by the Resident Engineer and the Project Environmental Monitor. Methods of identifying ESAs include ESA fencing and staking or flagging the boundary of the ESA area.~~

~~Impact/reason for minimization measure – To minimize impacts to sensitive biological resources.~~

Reason for removal – This measure pertains to the Wye Section. Generally, ESA fencing has been successfully implemented on all completed or in progress phases of the *Corridor Project* and will continue to be utilized in future segments. Measures that pertain to the establishment of ESA's in the Cholame Section include NC-1, WET-3, PLA-1, PLA-3, AMS-3, and TES-6.

2006 Mitigation Measure 46 (renumbered as WET-4 in this document) – All impacts to ~~wetlands and~~ Waters of the U.S. would be fully mitigated~~, within the project area~~, in accordance with the required United States Army Corps of Engineers Section 404 Individual Permit and Nationwide Permits.

Impact/reason for mitigation measure – To comply with the Federal Clean Water Act

Note on measure – Due to increases in the mitigation ratios and requirements of regulatory agencies since the release of the 2006 EIR/FONSI, mitigation can no longer be fully accomplished onsite. Offsite mitigation for the Corridor Project will occur at Centennial Creek within the City of Paso Robles. Wetlands were struck out of this measure since there are not wetlands that would be impacted as a result of construction of the Cholame Section.

New measures proposed for Animal Species (Section 3.2.4):

Avoidance Measure AMS-2 – A biological monitor qualified to monitor western pond turtles shall be onsite prior to initial ground disturbance along

the route of the existing alignment (i.e., during roadbed removal) to monitor and salvage western pond turtles or other wildlife that may not have been discovered during pre-construction surveys.

Impact/reason for mitigation measure – to avoid direct mortality or injury of western pond turtles and other sensitive wildlife species.

New measures proposed for Threatened and Endangered Species (Section 3.2.5):

Avoidance Measure TES-1 – Preconstruction meetings with the construction contractor and crew will be conducted to brief them on the potential presence of California tiger salamander, California red-legged frog, and other sensitive wildlife species in the project area, and educate onsite workers in the identification and habitat requirements of wildlife, as well as the ramifications of take of a listed species. The minimization measures outlined will also be discussed.

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders, California red-legged frogs, and other sensitive wildlife species

Avoidance Measure TES-2 – A qualified biologist will conduct preconstruction surveys for California tiger salamander, California red-legged frog, and other sensitive species within two days of the initiation of project construction. Any encounter of a listed species will be reported to USFWS immediately or as soon as practicable (i.e., the following business day if encountered at night). Listed species that are found in harm's way will be captured and relocated to appropriate habitat in consultation with USFWS.

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders, California red-legged frogs, and other sensitive wildlife species

Avoidance Measure TES-3 **–** Earthwork within 270 feet of California tiger salamander or red-legged frog aquatic habitat will be completed between May 1 and October 1.

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders, California red-legged frogs, and other sensitive wildlife species

Avoidance Measure TES-5 **–** Pesticide application will be avoided within 500 feet of all wetlands/water courses.

Impact/reason for minimization measure – To reduce potential take of California tiger salamanders and California red-legged frog

Avoidance Measure TES-6 **–** All areas greater than 15 feet beyond the proposed cut/fill limits would be off-limits to construction equipment within areas of the project with the potential to impact California tiger salamander and California red-legged frog.

Impact/reason for minimization measure – To reduce effects to California tiger salamanders and red-legged frogs

Avoidance and Minimization Measure TES-7 **–** Caltrans will comply with the conditions of the 2005 Biological Opinion issued by USFWS (1-8-03-F-59) that pertain to California tiger salamander and red-legged frog (Appendix E).

Impact/reason for measure – to protect California tiger salamander and California red-legged frog and comply with regulations set forth in the Biological Opinion issued by USFWS.

Minimization Measure TES-8 **–** If construction begins between March 20 and August 31, at least two protocol level surveys during Periods I, II, or V will be conducted prior to the beginning of construction. The protocol level surveys will be replicated each spring that construction activities occur. if a Swainson's hawk nest is detected within the project limits or within 0.25 miles of construction activities, a buffer zone for the nest will be defined in consultation with California Department of Fish and Wildlife.

Impact/reason for mitigation measure – To reduce impacts to Swainson's hawk.

Avoidance and Minimization Measure TES-14 – Caltrans will comply with the conditions of the 2005 Biological Opinion issued by USFWS (1-8-03-F-59) that pertain to San Joaquin Kit Fox and the 2081 Incidental Take Permit issued from CDFW in 2007 (No. 2081-2007-020-04). See Appendix E and F Respectively.

Impact/reason for measure – to protect San Joaquin Kit Fox and comply with regulations set forth in the Biological Opinion issued by USFWS and Incidental Take Permit from CDFW.

6.8.3 Invasive Species (New Section)

Since publication of the 2006 EIR/FONSI, Caltrans has made a commitment to avoid and minimize the spread of invasive species, therefore, all of the below listed measures have been proposed in this document. All invasive species measures have a prefix of IS.

Minimization Measure IS-1 – Only clean fill shall be imported. When practicable, invasive exotic plants in the project site shall be removed and properly disposed. All vegetation removed from the construction site shall be taken to a landfill to prevent the spread of invasive species.

Avoidance Measure IS-2 – Construction equipment shall be free of excessive dirt that may contain weed seed before entering the construction site. If necessary, wash stations, either on-site or off-site, shall be established for construction equipment under the guidance of Caltrans to avoid or minimize the spread of invasive plants and/or seed within the construction area.

Minimization Measure IS-3 – Proper removal protocol for tree of heaven shall be followed:

- Tree of heaven seedlings shall be pulled mechanically or by hand, by removing as much root material as possible.
- Tree of heaven seedlings shall be cut at the base and an appropriate chemical herbicide shall be painted across the stump with a paint brush, such that the cambium layer (just inside the bark ring) is completely covered. The herbicide must be applied to the cut surface within five minutes of cutting to ensure uptake of the chemical before the plant can seal off the cut area. Cut-stump injections of an appropriate herbicide may be used in addition to the cut and paint method described above. Herbicide application shall be conducted by licensed and experienced Caltrans staff or a licensed and experienced contractor.
- For trees that occur near wetlands, chemical treatments shall use a glyphosphate-based herbicide approved by the U.S. Fish and Wildlife Service, such as Aquamaster® or Rodeo®;
- If any re-sprouting of trees occurs, a follow-up control strategy of foliar herbicide spraying (applying to leaves) should be completed. Licensed and experienced Caltrans staff or a licensed and experienced contractor shall use a hand-held sprayer to apply herbicide to leaves and be supervised by a certified arborist or qualified biologist that can adequately identify tree of heaven. Follow up spraying shall occur no sooner than 30 days after the tree of heaven have been removed, and no later than 60 days. Foliar applications of herbicide shall not occur when wind speeds are more than 3 miles per hour

Minimization Measure IS-4 – Herbicide use shall be appropriate for the target species, and shall follow the below guidelines:

- All precautions shall be taken to ensure that no herbicide is applied to native vegetation;
- Herbicides shall not be applied on or near open water surfaces (no closer than 100-feet from open water);
- Herbicide spraying shall not occur when wind speeds are more than 3 miles per hour;
- No herbicides shall be applied within 24 hours of forecasted rain;
- Application of all herbicides shall be done by qualified Caltrans staff or contractors to ensure that overspray is minimized, that all applications are made in accordance with the label recommendations, and with implementation of all required and reasonable safety measures. A safe

dye shall be added to the mixture to visually denote treated sites. Application of herbicides shall be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins;

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

Avoidance Measure IS-5 – Invasive species listed in the Cal-IPC Invasive Plant Inventory shall not be included in the Caltrans erosion control seed mix or landscaping planting plans.

Avoidance Measure IS-6 – The contract specifications for permanent erosion control will require the use of regionally appropriate California native forb and grass species that occur in the same general geographic area as the project site.

Avoidance Measure IS-7 – Mulches used on the project will be from source materials that will not introduce exotic species.

6.8.4 Wetlands & Vernal Pools

This summary section provides all of the measures included in the Wetlands and Vernal Pools section of the 2006 EIR/FONSI, in the order they appeared in the 2006 EIR/FONSI. For the new numbering system, a prefix of WET has been applied to these measures.

Minimization Measure WET-1 (2006 Mitigation Measure 25) – Abandoned road sections resulting from ~~any of~~ the ~~Wye section alternatives,~~ Cholame Section *North Modified Alternative (Option A)* ~~Alternative 1, Shandon Section Alternative 2, and Estrella Section Alternative 8N~~ would be removed and restored to grassland. ~~Each acre of on-site mitigation would reduce the permanent impacts that must be mitigated by one acre~~*. The restoration process will include the removal of asphalt and roadbed followed by regrading of the roadway to blend in with the contours of the surrounding landscape. Restored areas would be revegetated using California native species, with local stock used when practicable.*

Impact/reason for mitigation measure – ~~To mitigate on-site for impacts to San Joaquin kit fox habitat.~~ *To offset impacts to jurisdictional areas, as well as other sensitive species (e.g., California Tiger Salamander, California Red-legged Frog, San Joaquin Kit Fox).*

Minimization Measure WET-2 – Prior to constructing the new box culverts at White Canyon and the new bridges at Cholame Creek, six inches of the native sandy substrate in both drainages would be stockpiled to be reapplied along the bottoms of the drainages following completion of work in each location. This would avoid the need to import and apply non-native material in the waterways.

Impact/reason for measure – to minimize impacts to jurisdictional areas within in Cholame Creek.

Avoidance Measure WET-3 – Environmentally Sensitive Areas within and adjacent to White Canyon and Cholame Creek will be designated on project plans and high visibility fencing will be installed during construction to prevent ground disturbance at a distance no greater than 15 feet and 20 feet, respectively, off the cut and fill lines.

Impact/reason for measure – to avoid and protect wetlands and other waters.

Mitigation Measure WET-4 (2006 Mitigation Measure 46) – All impacts to ~~wetland and~~ Waters of the U.S. would be fully mitigated~~, within the project area~~, in accordance with the required United States Army Corps of Engineers Section 404 Individual Permit and Nationwide Permits.

Impact/reason for mitigation measure – To comply with the Federal Clean Water Act

Note on modifications to measure – Due to increases in the mitigation ratios and requirements of regulatory agencies since the release of the 2006 EIR/FONSI, mitigation can no longer be fully accomplished onsite. Offsite mitigation for the Corridor Project will occur at Centennial Creek within the City of Paso Robles.

Minimization Measure WET-5 – Permitting requirements will be included as contract specifications and implemented during construction in order to protect jurisdictional areas and reduce the potential for erosion and sedimentation during the rainy season.

Impact/reason for measure – to protect creeks and other jurisdictional areas and comply with regulatory permits.

Minimization measures 47 – 50 were intended to minimize impacts to vernal pool resources in the 2006 EIR/FONSI. None of these measures pertained to the Cholame Section because vernal pools would not be affected by construction of this section. Therefore, all of these measures have been removed.

~~2006 Minimization Measure 47 – For both Estrella Section Alternatives 8N and 9N: Construct south side cut slope from STA 55+60 to STA 58+90 at a 1:1.5 slope to minimize potential impacts to the hydrology of the vernal pool~~

~~2006 Minimization Measure 48 – For both Estrella Section Alternatives 8N and 9N: Obtain variance to leave above ground utilities in current location from STA 72+00 to STA 76+00.~~

~~2006 Minimization Measure 49 – For both Estrella section alternatives 8N and 9N: An environmentally sensitive area (ESA) would be designated on the project plans and then on the ground during construction in the vicinity of the first vernal pool, located south of State Route 46, east of Mill Road. The ESA would extend from the proposed cut slope catch point south to the limits of the proposed right of way or temporary construction easement, whichever is greater and would extend from STA 55+60 to STA 58+90.~~

~~2006 Minimization Measure 50 – For both Estrella section alternatives 8N and 9N: An ESA would also be designated on the project plans and then on the ground during construction in the vicinity of the other two vernal pools located between STA 72+00 and STA 76+00. The ESA would extend from the existing cut slope catch point north to the limits of proposed right of way or temporary construction easement, whichever is greater and would extend from STA 72+00 to STA 76+00.~~

~~2006 Minimization Measure 51 – With the removal of Bridge #49-29, the existing rock slope protection used to protect this bridge shall be removed and the creek bank restored back to its original slope. Appropriate erosion control shall be installed to prevent sedimentation into Cholame creek and to stabilize the disturbed creek bank.~~

Reason for removal – Since development of the 2006 EIR/FONSI hydraulic modeling was conducted to analyze the predicted change in velocity as a result of various RSP configurations. The modeling indicates that the least amount of change to the existing velocities would result from leaving the existing RSP in place. In the interest of reducing erosion potential at this location, Caltrans is proposing to leave the RSP in place in the vicinity of the existing bridge.

6.9 Visual Resources

Minimization Measure 1 – Steepen constructed slopes at spot locations, if necessary, to save existing trees/woodlands.

Impact/reason for minimization measure – to reduce the amount of adverse visual impact.

Minimization Measure 2 – Replace all trees removed as part of the project at the ratio designated by the District Landscape Architect.

Impact/reason for minimization measure – To reduce the amount of adverse visual impact.

BMP 3 – Replant trees required as mitigation within the highway right-of-way to the greatest extent possible.

Impact/reason for BMP measure – To maintain the beauty of the highway corridor and to provide screening of the highway for viewers who live adjacent to the highway.

Minimization Measure 4 – Use slope-rounding techniques on all slopes.

Impact/reason for minimization measure – To minimize the contrast between the natural topography and the built environment of the highway in order to reduce the visual impact associated with a change in the highway configuration.

Minimization Measure 5 – Eliminate or minimize slope-benching on all slope design.

Impact/reason for minimization measure – To reduce the severity of the visual impact associated with the change in the built environment from a rural two-lane highway to the larger expressway.

Minimization Measure 6 – Apply erosion control to all disturbed slopes.

Impact/reason for minimization measure – To reduce the chance of erosion during high winds or storm events. Substantial erosion would cause a greater visual impact than well-constructed slopes.

Minimization Measure 7 – Design all guard rails, barrier, and other fixed objects to reduce the requirement for installation of crash cushion arrays.

Impact/reason for minimization measure – To reduce the visual impact associated with fixed object end treatments and to maintain the rural feel of the project area.

Noise Barrier Measures (Measures 8-16 below apply to sections of the Corridor Project that have already been constructed and therefore are shown with a strikethrough)

Minimization Measure 8 – Receptor 1[44] – Estrella Section, Alternatives 8N and 9N. Noise impact minimization measures include retaining as much of the existing landform as possible. If possible, this should be done by steepening the proposed cut slope.

Minimization Measure 9 – Receptors 4b and 5, Barrier 2 – Estrella Section, Alternatives 8N and 9N. Noise impact minimization measures recommend the construction of a 759 meter long by 2 meter tall (2,490 feet long by 6 feet tall) earthen berm. The berm should be designed to appear as a naturally-occurring landform. This can be accomplished by constructing side slopes of 1:3 (vertical to horizontal), contour grading the form, subtly varying the alignment, and including minimal native planting to blend the berm in with the surroundings.

Minimization Measure 10 – Receptor 16, Barrier 6 – Estrella Section, Alternatives 8N and 9N. Noise impact minimization measures recommend the construction of a 85 meter long by 3 meter tall (280 feet long by 10 feet tall) soundwall. A wall along the highway at this location would adversely affect the rural character of the area. It is recommended that a combination wall and berm should be constructed to reduce the perceived size of the wall. Native-looking planting should be included to transition the wall into its setting. *Note: Sound wall was not desired by affected resident and will not be constructed.*

Minimization Measure 11 – Receptor 17 – Shandon Section, Alternatives 1 and 2. Noise impact minimization measures include retaining as much of the existing landform as possible. No impact to visual resources would occur as long as the slope is not over-steepened and if successful erosion control measures are applied

Location-specific measures to minimize visual impacts

Impact/reason for minimization measure – The following minimization measures (12 – 32) are required to reduce the amount of negative visual impact.

Minimization Measure 12 – Near Hunter Ranch Golf Course (approximate kp 53.4) (pm 33.3): Plant oak trees and native shrubs along the eastbound roadside in the vicinity of the Hunter Ranch Golf Course to screen views of the highway.

Minimization Measure 13 – The Estrella River Bridges (approximate kp 63.8/64.0) (pm 39.8/40.0): Construct the bridges with Type 80 bridge rail.

[44] Please see the Noise Section in this document, Section 3.1.5, for a description of the receptor, barrier, and recommended noise minimization measure.

~~Minimization Measure 14 – The Estrella River Bridges (approximate kp 63.8/64.0) (pm 39.8/40.0): If Estrella Section, Alternative 8N is selected, apply aesthetic treatment to slope paving in the vicinity of Estrella Road and on bridge columns.~~

~~Minimization Measure 15 – The Estrella River Bridges (approximate kp 63.8/64.0) (pm 39.8/40.0): Engineer the bridge structures with as thin of a bridge deck as possible.~~

~~Minimization Measure 16 – The Estrella River Bridges (approximate kp 63.8/64.0) (pm 39.8/40.0): Plant appropriate native trees and shrubs on the embankment slopes at the Estrella River Bridge to reduce visibility of the highway facility.~~

Minimization Measure 17 – Proposed cut approximately 1.9 km (1.2 mi) east of Cholame Creek Bridge #49-29 (approximate kp 83.0) (pm 51.9): Contour-grade the landform remnant near Station 203 between the two proposed road alignments with maximum side-slopes of 1:3 to appear as a naturally occurring landform.

~~Minimization Measure 18 – The Jack Ranch Café (approximate kp 86.3) (pm 54.0): At the Jack Ranch Café, plant trees along the eastbound roadside to re-create the windrow appearance lost as part of the road construction.~~

~~Minimization Measure 19 – The Jack Ranch Café (approximate kp 86.3) (pm 54.0): Plant screening shrubs between the proposed Jack Ranch Café parking lot and the proposed highway.~~

Measures 18 and 19 no longer apply to the Cholame Section because the new proposed highway alignment would be situated to the north (backside) of the Jack Ranch Café property where there are existing mature trees between the café building and the new proposed alignment

Minimization Measure 20 – Repair and improve the existing James Dean Memorial to enhance its setting.

~~Minimization Measure 21 – The Wye Alternatives (approximate kp 88.0/88.8) (pm55.0/55.5): Wye Section, Alternatives 7, 8, or 9 – Investigate moving the interchange and realign State Route 41 approximately 100 meters to the east of the location currently proposed. This would cause State Route 41 north of the interchange to follow an existing "saddle" in the topography rather than cross the top of a minor ridgeline, as currently designed.~~

~~Minimization Measure 22 – Wye Section, Alternative 8b – Along the existing State Route 41 alignment in the vicinity of STA 28+00 to 30+00, reestablish the original ridgeline landform after the existing road is removed.~~

~~Minimization Measure 23 – Wye Section, all alternatives – If slope paving is required under the structure(s), use natural-appearing surface treatment or apply color and/or texture to the concrete to blend with the existing rural visual character.~~

~~Minimization Measure 24 – Wye Section, all alternatives – Contour-grade all slopes to achieve the appearance of a naturally occurring landform.~~

~~Minimization Measure 25 – Wye Section, all alternatives – Apply erosion control to all areas disturbed by construction.~~

~~Impact/reason for Minimization Measure – The following measures (26 – 29) are intended to reduce adverse visual impacts associated with the Wye section.~~

Minimization Measure 26 – Construct all slopes as flat as possible.

Minimization Measure 27 – Where required, construct wildlife exclusion fencing a minimum of 30 meters (98 feet) from the highway or use earthen berms to screen visibility of fencing.

The following mitigation measures constitute a continuation of the visual measures listed in Chapter 6 of the 2006 EIR/FONSI and are specific to the Cholame Section. These measures would be incorporated into the project in order to maintain the visual quality of the corridor and to minimize visual impacts as a result of the proposed change to the highway alignment and added project features.

Mitigation Measure 28 – Roadside berms shall be minimized to the greatest extent possible.

Mitigation Measure 29 – Roadside berms where required shall not exceed five-feet above the elevation of the adjacent highway lane so that views are not blocked. Berms shall have undulating profiles, footprints and side slopes to replicate a natural landform and shall be planted with shrub species or grasses native to the Cholame Valley.

Mitigation Measure 30 – The existing notch in the landform at approximately PM 51.8, and the remnant cut slope at approximately PM 53.5 shall be backfilled and recontoured to eliminate the notched and remnant landforms and to blend with the natural topography.

Mitigation Measure 31 – Preserve existing trees to the greatest extent possible.

Mitigation Measure 32 – color concrete barrier, end treatment crash cushions, and the concrete portable scale slab associated with the proposed CHP inspection station.

Mitigation Measure 33 – Relocate the Changeable Message (CMS) Sign system to an area west of the new alignment station 1275 + 00 (change to PM)

Mitigation Measure 34 – color the entire CMS system (including but not limited to frames, poles, truss systems, catwalks, ladders and associated hardware). Coloring shall also include the front and side frames and back panel of the State-furnished electronic sign panel itself.

Mitigation Measure 35 – Color any required camera poles and equipment cabinets, if cameras are subsequently required as part of the project

Mitigation Measure 36 – Color all the following roadside concrete elements:

- Concrete vegetation control
- Concrete pipe downdrains
- Concrete overside drains
- Concrete ditch lining

Mitigation Measure 37 – Color all exposed rock slope protection (RSP) and visible concrete associated with drainage structures from PM 50.7 to PM 51.0

Mitigation Measure 38 – Backfill the bottom of the RSP channel from PM 50.7 to PM 51.0 with soil and plant with erosion control.

Mitigation Measure 39 – All RSP drainage structures located with landform graded slopes shall be backfilled with soil and receive erosion control treatments.

6.10 Cultural Resources

Mitigation Measure 1– Monitoring by a Native American tribal representative from the Salinan Tribe will be required during all ground-disturbing activities and water screening associated with data recovery excavations. The archaeological contractor will provide at least five (5) working days advance notice before requesting a monitor and will coordinate schedule with the monitor on a daily basis after monitoring starts.

Mitigation Measure 2– Monitoring by a qualified archaeologist and a Native American tribal representative is required for all ground-disturbing activities during construction. The archaeological and Native American monitors must be notified at least five (5) working days in advance of the start of construction to ensure availability.

Mitigation Measure 3– If an unanticipated archaeological deposit is identified, construction personnel and equipment will be temporarily excluded from working within 30 meters of the discovery until cultural materials can be properly assessed, documented, and/or recovered.

Mitigation Measure 4– If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

Mitigation Measure 5– If human remains are discovered, California Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent (MLD). The person who discovers the remains will contact District 5 Environmental Branch, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

6.11 Population, Communities, and Housing (Incorporate by Reference)

6.12 Public Services (Incorporate by Reference)

6.13 Transportation and Traffic (Incorporate by Reference)

6.14 Utilities and Service Systems (Incorporate by Reference)

This page intentionally left blank

Chapter 7 Consultation and Coordination

Agencies formally or informally contacted and consulted during the preparation of this Supplemental Draft EIR/Updated EA include the following:

Cal Fire Station 51 (Shandon)

California Department of Fish and Wildlife

City of Paso Robles (Planning)

Native American Heritage Commission

Regional Water Quality Control Board

San Luis Obispo County Clerk-Recorder's Office

San Luis Obispo County (Planning)

U.S. Army Corps of Engineers

U.S. Department of the Interior (Fish and Wildlife Service)

This page intentionally left blank

Chapter 8 List of Preparers

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

Cecilia Boudreau, Associate Environmental Planner. B.S., Forestry and Natural Resource Management, California Polytechnic State University, San Luis Obispo; 13 years of environmental planning experience. Contribution: Coordinated environmental process, prepared Supplemental Draft Environmental Impact Report/Updated Environmental Assessment.

Robert Carr, Associate Landscaper Architect. B.S Landscape Architecture, California Polytechnic State University, San Luis Obispo; 31 years experience preparing Visual Impact Assessments. Contribution: Supplemental Visual Impact Assessment

Raymond Gomez. Transportation Engineer (Civil). B.S., Civil Engineering with an Environmental Emphasis, Carroll College; 1 year of environmental engineering experience. Contribution: Air Quality, Noise, Energy.

Damon Haydu, Associate Environmental Planner (Archaeology). M.A., Cultural Resource Management, California State University, Sonoma; 20 years experience in cultural resource management. Contribution: Prepared Supplemental Historical Property Survey Report and Supplemental Archaeological Survey Report

Joel Kloth, Engineering Geologist. B.S., Geology, California Lutheran University; 40 years of environmental engineering experience. Contribution: Hazardous Waste Studies.

Isaac Leyva, Engineering Geologist. B.S., Geology; 29 years of experience in petroleum geology, environmental geology, geotechnical engineering. Contribution: Revised Water Quality Assessment

Karl Mikel, Senior Transportation Engineer. BS Environmental Engineering, MS Civil/Environmental Engineering, California Polytechnic State University, San Luis Obispo; 17 years engineering experience. Contibution: Air Quality, Hazardous Waste, Noise, Water Quality Studies.

Amy Millan, Associate Environmental Planner (Natural Sciences). B.S., Ecology and Systematic Biology, California Polytechnic State University, San Luis Obispo; 14 years of experience in California biology, wildlife and habitat studies, management, and monitoring. Contribution: Cumulative Impact Analysis – Biological Resources.

Jim Mills, Transportation Engineer. B.S., Civil Engineering, California State Polytechnic University, Pomona; 25 years of Hydraulic Analysis and Drainage Design. Contribution: Prepared updated Location Hydraulic Study.

Jennifer Moonjian, Associate Environmental Planner (Natural Sciences). B.S. and M.S., Biological Sciences; 13 years of environmental impact assessment and biological resources experience. Contribution: Supplemental Natural Environment Study

Pete Riegelhuth, Landscape Associate and Certified Professional in Erosion and Sediment Control, CPESC #5336, Bachelor's Degree in Landscape Architecture, BLA, from California Polytechnic State University, San Luis Obispo; 4 years of experience in construction as the District Construction Stormwater Coordinator and 14 years of experience as the District 5 Stormwater/NPDES Permit Coordinator. Contribution: Review of Water Quality Impact Assessment

Chapter 9 Distribution List

The Supplemental Draft Environmental Impact Report/Update Evironmental Assesment was sent to the following agencies and people for review and comment:

Political Representatives

United States Senator Dianne Feinstein
Untited States Senator Kamala Harris
United States Congressman Salud Carbajal (24th Congressional District)
California State Senator Bill Monning (17th Senate District)
California State Assemblyman Jordan Cunningham (35th Assembly District)

Federal Agencies

United States Army Corps of Engineers
United States Fish and Wildlife Service
Natural Resources Conservation Service

State Agencies

California Department of Conservation
California Department of Fish and Wildlife
California Department of Forestry and Fire Protection – Shandon Station 51
California Highway Patrol - Templeton
California Native American Heritage Commission
Central Coast Regional Water Quality Control Board
State Clearinghouse
California Transporation Commission

County Agencies

San Luis Obispo County Air Pollution Control District
San Luis Obispo County Planning and Building Department
San Luis Obispo County Clerk-Recorder's Office
San Luis Obispo County Board of Supervisors

City Agency

Paso Robles City Planning Department

Other

Property owners affected by the proposed project

This page intentionally left blank

Chapter 10 Title VI Policy Statement

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

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

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.

LAURIE BERMAN
Director

This page intentionally left blank

Appendix A List of Technical Studies

For copies of the following technical studies please contact Jason Wilkinson at Jason.wilkinson@dot.ca.gov or by mail:

Jason Wilkinson, Senior Environmental Planner
California Department of Transportation
50 Higuera Street
San Luis Obispo, CA 93401

Air Quality Report Addendum

Noise Study Report Addendum

Revised Water Quality Assessment

Location Hydrologic Study

Supplemental Natural Environment Study

Supplemental Historical Property Survey Report

Supplemental Archaeological Survey Report

Hazardous Waste Report (Initial Site Assessment & Site Investigation Report)

Supplemental Visual Impact Assessment

This page intentionally left blank

Appendix B United States Fish and Wildlife Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Phone: (805) 644-1766 Fax: (805) 644-3958

In Reply Refer To: October 02, 2019
Consultation Code: 08EVEN00-2018-SLI-0885
Event Code: 08EVEN00-2020-E-00010
Project Name: Highway 46 Corridor Widening Project - Cholame Section

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

To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a

written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

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:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

Project Summary

Consultation Code: 08EVEN00-2018-SLI-0885

Event Code: 08EVEN00-2020-E-00010

Project Name: Highway 46 Corridor Widening Project - Cholame Section

Project Type: TRANSPORTATION

Project Description: Widen Highway to four lanes

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.7037722430883 66N120.32140627677444W



Counties: San Luis Obispo, CA

Endangered Species Act Species

There is a total of 14 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 Fisheries[1], 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
Giant Kangaroo Rat *Dipodomys ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered

Amphibians

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

Insects

NAME	STATUS
Kern Primrose Sphinx Moth *Euproserpinus euterpe* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7881	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* 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
California Jewelflower *Caulanthus californicus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4599	Endangered
Marsh Sandwort *Arenaria paludicola* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229	Endangered
Spreading Navarretia *Navarretia fossalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1334	Threatened

Critical habitats

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

This page intentionally left blank

Appendix C National Marine Fisheries Service Species List

Moonjian, Jennifer M@DOT

From: NMFSWCRCA Specieslist - NOAA Service Account <nmfswcrca.specieslist+canned.response@noaa.gov>
Sent: Wednesday, October 2, 2019 9:54 AM
To: Moonjian, Jennifer M@DOT
Subject: Re: CALTRANS: Route 46 Corridor Improvement Project - Cholame Phase (05-3307A)

Receipt of this message confirms that NMFS has received your email to nmfswcrca.specieslist@noaa.gov. If you are a federal agency (or representative) and have followed the steps outlined on the California Species List Tools web page (http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html), you have generated an official Endangered Species Act species list.

Messages sent to this email address are not responded to directly. For project specific questions, please contact your local NMFS office.

Northern California/Klamath (Arcata) 707-822-7201

North-Central Coast (Santa Rosa) 707-387-0737

Southern California (Long Beach) 562-980-4000

California Central Valley (Sacramento) 916-930-3600

1

Moonjian, Jennifer M@DOT

From: Moonjian, Jennifer M@DOT
Sent: Wednesday, October 2, 2019 9:54 AM
To: nmfswcrca.specieslist@noaa.gov
Subject: CALTRANS: Route 46 Corridor Improvement Project - Cholame Phase (05-3307A)

California Department of Transportation – District 5- San Luis Obispo

50 Higuera St. San Luis Obispo, CA 93401

Jennifer Moonjian

Jennifer.moonjian@dot.ca.gov

805-542-4763

Quad Name **Cholame**
Quad Number **35120-F3**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - X
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -

1

CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates

2

Black Abalone Critical Habitat -

ESA Sea Turtles

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

ESA Whales

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

ESA Pinnipeds

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

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Appendix D Farmland Conversion Impact Rating

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 4/13/18	4. Sheet 1 of 1
1. Name of Project **Route 46 Corridor Improvement Project**	5. Federal Agency Involved **FHWA represented by Caltrans**	
2. Type of Project **Highway Widening**	6. County and State **San Luis Obispo/California**	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 4/16/18	2. Person Completing Form Ken Oster
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐	4. Acres Irrigated 81636	Average Farm Size 502
5. Major Crop(s) **Wine grapes, Strawberries, Broccoli**	6. Farmable Land in Government Jurisdiction Acres: 255378 % 12	7. Amount of Farmland As Defined in FPPA Acres: 257935 % 12.1
8. Name Of Land Evaluation System Used **CA Revised Storie Index**	9. Name of Local Site Assessment System **None**	10. Date Land Evaluation Returned by NRCS 4/19/18

	Alternative Corridor For Segment Cholame North Modified			
PART III *(To be completed by Federal Agency)*	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	168.66			
B. Total Acres To Be Converted Indirectly, Or To Receive Services	337.32			
C. Total Acres In Corridor	168.66			
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	0			
B. Total Acres Statewide And Local Important Farmland	141			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.06			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	10.04			
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	79			
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use — 15	15			
2. Perimeter in Nonurban Use — 10	10			
3. Percent Of Corridor Being Farmed — 20	8			
4. Protection Provided By State And Local Government — 20	20			
5. Size of Present Farm Unit Compared To Average — 10	0			
6. Creation Of Nonfarmable Farmland — 25	0			
7. Availability Of Farm Support Services — 5	5			
8. On-Farm Investments — 20	12			
9. Effects Of Conversion On Farm Support Services — 25	0			
10. Compatibility With Existing Agricultural Use — 10	0			
TOTAL CORRIDOR ASSESSMENT POINTS — 160	70	0	0	0
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100	79	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	70	0	0	0
TOTAL POINTS *(Total of above 2 lines)* — 260	149	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
Cholame North Modified (Option B)			YES ☐ NO ☐

5. Reason For Selection:

This project will return the exisitng ROW to grassland. That will return 70 acres to Statewide and Local Important Farmland.

Signature of Person Completing this Part: [signature] DATE 4/19/2018

NOTE: Complete a form for each segment with more than one Alternate Corridor

This page intentionally left blank

Appendix E USFWS - No Further Section 7 Consultation Required (E-Mail) and Biological Opinion

Moonjian, Jennifer M@DOT

From: Christopher Diel <christopher_diel@fws.gov>
Sent: Wednesday, November 22, 2017 10:06 AM
To: Moonjian, Jennifer M@DOT
Cc: Rick Farris; Leilani Takano
Subject: RE: Hwy 46 Corridor Improvement PRoject (1-8-03-F-59)

Jennifer,

After reviewing your new project design described below, we believe that the effects of the proposed changes are consistent with the those analyzed in the existing biological opinion for the Highway 46 Corridor Improvement Project (1-8-03-F-59) and further consultation is not required.

Thank you for coordinating with our office on this project and please feel free to contact me with any questions or concerns.

Sincerely,

Christopher J. Diel
Acting Assistant Field Supervisor
U.S. Fish & Wildlife Service, Ventura Field Office
2493 Portola Road, Suite B
Ventura, CA 93003
(805) 677-3366

From: Moonjian, Jennifer M@DOT [mailto:jennifer.moonjian@dot.ca.gov]
Sent: Monday, November 13, 2017 12:31 PM
To: Christopher Diel <christopher_diel@fws.gov>
Subject: RE: Hwy 46 Corridor Improvement PRoject (1-8-03-F-59)

Thanks for speaking with me today Chris. Below is a summary of the larger Corridor project as well as a summary of the changes that have occurred as a result of the utility relocation costs. Just for clarification, the original preferred alternative was called "Alternative 1" whereas the new preferred alignment is called "Cholame North Alternative". Please let me know if you have any questions.

Project History

Recent developments and changes have occurred with the Highway 46 Corridor Improvement Project, specifically within the Cholame Segment (Caltrans EA 05-3307a), and they are summarized below.

Caltrans completed an NES for the proposed project on January 22, 2003, which comprises the 3rd section (Cholame Section) of the larger Route 46 Corridor Improvement Project. Caltrans also received a Biological Opinion from USFWS on December 12, 2005. Since that time, changes have been made to the design of the preferred alternative (Alternative 1) for the Cholame Section.

1

The Final Environmental Impact Report (FEIR) for the larger Highway 46 Corridor Improvement Project was certified in May 2006 (State Clearinghouse Number 2000011033). The proposed project, which only comprises the Cholame Section of the larger Highway 46 Corridor Improvement Project, would still realign and widen State Route 46 from 0.2 miles east of the Shandon Roadside Rest Area to 0.5 miles west of the State Route 41/46 intersection in San Luis Obispo county (postmiles 49.7-54.7). However, since certification of the 2006 FEIR, design changes to the preferred alternative were required to avoid extraordinary costs associated with the relocation of electrical, telephone, gas, jet fuel, and oil utilities. In order to avoid these utilities, another alternative is being evaluated, herin referred to as the Cholame North Alternative.

The purpose and need remain the same as what is described in the 2006 FEIR, which is composed of 4 sections: Estrella, Shandon, Cholame, and the Wye.

Summary of Changes

From the beginning of the project, at post mile 49.7, the Cholame North Alternative, proposes a slight alignment shift to the south in order to reduce impacts to the existing Chevron Oil pipelines. The Cholame North alternative would cross the pipeline at a lesser skew than the Cholame Alternative 1 alignment, essentially reducing the linear footage of pipeline that will be overlapped by the new highway lanes. Beginning at post mile 50.9, the Cholame North Alignment deviates to the north rather than rejoining the existing two-lane highway near post mile 52.2, as described in the 2006 FEIR, under the Cholame Alternative 1. The Cholame North alternative proposes to construct all 4 lanes on a new alignment for the entire length of this section, whereas Cholame Alternative 1 would have used a portion of the existing alignment for the new lanes.

Additionally, The Cholame North alternative consists of 2 design options (Design Option A and Design Option B). Design Option A, proposes to route the new 4-lane highway around the backside (north side) of the Jack Ranch Café and James Dean Memorial, whereas Design Option B would bisect the café building and the James Dean Memorial.

The differences between the Cholame Alternative 1 and the new Cholame North Alternative, as well as the variation in the Cholame North Alternative design options are shown in the Attachments. Caltrans calculated an increase of 16.29 acres of permanent impacts for Cholame North Alternative compared with Cholame Alternative 1. However, 29.53 acres of old roadbed would be restored to open grassland, off-setting a portion of the additional permanent impacts.

Just as with the previous section of the Corridor Improvement Project, Caltrans has designed and will construct undercrossings varying from 36'' diameter pipes to large 12'x10' box culverts within Cholame Section. In addition, Caltrans installs directional fencing to encourage wildlife to utilize the undercrossing opportunities.

Jennifer Moonjian
Associate Biologist
Caltrans - District 5

San Luis Obispo
805-542-4763

From: Christopher Diel [mailto:christopher_diel@fws.gov]
Sent: Monday, November 06, 2017 11:35 AM
To: Moonjian, Jennifer M@DOT <jennifer.moonjian@dot.ca.gov>
Subject: RE: Hwy 46 Corridor Improvement PRoject (1-8-03-F-59)

Hi Jennifer,

I am available all week (except Friday) to discuss this with you. Please feel free to give me a call at any time.

Thanks,

Chris

Christopher J. Diel
Acting Assistant Field Supervisor
U.S. Fish & Wildlife Service, Ventura Field Office
2493 Portola Road, Suite B
Ventura, CA 93003
(805) 677-3366

From: Moonjian, Jennifer M@DOT [mailto:jennifer.moonjian@dot.ca.gov]
Sent: Wednesday, November 1, 2017 4:43 PM
To: Christopher Diel <christopher_diel@fws.gov>
Subject: FW: Hwy 46 Corridor Improvement PRoject (1-8-03-F-59)

Hi Chris,
I wanted to discuss the Highway 46 Corridor Improvement Project with whoever would be assigned to this one. It's an old BO – 2005. We are in the 5th phase of construction and we are making some tweaks to the design in the next phase and I wanted to run them by you and make sure we are still covered.

Thanks.

Jennifer Moonjian
Associate Biologist
Caltrans - District 5
San Luis Obispo
805-542-4763

From: Rick Farris [mailto:rick_farris@fws.gov]
Sent: Wednesday, November 01, 2017 12:57 PM
To: Moonjian, Jennifer M@DOT <jennifer.moonjian@dot.ca.gov>
Subject: RE: Hwy 46 Corridor Improvement PRoject (1-8-03-F-59)

Hi Jennifer,

3

I think you would want to contact Chris Diel about this one. He's the current supervisor of our North Coast Division and it looks like the project is in their turf.
christopher_diel@fws.gov
(805) 677-3366
Let me know if you need anything else.

Rick

From: Moonjian, Jennifer M@DOT [mailto:jennifer.moonjian@dot.ca.gov]
Sent: Wednesday, November 1, 2017 11:54 AM
To: Rick Farris <rick_farris@fws.gov>
Subject: Hwy 46 Corridor Improvement PRoject (1-8-03-F-59)

Hi Rick,
Who would I contact regarding this BO. It was issued in 2005. The project is till moving its way east, but we have a new segment with some changes to the design so I wanted to make sure I was alerting you guys and making sure we are all on the same page.

Thanks.

Jennifer Moonjian
Associate Biologist
Caltrans - District 5
San Luis Obispo
805-542-4763

4

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
PAS 681.731.927

December 12, 2005

Gene K. Fong, Division Administrator
Federal Highway Administration, California Division
650 Capitol Mall, Suite 4-100
Sacramento, California 95814

Subject: Biological Opinion for the State Route 46 Corridor Improvement Project, Post Mile 32.2 – 56.3, San Luis Obispo County, California (Document # P43727) (1-8-03-F-59)

Dear Mr. Fong:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological and conference opinion on the effects of the California Department of Transportation's (Caltrans) proposed State Route (SR) 46 Improvement Project on the federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*), and the federally threatened California tiger salamander (*Ambystoma californiense*), and California red legged frog (*Rana aurora draytonii*), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U. S. C. 1531 *et seq.*).

The subject project would be funded by the Federal Highways Administration (FHWA) and would widen SR 46 from a two-lane conventional highway to a four-lane expressway. Your June 25, 2003, request for formal consultation was received on June 27, 2003.

CONSULTATION HISTORY

Your request for consultation included a determination that the proposed project would not affect on the California red-legged frog. You also determined the proposed project may affect the California tiger salamander and requested technical assistance regarding this species. Following discussions between biologists from Caltrans and our Office, we received your October 24, 2005, letter requesting formal consultation on the California red-legged frog and California tiger salamander.

On August 23, 2005, we designated critical habitat for the California tiger salamander, Central population, in four regions: Central Valley, Southern San Joaquin Valley, East Bay, and Central Coast (70 Federal Register [FR] 49380). However, the action described in this biological opinion is outside the boundary of critical habitat. Consequently, the proposed action would have no effect on critical habitat for this species.

The federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) also occurs in the vicinity of the proposed project. Critical habitat was designated on August 3, 2003 (68 FR 46684). FHWA has determined there would be no effect to vernal pool fairy shrimp because Caltrans has designed the new alignment of the highway to avoid both direct and indirect effects to this species and its critical habitat (Caltrans 2003a). Therefore, this biological opinion does not address the vernal pool fairy shrimp or its critical habitat.

This biological opinion is based on information that accompanied the request for consultation, subsequent discussions between our staffs, the scientific literature, a site visit on May 17, 2005, and information in our files. A complete administrative record of this consultation is on file at the Ventura Fish and Wildlife Office.

In addition to the action proposed in this biological opinion, Caltrans and FHWA plan to widen SR 46 to the east of the proposed project site. On March 10, 2005, we issued a biological opinion for the Highway 46 Improvement Project, Post Mile (PM) 55.1 to 60.9 (Service 2005), in which we concluded that project is not likely to jeopardize the continued existence of the San Joaquin kit fox or the California red-legged frog. On September 22, 2003, the Service's Sacramento Fish and Wildlife Office issued a biological opinion concluding the section of the SR 46 Improvement Project from PM 0.0 to PM 33.5, east of Interstate 5, is not likely to jeopardize the continued existence of the San Joaquin kit fox (Service 2003).

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

State Route 46, also known as the "Paso Robles Highway," is predominantly an east-west highway that spans from State Route 1 near Cambria in San Luis Obispo County eastward to State Route 99 near Famoso in Kern County. Truck traffic currently comprises nearly 20 percent of the average daily traffic volume between Highway 101 and Interstate 5. State Route 46 is heavily used on weekends as a corridor for vehicles traveling between the San Joaquin Valley and communities on the California central coast.

Caltrans proposes to convert a 24 mile section of SR 46, from two to four lanes, between Paso Robles and the interchange of SR 41 and SR 46 near Cholame. The interchange is known locally as the "Y". The eastern end of the proposed project would adjoin SR 46 at the Antelope Grade, which was included in our previous biological opinion (Service 2005).

The width of the median separating east and westbound traffic would vary between 61 feet and 46.3 feet. All public road intersections would be improved with left turn channels (lanes). The existing roadbed would be improved to meet current design standards for a four-lane expressway. Horizontal and vertical curves would be upgraded to meet the design speed of 80 miles per hour with the exception one 65 mile per hour horizontal curve just west of the Cholame Creek Bridge, in the Shandon section.

Caltrans and FHWA analyzed the proposed project in four sections and selected the least environmentally damaging practicable alternative (LEDPA), for each section, as their proposed action. In each section, the existing highway would be widened from two to four lanes. The following four sections make up the proposed action:

1. Estrella – Alternative 8N;
2. Shandon – Alternative 1;
3. Cholame – Alternative 1; and
4. Y – Alternative 8b (overflow variation).

The following is a summary of the proposed action. A complete description of the alternatives, including the LEDPA, can be found in Caltrans 2003b.

Estrella – Alternative 8N (PM 32.2 to 41.2)

The Estrella section would start at the western end of the SR 46 where it intersects with Airport Road. Caltrans would construct two new eastbound lanes south of the existing highway. The existing highway would be converted into two westbound lanes. This section of the project would include a 46.3-foot wide, vegetated median between PM 32.2 and 34.4. The vegetated median would minimize impacts to blue oak (*Quercus douglasii*) woodlands. A 1,148-foot segment of the existing roadbed, west of Estrella Road, would be restored with native vegetation. A new 778-foot bridge would be constructed across the Estrella River. The new bridge would be 62.3 feet higher and 516 feet longer than the existing bridge. Estrella Road would be re-routed under the new bridge. The new bridge would span the entire Estrella River Valley, including an extensive Freemont cottonwood (*Populus fremontii*) woodland, which occurs along the Estrella River.

Shandon – Alternative 1 (PM 41.2 to 50.2)

Two new lanes would be built in the Shandon section to improve the flow of traffic. The location of the new lanes, relative to the existing highway, would vary between the north and south sides of the existing highway. Between PM 46.0 and 46.8, the highway alignment would be shifted to the north to reduce impacts to Cholame creek. This section would include a 61.0-foot wide median along its entire 9 mile length.

Minor modifications to the access and circulation at the Shandon Safety Roadside Rest would be implemented. Additions to the rest area would include new right-turn and left-turn lanes and a paved median crossover. Several utilities including electric, gas, telephone, jet fuel, and oil would be relocated outside of the Caltrans right-of-way.

Cholame – Alternative 1 (PM 50.2 to 54.8)

This section would include the largest highway realignment of the proposed project, from PM 50.2 to 52.2. In this area Caltrans would construct four new traffic lanes and re-route SR 46 to the North, around the existing Tosco Oil pumping plant. The new alignment would rejoin the existing route at PM 52.2. Between this point and the end of the Cholame section, two new lanes would be constructed to make SR 46 a four lane expressway. From PM 52.2, the location of the two new lanes, relative to the existing highway, would vary between the north and south sides of the existing highway. Two new bridges would be built across Cholame Creek approximately 0.16 mile north of the existing Cholame Creek Bridge. The existing bridge would be removed. Several utilities including electrical, gas, jet fuel, and oil would be relocated outside of the Caltrans right-of-way.

Y – Alternative 8b (overflow variation - PM 54.8 to 56.3)

This section is located in the Cholame Valley, at the east end of the project, and includes the interchange of SR 46 and SR 41. The new design would realign the interchange to the north and west of its existing location. The new highway would then veer back to the south, across the Cholame Creek floodplain to meet up with the existing State Route 46 alignment near PM 56.3.

SR 41 would be relocated south of its alignment near PM 45.4, to connect with State Route 46 near PM 55.6. The existing State Route 41 roadway, between PM 43.9 and 44, would be removed and the land restored with native vegetation. The new eastbound and westbound lanes would be separated with a 61-foot median.

The existing Cholame Creek Bridge would be removed and replaced. The new Cholame Creek Bridge would be 394 feet long and between 13 and 20 feet above the floodplain at their lowest point and highest points, respectively. It would have two support piers approximately 120 feet apart.

A second bridge, the Cholame Creek Overflow/secondary wildlife crossing, would be built beginning at PM 55.6. The Cholame Creek Overflow/secondary wildlife crossing would be a single-span bridge, 131 feet long, nearly 15 feet above the ground, and would partially span the wetland complex on the Cholame Valley floor. These new bridges would be elevated above the Cholame Valley floor, and are designed to provide San Joaquin kit fox with a clear line of sight under the highway.

Construction of the SR 46 Improvement Project is scheduled to begin in 2007, with the Estrella section at the west end of the highway. The remaining sections would be completed from west to east and are scheduled for completion by 2013. Working hours for the proposed project have not been established. Caltrans anticipates typical road-building equipment would be used for this project including, but not limited to: bulldozers, pile drivers, steam rollers, concrete trucks, concrete pumps, hand compactors, gas compressors, pavers, pavement

rollers, rippers, backhoes, chainsaws, and graders. Caltrans would put the project out for bid to the private sector for construction.

Minimization Measures

Caltrans has proposed the following measures to minimize adverse effects to the Joaquin kit fox:

1. The Service's recommendations for protection of San Joaquin kit fox prior to or during ground disturbance (Service 1997) have been incorporated into the project description.

2. A full time, qualified biologist will implement the Service's recommendations and other project related biological monitoring requirements.

3. Dry culverts, a minimum of 36" high, will cross all four lanes of traffic and will be located along the entire length of the proposed project every 0.3 mile based on recommendations in the literature (Cypher 2000). Culverts will not be placed at 0.3 mile intervals where drainage culverts or bridges greater than 36" high are already proposed.

4. Wire mesh drift fencing (<2 inch squares) will be used to funnel San Joaquin kit fox toward culvert openings. Drift fencing will extend out approximately 150 feet on either side of culvert openings.

5. Box culverts, 12 feet tall and 12 feet across, will be placed on both SR 46 and SR 41 east of the Y interchange to facilitate cattle drives. Additional 12-foot box culverts will be installed at known deer crossing points (PM 32.9, PM 34.1 (Dry Creek) and PM 37.7). San Joaquin kit fox may also use these additional undercrossings.

Caltrans proposes to purchase conservation easements to compensate for permanent impacts to San Joaquin kit fox habitat using the following ratios based on the CDFG San Joaquin kit fox habitat assessment form: 4:1 between PM 37.6 through the Cholame Valley; 3:1 between Airport Road and Jardine Road; and 2:1 between Jardine Road and PM 37.6. Up to 352 acres would be permanently impacted. Caltrans proposes to compensate for temporary impacts at a 1/3:1 ratio. Up to 283 acres of San Joaquin kit fox habitat would be temporarily impacted. Caltrans would purchase a total of approximately 1200 acres of off-site San Joaquin kit fox habitat at a CDFG-approved conservation bank within the corridor connecting the southern Salinas Valley to the Carrizo Plain. Two conservation banks are currently being developed by CDFG. Caltrans will evaluate both banks and will purchase credits at the bank which best suits the proposed project (D, Hacker pers. comm. 2005).

Caltrans will remove several acres of abandoned roadbed in each of the four sections, and restore these areas with native California grassland species, suitable for San Joaquin kit fox.

For every acre restored, Caltrans proposes to reduce the amount of their off-site compensation by one acre.

Caltrans will also construct artificial dens in the off-site conservation area or other areas approved by the Service and CDFG. The number of artificial dens will be based on the existing number of dens and the condition of the conservation site.

Caltrans has provided the following specific measures to minimize adverse effects to the California red-legged frog:

1. All earthwork within 270 feet of California red-legged frog aquatic habitat will be completed between May 1 and October 31.

2. A qualified biologist will conduct pre-construction surveys for California red-legged frogs within the project area within two days of initiation of project construction.

3. Any California red-legged frogs encountered will be reported to the Service immediately or as soon as practicable (i.e. the following business day if encountered at night). California red-legged frogs found in harm's way will be captured and relocated to appropriate habitat as determined after discussions with Service staff.

4. All new sightings of California red-legged frogs within project areas will be reported to the Service and the CNDDB.

5. Pre-construction meetings with the construction contractor and crew will be conducted to brief them on the potential presence of California red-legged frogs in the project area, and educate onsite workers in the identification and habitat requirements of California red-legged frogs, as well as the ramifications of take of listed species. The minimization measures outlined will also be discussed.

6. To the maximum extent practicable, contractors will avoid all project-related activities including road construction within 300 feet of all wetlands/water courses that provide suitable breeding and foraging habitat for the California red-legged frog.

7. Pesticide application will be avoided within 500 feet of all wetlands/water courses.

8. Bank slope protection placed on creek channel banks will be designed for erosion control by means of riparian function enhancement. Designs using native topsoil and native riparian local stock are preferred (biotechnology, logs, willow wattles, potted willows, "soft-tech" or low-tech dirt terracing, etc.).

9. Prior to the commencement of construction activities, Caltrans will coordinate with the CDFG to prepare a riparian vegetation replacement program for the project. Riparian vegetation removed as a result of the project will be replaced at a 3:1 ratio.

10. California native species (local stock preferred) will be utilized in re-vegetation and habitat enhancement efforts associated with the project.

11. Erosion control devices will be installed adjacent to work areas to control sedimentation and turbidity. Measures will be taken to control post-construction runoff and pollutant discharge.

12. Within 300 feet of potential California red-legged frog breeding habitat, only water will be used for dust abatement.

Caltrans has proposed the following measures to minimize adverse effects to the California tiger salamander:

1. All areas greater than 15 feet beyond the proposed cut/fill limits would be off limits to construction equipment.

2. Equipment and materials storage would be within the proposed median to the maximum extent practicable. If a median location is unavailable, then equipment and material storage areas would be selected in areas with no small mammal burrows or areas greater than 2200 feet from potential breeding pools.

STATUS OF THE SPECIES

San Joaquin Kit Fox

The San Joaquin kit fox was federally listed as endangered on March 11, 1967 (32 FR 4001), and state listed as threatened on June 27, 1971. Critical habitat has not been designated for this species. A recovery plan was published in 1983 (Service 1983). The San Joaquin kit fox recovery strategy was subsequently incorporated into an ecosystem-wide recovery plan for upland species of the San Joaquin valley (Service 1998).

Historically, San Joaquin kit foxes may have existed in a metapopulation structure of core and satellite populations, some of which may have periodically experienced local extinctions and recolonization (Service 1998). In the San Joaquin Valley before 1930, the San Joaquin kit fox was distributed within an 8,700-square mile range in central California from the vicinity of Tracy in the upper San Joaquin Valley south to the general vicinity of Bakersfield. Although the current range of San Joaquin kit fox now appears to be reduced by half of its historical range, the species still extends from Contra Costa County to the southern end of the Cuyama River watershed in Ventura, Santa Barbara, and southeastern San Luis Obispo counties, and east to the surrounding foothills of the Sierra Nevada.

Historically, the San Joaquin kit fox was associated with shrub, grassland, alkalai, and vernal pool plant communities native to the San Joaquin Valley (Service 1998). San Joaquin kit foxes also exhibit a capacity to utilize some habitats that have been altered by man, such as oil

fields, grazed pasture land, and wind farms (Cypher 2000), the margins and fallow lands near irrigated row crops, orchards, and vineyards, and may forage occasionally in these agricultural areas (Service 1998). The San Joaquin kit fox seems to prefer more gentle terrain and decreases in abundance as terrain ruggedness increases (Grinnell et al. 1937; Morrell 1972).

Throughout their range, San Joaquin kit foxes are currently limited to remaining grassland, saltbush, open woodland, alkali sink valley floor habitats, and other similar habitats located along bordering foothills and adjacent valleys and plains. The largest extant populations of San Joaquin kit foxes are in the Elk Hills and the Buena Vista Naval Petroleum Reserve in Kern County, and the Carrizo Plain Natural Area in San Luis Obispo County (Service 1998).

No current population estimate exists for San Joaquin kit foxes. Prior to 1930, range-wide estimates between 8,667 and 12,134 were suggested (Service 1983). In 1975, 6,961 San Joaquin kit foxes were estimated from 14 counties (Service 1983). However, these estimates are unreliable as they were not based on direct counts of individuals, but instead were based on den counts or assumed San Joaquin kit fox densities combined with estimates of available habitat. Also, because natural popoulation fluctuations are observed among San Joaquin kit foxes, point estimates of population size may not be good indications of the overall status of the population. Subsequently, these estimates likely over estimated true abundance of San Joaquin kit fox (Cypher 2000).

The San Joaquin kit fox is a small canid, with an average body length of 20 inches and weighing about 5 pounds. They are lightly built, with long legs and large ears. Diet of San Joaquin kit foxes varies geographically, seasonally, and annually, based on variation in abundance of prey. San Joaquin kit foxes feed primarily on kangaroo rats (*Dipodomys*), California ground squirrels (*Spermophilus beechyi*), desert cottontails (*Sylvilagus audubonii*), black-tailed jackrabbits (*Lepus californicus*), and various rodents, insects, birds, and vegetation.

Kit foxes can breed at one year old, but may not breed their first year of adulthood (Morrell 1972). During September and October, adult females begin to clean and enlarge natal or pupping dens (Morrell 1972). Mating and conception take place between late December and March (Egoscue 1956, Morrell 1972, Zoellick et al. 1987*a*). Litters of from two to six pups are born sometime between February and late March (Egoscue 1962, Morrell 1972, Zoellick et al. 1987*a*).

Reproductive success of kit foxes is correlated with abundance of their prey (Egoscue 1975). Periods of prey scarcity, owing to drought or excessive precipitation, could contribute to episodes of low reproduction and population crashes. Conversely, when densities of prey increase in response to favorable precipitation levels, foxes may reproduce at their biotic potential and contribute to population explosions (White and Garrott 1999).

Female San Joaquin kit foxes are rarely seen hunting during the time they are lactating. During this period males provide most of the food for females and pups. The pups emerge

above ground at slightly more than 1 month of age. After 4 to 5 months, usually in August or September, the young begin dispersing.

San Joaquin kit foxes maintain core home range areas that are exclusive to mated pairs and their offspring (White and Ralls 1993, Spiegel 1996). Home ranges of approximately 1 to 12 square miles have been reported (Morrell 1972, Knapp 1978, Zoellick et al. 1987*b*, Spiegel and Bradbury 1992, White and Ralls 1993). Individuals often move independently within their home range, traveling an average of 5.8 to 9.1 miles per night (Cypher 2000).

The territorial spacing behavior exhibited by San Joaquin kit fox eventually limits the number of individuals that can inhabit an area owing to shortages of available space and/or per capita prey (White and Garrott 1999). Hence, as habitat is fragmented or destroyed, the carrying capacity of a particular area is reduced and a larger proportion of the juvenile population is likely forced to disperse. Increased dispersal can lead to lower juvenile survival rates and possibly decreased abundance.

Approximately 65 percent of dispersing juvenile San Joaquin kit foxes on the Naval Petroleum Reserves, California, died within 10 days of leaving their natal range (Koopman et al. 2000). Juvenile San Joaquin kit foxes would likely be less familiar with the location of escape dens and, as a result, may be more susceptible to predation by coyotes. At higher San Joaquin kit fox densities, the number of juveniles that encounter coyotes probably increases. Also, a larger proportion of juveniles probably disperse as San Joaquin kit fox density increases because there is a shortage of available territories. Dispersing juveniles may be highly susceptible to predation by coyotes because they have little or no knowledge of the location of potential escape dens when traversing unfamiliar areas (White and Garrott 1999). Dispersal likely occurs most often at night.

An anual mortality rate of approximately 50 percent has been reported for adult San Joaquin kit foxes (Morrell 1972, Egoscue 1975, Berry et al. 1987*a*, Ralls and White 1995, Standley et al. 1992). The annual mortality rate for juvenile San Joaquin kit foxes may be closer to 70 percent (Berry et al. 1987*a*). Predation by larger carnivores, such as coyotes, accounts for the majority of San Joaquin kit fox mortality. The effects of disease, parasites and accidental death are largely unknown, but were thought to account for only a small portion of mortality (Berry et al. 1987*a*).

San Joaquin kit foxes use dens for temperature regulation, shelter from adverse environmental conditions, reproduction, and escape from predators. San Joaquin kit foxes may build their own dens or modify and use dens constructed by other animals, such as ground squirrels, badgers (*Taxidea taxus*), and coyotes (Jensen 1972, Morrell 1972, Hall 1983, Berry et al. 1987*b*), and human-made structures such as culverts, abandoned pipelines, and banks in sumps or roadbeds. However, there is no evidence to suggest San Joaquin kit foxes give birth in human structures (Spiegel et al. 1996). San Joaquin kit foxes often change dens and numerous dens may be used throughout the year. San Joaquin kit foxes change dens four or

five times during the summer months, and change natal dens one or two times per month (Morrell 1972).

San Joaquin Kit foxes prefer loose-textured soils (Grinnell et al. 1937, Hall 1946, Egoscue 1962, Morrell 1972), but are found on virtually every soil type. Throughout their range, San Joaquin kit foxes are currently limited to remaining grassland, saltbush, open woodland, alkali sink valley floor, and other similar habitats located along bordering foothills and adjacent valleys and plains.

Dens appear to be scarce in areas with shallow soils because of the proximity to bedrock (OFarrell and Gilbertson 1979, OFarrell et al. 1980), high water tables (McCue et al. 1981), or impenetrable hardpan layers (Morrell 1972). In general, plant communities such as Northern Hardpan Vernal Pool, Northern Claypan Vernal Pool, Alkali Meadow, and Alkali Playa do not provide good denning habitat for San Joaquin kit foxes because all have moist or waterlogged clay or clay-like soils.

Although there are many causes of San Joaquin kit fox mortality (Service 1998) the principal factors that have contributed to the population decline are loss, degradation, and fragmentation of habitat associated with agricultural, industrial, and urban developments in the San Joaquin Valley (Laughrin 1970, Jensen 1972, Morrell 1975, Knapp 1978). By 1979, only about 6.7 percent of the San Joaquin Valley floor's original wildlands south of Stanislaus County remained untilled and undeveloped. Loss and degradation of habitat by agricultural and industrial developments and urbanization continue, decreasing carrying capacity of remaining habitat and threatening San Joaquin kit foxes through displacement, increased predation, direct mortalities such as vehicle strikes, and reduction of prey populations. Livestock grazing is not thought to be detrimental to San Joaquin kit foxes (Morrell 1975, Orloff et al. 1986), but may alter the numbers of different prey species, depending on the intensity of the grazing. Other developments within the range of the San Joaquin kit fox include cities and towns, aqueducts, irrigation canals, surface mining, road networks, non-petroleum industrial projects, power lines, and wind farms. Although these types of developments may negatively impact its habitat and indirectly lead to injury or mortality of individuals, the San Joaquin kit fox may survive within or adjacent to them given adequate prey base and den sites.

The coyote and the introduced red fox (*Vulpes vulpes*) compete for food resources with the smaller San Joaquin kit fox and are known to prey upon San Joaquin kit foxes as well. Predation, competition, poisoning, illegal shooting and trapping, prey reduction from rodent control programs, and vehicle strikes contribute substantially to the vulnerability of this species (Service 1998).

A primary strategy in the recovery plan is to establish and maintain a viable complex of San Joaquin kit fox populations (*i.e.*, a viable metapopulation) on private and public lands throughout its geographic range. The recovery plan (Service 1998) recommends protecting the Carrizo Plain Natural Area, western Kern County, and the Ciervo-Panoche Natural Area

as core populations, maintaining multiple satellite populations, and enhancing natural connections between populations to help reduce the harmful effects of habitat loss and fragmentation. Recent observations suggest that the size of the Ciervo-Panoche Natural Area population may be more modest than previously thought, and this site may not support a core population of San Joaquin kit fox (B. Cypher, pers. comm 2005a).

In the northern most part of the range, west of the town of Tracy, the topography and structures (interstates, canals, aqueducts, etc.) form a triangle on maps. This area has been dubbed the "Tracy Triangle". The northern extent of this area includes the protected lands around Bethany Reservoir and the southern boundary is the county line shared by Stanislaus and San Joaquin Counties. The existing structures and natural topography in the area create a pinch point in the linkage area around the San Joaquin Valley edge (Service 1998). This area is under pressure by increasing development. Communities within Alameda, Contra Costa, and San Joaquin counties have expanded, in part, to low housing prices and to the growth in the Silicon Valley (Kit Fox Planning and Conservation Team 2001). In February 2001, the Service, San Joaquin County, and several cities signed the San Joaquin County Multi-species Habitat Conservation and Open Space Plan. A draft HCP/Natural Communities Conservation Plan (NCCP) for East Contra Costa County has been prepared and a notice of availability was published in the federal register on September 2, 2005 (70 FR 52434). This HCP/NCCP proposes to mitigate the effects of proposed urban development activities, rural infrastructure projects, and preserve management activities on San Joaquin kit foxes and other species, using a system of new preserves linked to existing protected areas.

The Santa Nella area, in Western Merced County, California, is another crucial area to the San Joaquin kit fox. In the past, this area has provided a narrow corridor connecting the northern and southern populations. This area is also considered a pinch point as surrounding development limits movement of San Joaquin kit fox and increases fragmentation of habitat. Further development may eliminate usable habitat in the Santa Nella area and further isolate the northern kit fox populations. Recently a notice of availability was published in the Federal Register regarding a HCP for the Santa Nella area (70 FR 6452). Habitat preservation associated with the HCP is intended to achieve the goal of protecting and maintaining habitat to facilitate population interchange between the core population to the south and northern kit fox populations.

Information regarding movement patterns in northeast San Luis Obispo County and southeast Monterey County is limited. Three occurrences of San Joaquin kit fox movement have been documented between Salinas-Pajaro Region and the Carrizo Plain Natural Area and the area east of Paso Robles. In 1989, a San Joaquin kit fox tagged at Camp Roberts military installation, along the Monterey/San Luis Obispo County line, was captured in the town of California Valley at the northern end of the Carrizo Plain (Standley 1989). In 2000, two San Joaquin kit foxes moved from Camp Roberts to areas south of SR 46, in the San Juan Valley, San Luis Obispo County (R. Root pers. comm. 2005a).

In June 2001, a San Joaquin kit fox was observed on the west side of Cholame Road, approximately 3 miles north of SR 46 (R. Stafford 2001). Recently, a 10 month old female San Joaquin kit fox was found dead on highway 58 near San Juan Creek, several miles northwest of the Carrizo Plain (B. Cypher pers. comm. 2005b).

Larger than average numbers of San Joaquin kit fox observed on the Carrizo Plain in 2005 (R. Stafford, pers. comm. 2005) may result in increased competition for food and space, leading to increased dispersal to places like the San Juan Creek drainage and areas south of Shandon and Cholame (where two kit foxes that dispersed from Camp Roberts were trapped and collared in 2000), as well as along the Estrella River corridor north to San Miguel, Camp Roberts, King City, and the rest of the Salinas Valley. The role that natural connections between the Salinas Valley and the Carrizo Plain Natural Area may play in maintaining the vigor and ensuring the survival of the metapopulation is complex and yet to be characterized.

Although the extent of movement of San Joaquin kit foxes between the Salinas Valley and the Carrizo Plain Natural Area is unknown, land development along the natural movement corridors between these areas may have contributed to reduced immigration of San Joaquin kit foxes into the Salinas Valley. The number of San Joaquin kit foxes captured at Camp Roberts during annual live-trapping decreased from 103 to 20 from 1988 to 1991. This trend continued through 1997 when only 3 San Joaquin kit foxes were captured. Scent station visits and observations of San Joaquin kit foxes during spotlighting sessions also decreased. Low numbers of previously unmarked young-of-the-year or immigrant San Joaquin kit foxes suggests that recruitment into the Camp Roberts population was low (White et al. 2000).

The cause of the population decline at Camp Roberts has been attributed to a combination of factors including predation by coyotes; displacement by red foxes, rabies and low recruitment (White et. al 2000). Prey abundance did not appear to be a primary factor in the decreased population. Mammalian prey species never appeared to be sufficiently scarce to drastically reduce reproductive or neonatal survival rates (White and Garrott 1997). There is also little evidence that military activities contributed substantially to the decrease in abundance of San Joaquin kit foxes (White et al. 2000). Currently, few San Joaquin kit fox are believed to occur at Camp Roberts. In the northern Salinas Valley, CDFG is working through their Resource Assessment Program to begin evaluating the status of San Joaquin kit fox in San Benito and Monterey Counties (R. Root, pers.comm. 2005b).

In contrast to the Camp Roberts population, the San Joaquin kit fox population at the Carrizo Plain Natural Area reached a record high by the mid-1990s. Even though numbers decreased slightly again in 1997 and 1998, the population is within normal bounds and is considered to be stable. The abundance of San Joaquin kit foxes at the Carrizo Plain Natural Area appears tied closely to the abundance of their prey species, kangaroo rats and lagomorphs (R. Stafford, pers. comm. 2005). During the summer of 2005, a new record number of San Joaquin kit foxes were sighted on the Carrizo Plain. CDFG observed 119 foxes on two combined spotlighting routes, surpassing the previous high of 85 in 1996. CDFB estimated the typical

number of San Joaquin kit foxes observed at the Carrizo Plain during the summer is around 60 (R. Stafford, pers. comm. 2005).

A recent survey effort conducted during the spring of 2005 revealed 29 sightings of San Joaquin kit fox in western Kern County and eastern San Luis Obispo County near the Palo Prieto area. Two individuals were also seen along South Bitterwater Valley Road (J. Moonjian, pers. comm).

Population trends in each of the core areas are not clear. Based on CDFG surveys and recent observations in the Lokern area (western Kern County), San Joaquin kit fox numbers appear relatively high. Numbers on the Carrizo and in western Kern County fluctuate with environmental conditions, but these two populations tend to remain fairly robust. In large part, this is attributable to the fact that habitat quality for San Joaquin kit foxes in these two areas is the highest of anywhere in the range (B. Cypher, pers. comm. 2005b).

California Red-legged Frog

On May 23, 1996, the Service published a final rule to list the California red-legged frog as threatened (61 FR 25813). The Service has published a recovery plan for the species (Service 2002). Critical habitat for the California red-legged frog was designated on March 13, 2001 (66 FR 14625). On November 6, 2002, the United States District Court for the District of Columbia set aside the designation and ordered the Service to publish a new final rule with respect to the designation of critical habitat for the California red-legged frog *(Home Builders Association of Northern California et al. versus Gale A Norton, Secretary of the Department of Interior et al.* Civil Action No. 01-1291 (RJL) U.S. District Court, District of Columbia.). We proposed a revised critical habitat designation April 13, 2004 (69 *FR* 19620). On November 3, 2005, we re-proposed critical habitat based on more refined mapping (70 FR 66906). Detailed information on the biology of California red-legged frogs can be found in Storer (1925), Stebbins (1985), and Jennings et al. (1992).

The California red-legged frog is one of two subspecies of the red-legged frog (*Rana aurora*) found on the Pacific coast. The historical range of the California red-legged frog extended from the vicinity of Point Reyes National Seashore, Marin County, California, coastally and from the vicinity of Redding, Shasta County, California, inland southward to northwestern Baja California, Mexico.

The California red-legged frog has been extirpated or nearly extirpated from 70 percent of its former range. At present, California red-legged frogs are known to occur in approximately 243 streams or drainages from 22 counties, primarily in central coastal California. Habitat loss and alteration, combined with over-exploitation and introduction of exotic predators, were important factors in the decline of the California red-legged frog in the early to mid 1900s. Ongoing threats include fragmentation, degradation, loss of habitat and establishment of non-native vegetation and predators as a result of urbanization and agricultural activities.

The California red-legged frog occupies habitat that combines both specific aquatic and riparian components. The adults are typically found in dense, shrubby or emergent riparian vegetation closely associated with deep (more than two feet in depth) still or slowly moving water. They breed and migrate from November through March and into spring depending on rainfall, although earlier breeding has been recorded in the southern part of their range. Female California red-legged frogs deposit egg masses on emergent vegetation, floating on the surface of the water. Egg masses contain about 2,000 to 5,000 moderate-sized (0.08 to 0.11 inch in diameter), dark reddish-brown eggs. Eggs hatch in 6 to 14 days. Tadpoles undergo metamorphosis 3.5 to 7 months after hatching. California red-legged frogs normally reach sexual maturity at 3 to 4 years of age. Individuals may live 8 to 10 years.

Juvenile and adult California red-legged frogs have been observed in areas of riparian vegetation where they may use small mammal burrows, moist litter, and debris such as old boards for cover. Radio telemetry studies showed that individual California red-legged frogs move within the riparian zone from vegetated areas to pools. During wet periods (particularly winter and spring), California red-legged frogs may move long distances between aquatic habitats, often traveling through habitats considered to be unsuitable. California red-legged frogs have been found more than one mile from breeding habitat and may reach isolated aquatic habitats up to a mile away from the nearest known California red-legged frog populations.

The diet of California red-legged frogs is highly variable. Tadpoles probably eat algae. Invertebrates are the most common food item for adults. Vertebrates, such as Pacific chorus frogs (*Pseudacris regilla*) and California mice (*Peromyscus californicus*), represented over half of the prey mass eaten by larger individuals. Juveniles are active diurnally and nocturnally, whereas adults are largely nocturnal. Feeding activity probably occurs along the shoreline and on the surface of the water.

Habitat loss and alteration, combined with over-exploitation and introduction of exotic predators, were important factors in the decline of the California red-legged frog in the early to mid-1900s. Habitat loss and degradation continue to threaten California red-legged frogs where agriculture and urbanization are found within their range. Road maintenance projects, off-road vehicle use, and livestock grazing contribute to erosion of stream banks and siltation of streams where California red-legged frog eggs can be smothered. Siltation that occurs during the breeding season can lead to asphyxiation of eggs resulting in small California red-legged frog larvae. Exotic predators like the bullfrog (*Rana catesbeiana*), catfish (*Ictalurus* spp.), bass (*Micropterus* spp.), mosquito fish (*Gambusia affinis*), red swamp crayfish (*Procambarus clarkii*), and signal crayfish (*Pacifastacus leniusculus*) were introduced in the 1800s to 1900s, and prey on at least one life stage of the California red-legged frog. Raccoons (*Procyon lotor*) are known to depress California red-legged frog populations and are often associated with rural developments. The most important mortality factor in the pre-hatching stage is water salinity. On the central California coast, drought may also play a role in decreased reproduction where California red-legged frogs occur in coastal lagoons. High salinity in lagoons can be attributed to drought in many instances.

California Tiger Salamander

On August 4, 2004, we listed the California tiger salamander, Central population, as threatened (69 FR 47212). The California tiger salamander is recognized as a species of special concern by the CDFG. The species persists in disjunct remnant vernal pool and isolated ponds scattered mainly along narrow strips of rangeland on each side of the Central Valley from southern Colusa County south to northern Kern County, and in sag ponds and human-maintained stock ponds in the coast ranges from Suisun Bay south to the Temblor Range. Populations of California tiger salamanders located in Sonoma and Santa Barbara counties are federally listed as endangered.

The California tiger salamander has been eliminated from an estimated 55 to 58 percent of its historic breeding sites and has lost an estimated 75 percent of its upland and dispersal habitat. Although there are approximately 150 known local populations of California tiger salamanders, only the populations at Jepson Prairie Natural Preserve and Hickson Preserve occur in a permanently protected conservation area.

The California tiger salamander is a large, stocky, terrestrial salamander with a broad, rounded snout. Adults may reach a total length of 8.2 inches, with males generally averaging about 8 inches and females averaging 6.8 inches. For both sexes, the average snout–vent length is approximately 3.6 inches. The small eyes have black irises and protrude from the head. Coloration consists of white or pale yellow spots or bars on a black background on the back and sides and a yellow belly. Males can be distinguished from females, especially during the breeding season, by their swollen cloacae (a common chamber into which the intestinal, urinary, and reproductive canals discharge), more developed tail fins, and larger overall size (Stebbins 1962; Loredo and Van Vuren 1996).

The California tiger salamander inhabits low elevation vernal pools and seasonal ponds and associated grassland, oak savannah, and coastal scrub plant communities. Although California tiger salamanders are adapted to natural vernal pools and ponds, they now frequently use manmade or modified ephemeral and permanent ponds, including stock ponds. California tiger salamanders prefer open grassland to areas of continuous woody vegetation.

California tiger salamanders spend the majority of their lives in upland habitats. The upland component typically consists of grassland savannah, but also can consist of grasslands with scattered oak trees, and scrub and chaparral habitats. Juvenile and adult California tiger salamanders spend the dry summer and fall months in the burrows of California ground squirrels and Botta's pocket gopher (*Thomomys bottae*). California tiger salamanders cannot dig their own burrows, and as a result their presence is associated with active burrows of small mammals such as ground squirrels and pocket gophers.

The California tiger salamander was first described as a distinct species, *Ambystoma californiense*, by Gray in 1853 from specimens collected in Monterey (Grinnell and Camp 1917). Storer (1925) and Bishop (1943) likewise considered the California tiger salamander

to be a distinct species. However, Gehlbach (1967) and Frost (1985) classified the California tiger salamander as a subspecies (*Ambystoma tigrinum californiense*) within the *A. tigrinum* complex. Based on recent morphological and genetic work, evidence of geographic isolation, and ecological differences among the members of the *A. tigrinum* complex, the California tiger salamander is currently considered to be a distinct species (Shaffer and Stanley 1991; Jones 1993; Shaffer and McKnight 1996; Irschick and Shaffer 1997) and was recognized as such in an Annual Notice of Review published by the Service on November 21, 1991 (56 FR 58804).

The most comprehensive analysis of the California tiger salamander's taxonomic status currently available is based on an examination of mitochondrial DNA (mtDNA) sampled from the entire tiger salamander complex, including all 14 currently recognized species and five additional subspecies from across the U.S. and Mexico (Shaffer and McKnight 1996). This study recognized the California tiger salamander as a distinct species and found that it was the sister-species to the remaining 13 species in the tiger salamander complex. Other published and ongoing studies of allozymes (Shaffer et al. 1993), nuclear gene sequences (Shaffer et al. 2004) and morphology (Krauss 1988) concur that *A. californiense* is a well-differentiated taxon that is most appropriately recognized as a full species. The recent literature has uniformly accepted this position (Petranka 1998).

Although California tiger salamanders spend most of their lives in upland habitats, their reproduction is tied to aquatic habitats. Historically, they bred primarily in natural vernal pools, but they have been able to breed successfully in human-made stock ponds created for ranching and agricultural purposes. Migrations to and from breeding ponds occur during the rainy season (November to May), with the greatest activity from December to February (Storer 1925; Loredo and Van Vuren 1996; Trenham et al. 2000). Breeding migrations are strongly associated with rainfall events (Loredo and Van Vuren 1996; Trenham et al. 2000). Breeding may occur in one major bout or during a prolonged period of several months, depending on the rainfall pattern (Loredo and Van Vuren 1996; Trenham et al. 2000).

Female California tiger salamanders mate and lay their eggs singly or in small groups (Twitty 1941; Shaffer et al. 1993). The number of eggs laid by a single female ranges from approximately 400 to 1,300 per breeding season (Trenham et al. 2000). The eggs are typically attached to vegetation near the edge of the breeding pond (Storer 1925; Twitty 1941), but in ponds with limited or no vegetation, they may be attached to objects (rocks, boards, etc.) on the bottom of the pond (Jennings and Hayes 1994). After breeding, adults leave the pond and return to small mammal burrows (Loredo et al. 1996; Trenham 2001), although they may continue to come out nightly for approximately the next two weeks to feed (Shaffer et al. 1993).

Lifetime reproductive success for other tiger salamanders is typically low, with fewer than 30 metamorphic juveniles per breeding female. Trenham et al. (2000) found even lower numbers for California tiger salamanders, with roughly 12 lifetime metamorphic offspring per breeding female. In part, this low reproductive success is due to the extended time it takes for

California tiger salamanders to reach sexual maturity: most do not breed until 4 or 5 years of age. While individuals may survive for more than 10 years, fewer than 50 percent breed more than once (Trenham et al. 2000). Combined with low survivorship of metamorphosed individuals (in some populations, less than 5 percent of marked juveniles survive to become breeding adults (Trenham et al. 2000), reproductive output in most years is not sufficient to maintain populations. This trend suggests that the species requires occasional "boom" breeding events to prevent extirpation (temporary or permanent loss of the species from a particular habitat) or extinction (Trenham et al. 2000). With such low recruitment, isolated subpopulations can decline greatly as a result of unusual, randomly occurring natural events and human-caused factors that reduce breeding success and individual survival.

Movements made by California tiger salamanders can be grouped into two main categories: (1) breeding migration; and (2) interpond dispersal. Breeding migration is the movement of salamanders to and from a pond from the surrounding upland habitat. After metamorphosis, juveniles move away from breeding ponds into the surrounding uplands, where they live continuously for several years (on average, 4 years). Upon reaching sexual maturity, most individuals return to their natal/birth pond to breed, while 20 percent disperse to other ponds (Trenham et al. 2001). Following breeding, adult California tiger salamanders return to upland habitats, where they may live for one or more years before breeding again (Trenham et al. 2000).

California tiger salamanders are known to travel large distances from breeding ponds into upland habitats. Maximum distances moved are generally difficult to establish for any species, but California tiger salamanders have been recorded to disperse 1.3 mile from breeding ponds (S. Sweet in litt. 1998). California tiger salamanders are known to travel between breeding ponds; one study found that 20 to 25 percent of the individuals captured at one pond were recaptured later at ponds approximately 1,900 and 2,200 feet away (Trenham et al. 2001).

Although the observations above show that California tiger salamanders can travel far, typically they stay closer to breeding ponds. Evidence suggests that juvenile California tiger salamanders disperse further into upland habitats than adults. A trapping study conducted in Solano County during winter 2002–03 found that juveniles used upland habitats further from breeding ponds than adults (Trenham and Shaffer 2005). More juvenile salamanders were captured at distances of 328, 656, and 1,312 feet from a breeding pond than at 164 feet. Large numbers (approximately 20 percent of total captures) were found 1,312 feet from a breeding pond.

Results from a 2003–04 trapping efforts detected juvenile California tiger salamanders at even further distances, with a large proportion of the total salamanders caught at 2,297 feet from the breeding pond. Surprisingly, most juveniles captured, even those at 2,297 feet were still moving away from ponds (B. Fitzpatrick pers. comm. 2004). These data show that many California tiger salamanders travel far while still in the juvenile stage. Post-breeding movements away from breeding ponds by adults appear to be much smaller. During post-

breeding emigration, radio-equipped adult California tiger salamanders were tracked to burrows between 62 and 813 feet from their breeding ponds (Trenham 2001). These reduced movements may be due to adult California tiger salamanders having depleted physical reserves post breeding, or also due to the drier weather conditions that can occur during the period when adults leave the ponds.

The spatial distribution of California tiger salamanders in the uplands surrounding breeding ponds is a key issue for conservation planning. Although it might be supposed that California tiger salamanders will move only short distances if abundant burrows are found near their ponds, this is not the case. In the aforementioned study in Solano County, while abundant burrows are available near the pond, a nearly equal number of California tiger salamanders were captured at 328, 656, and 1,312 feet from the breeding pond (Trenham and Shaffer 2005). Similarly, Trenham (2001) tracked salamanders to burrows up to 813 feet from a breeding pond, although burrows were abundant at distances nearer to the pond. In addition, rather than staying in a single burrow, most individuals used several successive burrows at increasing distances from the pond.

Generally, the rate of natural California tiger salamander movement both within a subpopulation (i.e., between breeding and upland sites) and among subpopulations (i.e., between individual pools or pool complexes) depends on the distance between these habitats and the conditions within intervening areas (e.g., topography, vegetation, distribution of small mammal burrows, etc.). Dispersal distance is also closely tied to precipitation, as California tiger salamanders are known to travel farther in years with more rainfall.

The primary cause of the decline of the California tiger salamanders is the loss, degradation, and fragmentation of habitat from human activities. Several other factors, including competition from introduced species and predation, may have negative effects on California tiger salamanders and their aquatic and upland habitats. Non-native or introduced predators of California tiger salamanders include bullfrogs (*Rana catesbeiana*), mosquitofish (*Gambusia affinis*), Louisiana red swamp crayfish (*Procambarus clarki*), catfish (*Ictalurus* sp.), bluegill (*Lepomis macrochirus*), largemouth bass (*Micropterus salmoides*), fathead minnow (*Pimephales promelas*) and other introduced fish (Shaffer et al. 1993, Graf 1993; Gamradt and Kats 1996, Anderson 1968, Morey and Guinn 1992).

Various nonnative subspecies of the tiger salamander within the *Ambystoma tigrinum* complex have been imported into California for use as fish bait. The introduced salamanders may out-compete the California tiger salamanders. A deformity-causing infection, possibly caused by a parasite in the presence of other factors, has affected pond-breeding amphibians at known California tiger salamander breeding sites. This same infection has become widespread among amphibian populations in Minnesota and poses the threat of becoming widespread in California.

Reduction of ground squirrel populations to low levels through widespread rodent control programs may reduce availability of burrows and adversely affect the California tiger

salamander. Poison typically used on ground squirrels is likely to have a disproportionately adverse effect on California tiger salamanders, which are smaller than the target species and have permeable skins. Use of pesticides, such as methoprene, in mosquito abatement may have an indirect adverse effect on the California tiger salamander by reducing the availability of prey. Automobiles and off-road vehicles can kill a significant number of migrating California tiger salamanders, and contaminated runoff from roads, highways and agriculture may adversely affect them.

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 *Code of Federal Regulations* 402.02). For the purposes of this biological opinion, we consider the action area to be the 24 mile length of the widening project and extending outward perpendicular to the road to varying widths. The extent of the boundary of the affected area varies based on topography, wind and water movement, habitat suitability, and the biology of the species evaluated (Forman 2003). We are not able to determine the precise area that would be affected, based on the information Caltrans has provided us for this project. For example, in the absence of site-specific surveys for San Joaquin kit fox it is impossible to know what project-related effects would affect San Joaquin kit fox at specific locations and how far reaching those effects would occur. After review of the scientific literature (Trombulak and Frissell 2000, Forman and Alexander 1998, Forman 2003, Bulger et al. 2003, Sweet in litt. 1998)) and the information provided by FHWA and Caltrans, we assume that an area extending out 1.5 mile on each side of the proposed project likely encompasses the direct and indirect effects of the action on the San Joaquin kit fox, California red-legged frog and California tiger salamander. The discussion in the Effects of the Action section of this biological opinion will explain how these effects radiate out from the project area.

San Joaquin Kit Fox

The San Joaquin kit fox is known to have historically occupied grassland and blue oak woodlands along the entire length SR 46 (Caltrans 2003a). San Joaquin kit foxes have been documented within the action area, although not in high numbers. In 1999, one adult was recorded in the action area, near the east end of the proposed project, about 0.2 mile southeast of the SR 41/46 interchange (Smallwood 1999). Near the west end of the proposed project, one San Joaquin kit fox was documented in the vicinity of Barney Schwartz Park in Paso Robles in 1991 (Caltrans 2003a.). A lack of focused surveys for San Joaquin kit fox may explain why there are few documented occurrences within the action area.

Within the last decade much of the suitable habitat between Paso Robles and Shandon (about two-thirds of the entire project length) has been converted to vineyards or other development. However, San Joaquin kit fox can still move through the action area, dispersing from nearby populations. The proposed project is located within two important movement corridors.

Lands along SR 46, between Blackwell's Corner and Paso Robles, provide connectivity between the Salinas River Valley and Antelope Plain-Blackwell's Corner satellite populations. Lands in the San Juan Creek Valley, between the northern Carrizo Plain and Shandon, provide connectivity between the Carrizo Plain population and the Salinas River Valley and Antelope Plain-Blackwell's Corner satellite populations (Cypher 2000). A recent effort to model potential movement corridors using land use, parcel size, known San Joaquin kit fox occurrences, habitat suitability, and development pressure, consistently assumed a likely movement corridor that broadly intersects SR 46 between Shandon and the Cholame Valley (McElwee 2005). Most of the Cholame Valley is non-tilled rangeland that includes the best and most un-fragmented habitat in the action area. This area contains extensive undeveloped grasslands containing a variety of badger dens and other dens that could be used by San Joaquin kit fox, as well as a variety of prey species for San Joaquin kit fox (Caltrans 2003).

Although movement of San Joaquin kit foxes across SR 46 has been documented (Standley 1989, R. Root, pers. comm. 2005a) it has not been examined extensively. Only limited studies of marked individuals have been conducted on the populations to the north and south of SR 46 (i.e. Camp Roberts and Carrizo Plain). Consequently, the significance of this area to the structure and success of the metapopulation remains unknown.

California Red-legged Frog

A creek that crosses SR 41 at PM 45.5, within the Y section, is intermittent, but contains six permanent pools along a 1,476-foot stream reach. Surveys were not conducted because the property is on private land. These pools are suitable breeding habitat for California red-legged frogs and are approximately 1 mile downstream of a permanent water source where Caltrans found one California red-legged frog during surveys for the Antelope Grade section of SR 46 (Caltrans 2003c). Two additional permanent ponds also considered in our previous biological opinion (Service 2005) are located several hundred feet south of the SR 46 and approximately 1.2 miles east of the proposed interchange of SR 41 and SR 46. Caltrans biologists documented approximately 100 hundred adult and 100 juvenile frogs in these ponds and identified the ponds as breeding sites (Caltrans 2003c). These ponds have the potential to produce thousands of metamorph and juvenile California red-legged frogs.

Two other annual streams cross under SR 46 at PM 56.3 and 57.4. These streams flow from the south side of SR 46 northward under SR 46 via a box culvert where they eventually empty into a flood basin at the SR 41/46 interchange. No California red-legged frogs were found in these streams during the course of surveys.

California tiger salamander

Although surveys for California tiger salamanders have not been conducted in the action area, Caltrans and the Service believe it is reasonable to assume California tiger salamanders are present due to the presence of suitable upland and breeding habitat. Five ponds (Cholame

Ponds) occur at varying distances, between 0.5 mile and 1.7 miles, from the proposed project site (Caltrans 2003a). The nearest known California tiger salamander breeding ponds are Kerr Lake, 3.45 miles north of the project site, and O' Brien Lake, 3.3 miles south of the project site. Additional un-surveyed ponds occur between the known breeding sites and the Cholame Ponds nearest the project site (Caltrans 2003a).

Although the distances between the known and un-surveyed ponds are beyond the maximum known dispersal distance of 1.3 miles, there are apparently no barriers that would preclude dispersal between the known breeding sites, the un-surveyed ponds, and the Cholame Ponds. California tiger salamanders occur in sag ponds and vernal pools created by the San Andeas fault, from the temblor range in San Luis Obispo County, north to Santa Cruz County (Caltrans 2003). We surmise that additional ponds or wetland complexes may have occurred within the San Andreas rift zone at some point in the past, possibly contributing to California tiger salamander dispersal.

Because the Cholame Ponds appear to be suitable breeding habitat (Caltrans 2003), occupied ponds and additional un-surveyed ponds occur to the north and south of the Cholame Ponds, and there are no known dispersal barriers, Caltrans and the Service assume California tiger salamanders are present in the action area.

EFFECTS OF THE ACTION

San Joaquin Kit Fox

The proposed project would result in the permanent loss of approximately 352 acres, and temporary impacts to 283 acres of San Joaquin kit fox habitat, along the 24 mile length of the project site. Caltrans determined all undeveloped land in the study area of the proposed project is potential foraging and or denning habitat for the San Joaquin kit fox (Caltrans 2003). San Joaquin kit fox foraging or denning within the construction footprint of the proposed project will be permanently displaced during and following construction.

Resident San Joaquin kit foxes or individuals moving through the action area may use existing dens and project components (i.e. pipes) for shelter. San Joaquin kit foxes that are dispersing through the action area are likely to be moving through at night and would likely be sheltering in dens during the day (Koopman et al. 2000). San Joaquin kit foxes that are present in the action area during the proposed project may be injured or killed by construction activities. Injury or mortality of San Joaquin kit foxes may occur if they are trapped or crushed in dens by heavy equipment, or inadvertently trapped in open trenches, uncapped pipes, or culverts.

Caltrans has included measures in their project description in order to minimize the potential for San Joaquin kit foxes to be trapped or crushed during construction. These minimization measures include but are not limited to:

a. Covering trenches at the close of each working day;

b. Providing escape ramps in trenches and excavations;

c. Placing caps on pipes with diameters of 4 inches or greater;

d. Conducting pre-construction surveys and construction monitoring, using Service-approved biologists, to reduce the chance that an occupied San Joaquin kit fox den would be subject to excavation, grading, or construction activity;

e. All construction pipe, culverts, or similar structures with a diameter of three inches or greater that are stored at a construction site for one or more nights will be thoroughly inspected for San Joaquin kit foxes before the pipe is subsequently moved, buried, or capped. If during inspection a San Joaquin kit fox is found inside a pipe, Caltrans will not move that section of pipe until the animal escapes or they will move the section of pipe once, out of the immediate construction area.

Construction related traffic could result in vehicles striking San Joaquin kit foxes. Because San Joaquin kit foxes are likely to be active at night, and may be moving around or through the action area, there is a greater chance they could be struck by construction traffic if construction also occurs at night. Death of adult San Joaquin kit foxes during the breeding season (November-January) could result in reduced reproductive success, and death of females during gestation or prior to pup weaning could result in loss of an entire litter of young, and therefore, reduced recruitment into the population (Cypher 2000). Caltrans proposes to provide project employees with training and written guidance governing vehicle use when traveling within the project area, and to strongly encourage a speed limit of 20 miles per hour on unpaved roads within San Joaquin kit fox habitat.

Protective actions may disrupt normal movement patterns and displace San Joaquin kit fox making them more susceptible to predation. For instance, Caltrans proposes to excavate and destroy potential and known dens if they can not be avoided during construction. A San Joaquin kit fox may be more susceptible to predation or subject to temperature extremes, after being removed from an excavated den.

San Joaquin kit foxes may be injured or killed if exposed to hazardous materials, such as spilled or leaking fuels, antifreeze, and herbicides and rodenticides used for the control of weeds and rodents. Caltrans has proposed to restrict the use of rodenticides and herbicides to Service and CDFG approved plans, we anticipate a low potential for injury or mortality associated with the hazardous materials described in this biological opinion.

Project-related garbage may attract San Joaquin kit foxes and predators such as coyotes, red fox, and pet or feral dogs and cats to the project area. To minimize the potential for San Joaquin kit foxes and predators to be attracted to the project site, Caltrans proposes to keep all food-related trash items in closed containers and to remove food-related trash at least once per

week. Caltrans will also ban pets from the construction area, and provide a worker awareness training program.

Because the proposed project would be completed in four sections, over approximately 10 years, construction would not occur along the entire length of the project at the same time. Consequently, San Joaquin kit fox would not be exposed to direct adverse effects, such as construction vehicle strikes, entombment, crushing, etc., along the entire 24-mile length of the project at the same time, but would be subject to these stressors during each separate phase of the project. Two sections (Estrella, Shandon) are each approximately 10 miles long while the other two sections (Cholame, Y) are each approximately two miles long.

The proposed widening of SR 46 from two to four lanes, as well as an increase in the speed limit from 55 to 70 miles per hour, may result in increased injury or mortality of San Joaquin kit fox due to the potential for more frequent vehicle strikes. The number of strikes likely increases with road size, traffic volume, and average speed (Clevenger and Waltho 1999).

The proposed project will likely contribute to a reduction in landscape connectivity and increased habitat fragmentation. Landscape connectivity may be important for animals foraging within their home range, for dispersal to establish a new home range, and for migration between locations. When landscape connectivity is high, animals are able to re-populate areas that have suffered local population declines and extirpations, and minimize the effects of inbreeding (Forman 2003, Cypher 2000). Movement and dispersal corridors are important for alleviating over-crowding and intraspecific competition during years when San Joaquin kit fox abundance is high. Roads may reduce the suitability of habitat for San Joaquin kit foxes by fragmenting it into areas to small for effective use. As habitat areas decrease in size the number of San Joaquin kit foxes the area can support also decrease (Cypher 2000).

The likelihood of a road acting as barrier increases with a larger road size, higher traffic volume, and the presence of fences or median barriers. Knapp (1978) monitored movements of radio-collared San Joaquin kit foxes in the vicinity of Interstate 5 in Kern County. Many of the San Joaquin kit foxes used areas within 3 kilometers of the highway, and most exhibited movement and home range patterns that parallel the highway, but did not cross it. Only on 2 occasions were animals located on the opposite side of the highway from their primary area of use. Interstate 5 has altered kit fox space use patterns, and effectively restricted movements by San Joaquin kit foxes (Cypher 2000).

The fragmentation of habitat associated with the proposed SR 46 widening could also eventually lead to reduced genetic variation in populations of San Joaquin kit foxes. Genetically isolated populations are at greater risk of deleterious genetic effects such as inbreeding, genetic drift, and founder effects (Cypher 2000). An increase in inbreeding and the loss of genetic variation could increase the extinction risk for small, isolated populations of kit foxes by interacting with demography to reduce fecundity, juvenile survival, and lifespan (Lande 1988, Frankham and Ralls 1998, Saccheri et al. 1998).

The effects from roads may extend some distance beyond the footprint of the road. Foreman and Deblinger (1998) described this affected area as the "road-effect" zone, where a variety of statistically significant adverse effects (e.g. mortality, habitat degradation, fragmentation, disturbance, environmental contaminants, etc.) can occur. The lateral extent of the road-effect zone is asymmetrical and is determined by variables such as topography, vegetation, traffic volume, animal locomotion, wind, or groundwater movement. Effects that extend farther from the road surface normally define the margin of the road-effect zone (e.g. human-access disturbances, spread of exotic species, blocking of wildlife movement routes). Road-effects typically transmit farther into grassland ecosystems than forests (Foreman 2003). The presence of a road-effect zone in the action area is already likely adversely affecting San Joaquin kit fox as a result of the existing highway. As the footprint of the highway is increased, the road-effect zone, and associated adverse effects, would also increase.

Determining exactly how, and when, a road will affect a wildlife population is difficult to determine. Variables such as loss of habitat, decreased landscape connectivity, disease, predation, and vehicle strikes may all contribute to variations in wildlife populations over time. For example, the effect of a road as a barrier to dispersal would likely take several generations to be observed and would also depend on the time interval between local extinctions in a species' regional population (Forman 2003). Consequently, at this time we are unable to determine the extent to which the proposed project may affect San Joaquin kit fox dispersal. However, we assume that an increase in traffic volume and average vehicle speed associated with a four lane expressway would make it increasingly more difficult for San Joaquin kit fox to disperse across SR 46.

Additionally, potential increased residential and commercial, and industrial development that is likely to occur along the highway over time would likely exacerbate the barrier effect of the road corridor. A reduction in dispersal is likely to negatively affect San Joaquin kit fox population in a variety of ways as described above. Development associated with road construction is particularly common where roads intersect, such as the intersection of Interstate 5 and Highway 99 (Cypher 2000). Habitat loss, fragmentation, and the reduction or elimination of movement corridors are likely the most severe effects to San Joaquin kit foxes (Cypher 2000). If San Joaquin kit fox populations in the Southern Salinas Valley, or other areas near the action area increase, or more information regarding the structure of the metapopulation becomes available, effects of the project may be greater than as analyzed in this biological opinion.

Caltrans and FHWA have included multiple measures intended to minimize the adverse effects of the proposed project on San Joaquin kit fox, and to facilitate movement of San Joaquin kit fox across the highway. Caltrans has proposed to construct large (61-foot wide) medians, to eliminate the need for solid median barriers as a traffic safety feature. Wide grassy medians between north and southbound traffic lanes may provide a safe opportunity for animals to rest while trying to cross traffic lanes. The elimination of solid median barriers should also increase the potential for San Joaquin kit fox to successfully cross SR 46 within

the action area as these structures can be formidable obstacles to movement for most wildlife (Foreman 2003).

Caltrans has also incorporated the installation of dry culverts into their project description, for the specific purpose of facilitating movement of San Joaquin kit fox across under the highway. Caltrans recruited expert advice (Cypher 2000) regarding the frequency and size of culverts that would likely maximize use by San Joaquin kit fox.
Caltrans also funded a field study, initiated in 2005, to evaluate the use of existing highway crossing structures by San Joaquin kit foxes and desert kit foxes on 4 lane highways in natural land environments. Caltrans will incorporate the results of the study into the proposed project design.

In addition to wildlife culverts, Caltrans has also proposed to increase the size and number of bridges in the Y section, to facilitate movement of San Joaquin kit fox and other wildlife across the highway. These new bridges would be 394 feet long and 130 feet long, and elevated to a heights ranging from 13 and 19 feet above the valley floor, providing San Joaquin kit foxes with a clear line of sight under the highway and improving the crossing potential for San Joaquin kit foxes in this area.

Caltrans proposes to provide approximately 1200 acres of conservation lands off-site at a CDFG-approved conservation bank within the corridor connecting the southern Salinas Valley to the Carrizo Plain San Joaquin kit fox core population. With this minimization measure, Caltrans would attempt to enhance movement corridors, link natural lands, and protect habitat for San Joaquin kit foxes.

California Red-legged Frog

Construction would not affect any of the known California red-legged frog breeding sites in the action area. However, surface water quality of aquatic habitat, adjacent to the highway, may be temporarily degraded as a result of project construction. Aquatic habitat may also be adversely affected by highway runoff during winter rains. However, the new highway alignment would be buffered from perennial aquatic habitat by distances ranging from 131 to 164 feet, minimizing the potential for highway runoff to reach the aquatic habitat. Project-related releases of sediments from areas cleared of vegetation during construction or of contaminants, such as fuels and oils, from construction equipment into the riparian area or water may negatively affect the quality of habitat for California red-legged frogs by killing native plants used for resting or foraging and by decreasing availability of prey. Released contaminants may also adversely affect or kill California red-legged frogs. Such effects would be reduced or eliminated by the use of erosion control devices, and measures taken to control post-construction runoff and pollutant discharge.

If Caltrans limits construction to the dry season, it does not anticipate direct adverse effects to California red-legged frogs during construction because they do not expect individuals to move away from permanent water sources during the dry season (May 1 through October 31).

However, because Caltrans does not expect to complete the Y section for approximately 8-10 years, and they have not finalized the work schedule to limit the proposed construction to the dry season, construction may occur during winter rainy seasons when California red-legged frogs are likely to be migrating or dispersing through the action area.

Bulger et al. (2003) found that less than 25 percent of an adult California red-legged frog population in Santa Cruz County, California, migrated away from breeding sites during the winter. These authors also noted that migration is spread out over time and does not occur as a synchronous en mass event, and that the density of California red-legged frogs migrating through uplands is usually very low (Bulger et al. 2003).

The dispersal of metamorph and juvenile California red-legged frogs has not been well documented. However, California red-legged frogs are believed to disperse widely the first 6 to 8 months after metamorphosis and through the winter. Once they reach the juvenile stage (approximately 1 year old) they will remain in aquatic habitat (either breeding or summer) until breeding age (approximately 2 to 3 years old). If they did not disperse to suitable breeding habitat as metamorphs, California red-legged frogs will migrate to suitable breeding habitat when they reach breeding age. Some adults may return to summer habitat after breeding (N. Scott pers. comm. 2005).

Although there are large numbers of California red-legged frogs in the action area, the highest known densities are found in ponds approximately 1.2 mile southeast of the proposed SR 41/46 interchange. We anticipate few adult California red-legged frogs will migrate this far from permanent water sources in the arid climate of northeast San Luis Obispo County. Given the number of California red-legged frogs present in the action area, and the distances of the aquatic habitat from the construction area, we anticipate that fewer than 25 adults may migrate from the breeding ponds during the winter rainy months. However, hundreds of metamorphs may disperse through the action area. Migrating or dispersing California red-legged frogs may be struck and killed by vehicle traffic and construction traffic.

California red-legged frogs could be injured or killed if they are improperly handled or contained during capture and relocation efforts if they are found in construction areas. Caltrans would reduce the chances of incidental injury by using only Service-approved biologists to capture and move California red-legged frogs.

Chytrid fungus (*Batrachochytrium dendrobatidis*) could be spread if infected California red-legged frogs are relocated and introduced into areas with healthy California red-legged frogs or vice-versa. Chytrid fungus is a water-borne fungus that can be spread through direct contact between aquatic animals and by a spore that can move short distances through the water. The fungus only attacks the parts of a frog's skin that have keratin (thickened skin), such as the mouthparts of tadpoles and the tougher parts of adults' skin, such as the toes. The fungus can decimate amphibian populations, causing fungal dermatitis, which usually results in death in 1 to 2 weeks. Infected animals may spread the fungal spores to other ponds and streams before they die. Once a pond has become infected with chytrid fungus, the fungus

stays in the water for an undetermined amount of time. It is possible that during the relocation of California red-legged frogs proposed by the applicant that infected individuals or equipment could introduce Chytrid fungus into areas where it did not previously occur. If this occurs, many California red-legged frogs could be affected.

California red-legged frogs have strong homing tendencies (Rathbun and Schneider 2001). As a result, relocated individuals may be at risk of injury or death through predation or dehydration during an attempt to return to a work area from which they had been moved. This risk may increase with the distance of the relocation site from the work area. However, if individuals are moved far enough they are more likely to remain at the relocation site. (Rathbun and Schneider 2001).

California red-legged frogs may be killed or injured from inadvertent trampling by workers from foot traffic and operation of construction equipment during the construction of the highway improvement project. Such effects to California red-legged frogs would be reduced by Caltrans' proposed measures to hold pre-construction meetings with the contractor and crew to brief them on the potential presence of California red-legged frogs in the project area, educate onsite workers in the identification and habitat requirements of California red-legged frogs and ramifications of take of listed species, and discuss minimization measures.

Predation of California red-legged frogs may increase in the project vicinity with the attraction of predators, such as raccoons (*Procyon lotor*), pet and feral dogs (*Canis familiaris*) and cats (*Felis domesticus*), to the work area by food-related trash. Such effects would be reduced by Caltrans' protective measures to manage trash properly and ban pets from the construction area. Additionally, increased exposure to predation and desiccation could occur with the disruption of normal foraging and sheltering behavior by construction noise and activity. Such effects would be minimized by the following measures: pre-construction surveys using Service approved biologists within two days prior to initiation of project construction, properly containing and removing trash; conducting awareness training sessions for workers; and relocating California red-legged frogs, if any are found in harm's way, prior to the start of construction activities.

California tiger salamander

California tiger salamanders dispersing from ponds within the action area are subject to mortality or injury from vehicle strikes and construction activities associated with the proposed project, particularly if work is conducted during the wet season (November to May). Adult migrations to and from breeding ponds occur during the wet season, with the greatest activity from December to February. Because we lack any population data from the ponds within the action area, we are unable to quantify the amount of California tiger salamanders that may disperse into the construction area or attempt to cross the highway following construction. However, based on Trenham's (2001) method for calculating dispersal probabilities, Caltrans (2005) estimated that of the four ponds within the action area, 3.23 percent of one potential breeding population, and less than one percent of each three

additional potential breeding populations are likely to disperse far enough to be adversely affected by construction.

California tiger salamanders may also be crushed if they are present in small mammal burrows within the construction footprint of the proposed project. All small mammal burrows, in the construction footprint of the new traffic lanes, would be destroyed during grading and ground compaction that is part of the road building process. California tiger salamanders may also become trapped in construction trenches where they are subject to predation and desiccation.

The new bridges proposed by Caltrans would be built directly between the two nearest known breeding populations as well as between the two nearest potential breeding pools. The bridges would span a 394-foot wide corridor in the area that is most likely to be used by California tiger salamanders. An additional 131-foot long bridge may also facilitate movement of California tiger salamanders under the highway. The creation of these large under-crossings would enhance a likely movement corridor and may facilitate movement of California tiger salamanders under the highway, and result in fewer vehicle strikes.

California tiger salamanders could be injured or killed if they are improperly handled or contained during capture and relocation efforts if they are found in construction areas. Caltrans would reduce the chances of incidental injury by using only Service-approved biologists to capture and move California tiger salamanders. Handling California tiger salamanders or introducing equipment into their breeding ponds can also result in the spread of chytrid fungus, a pathogen linked to declines in amphibians. The first case of chytrid fungus in California tiger salamanders was reported in 2005 (Padgett-Flohr and Longcore 2005).

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Caltrans has recognized the completion of the SR 46 Improvement Project may result in future increased road mortality of San Joaquin kit fox. Consequently, Caltrans has proposed to work cooperatively with the Service to attempt to remedy any increased future mortality of San Joaquin kit foxes on SR 46 following completion of the proposed project (Luchetta, pers. comm. 2005).

In April 2004, the San Luis Obispo County Board of Supervisors voted to update the Community Plan for Shandon (Community Plan). Shandon is a small, primarily agricultural community, located approximately 20 miles east of Paso Robles and adjacent to SR 46. It has a population of approximately 1000 residents within a 380-acre Urban Reserve line.

The Community Plan will include but not be limited to future population, housing development, land use, traffic, infrastructure, and economic development alternatives (County 2005). The study area will include the area within the Urban Reserve line and approximately 1620 additional acres surrounding the community. Expansion of Shandon beyond the existing Urban Reserve line will likely encroach into San Joaquin kit fox habitat, and may adversely affect the population through increased loss of habitat and a reduction or loss of movement corridors. The area between Shandon and the Cholame Valley has been identified as some of the best remaining San Joaquin kit fox habitat in the action area and a likely movement corridor (McElwee 2005). Open space areas, incorporated into the Community Plan Update, which provide connectivity to the north and south of SR 46, would likely benefit the San Joaquin kit fox.

CONCLUSION

After reviewing the current status of the San Joaquin kit fox, California red-legged frog, and California tiger salamander, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the State Route 46 Improvement Project for PM 32.2 to PM 56.3, is not likely to jeopardize the continued existence of these species for the following reasons:

San Joaquin kit fox

1. Caltrans and FHWA have proposed to install numerous wildlife under-crossings along the entire 24 mile length of the project, to facilitate movement of San Joaquin kit foxes across SR 46.

2. Within the Cholame Valley, Caltrans has proposed to use large bridges to facilitate connectivity and potentially improve crossing opportunities for San Joaquin kit foxes in an important movement corridor.

3. Caltrans has proposed to use the best and most updated science available, to design and implement wildlife under-crossings for San Joaquin kit fox.

4. Caltrans will conserve approximately 1200 acres of San Joaquin kit fox habitat determined by the Service, CDFG, and species experts to be important to dispersal.

5. Caltrans has proposed to work with the Service to attempt to remedy any increased future road mortality that occurs following completion of the proposed project.

6. Because the proposed project would be completed in four phases, and the final phase (the Y section) will not be completed until approximately 2013, we will have an opportunity to monitor the effectiveness of the proposed minimization measures, and to determine if additional protective measures are necessary.

7. In addition to wildlife under-crossings, FHWA and Caltrans will implement numerous other measures to minimize adverse effects to San Joaquin kit fox during construction.

California red-legged frog

8. Known breeding locations in the action area would not be affected by the proposed project.

9. Caltrans would minimize adverse effects to aquatic habitat for the California red-legged frog through implementation of erosion control methods and other best management practices.

10. Elevating the highway in the Y section will likely reduce any existing road mortality in this area, and may result in an improved crossing situation when compared to the existing two lane highway.

California tiger salamander

11. No California tiger salamander breeding habitat would be affected by the project.

12. Elevating the highway in the Y section will likely reduce any existing road mortality in this area and may increase the potential for dispersal north and south of SR 46.

13. Only a small amount of upland habitat would be adversely affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and FHWA must make them binding conditions of any grant or permit issued to Caltrans, as appropriate, for the exemption in

section 7(o)(2) to apply. FHWA has a continuing duty to regulate the activity covered by this incidental take statement. If FHWA fails to require Caltrans to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, FHWA must report the progress of the action and its impact on the California red-legged frog, California tiger salamander, and the San Joaquin kit fox to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

The amount of incidental take of San Joaquin kit foxes that may occur during construction is difficult to quantify because there is a lack of information on occurrences of and movement patterns of San Joaquin kit foxes in the action area. Estimating the number of individuals that are subject to harassment is not possible, given the unknown number of San Joaquin kit foxes that may occur in the action area at any given time. However, based on the information in the Status of the Species and Environmental Baseline sections of this biological opinion, we expect few San Joaquin kit fox to be subject to harassment as a result of direct project related effects.

It will be difficult to find injured or dead California red-legged frogs and California tiger salmanders due to their small size and because the large earth moving equipment that would be used during the project would likely destroy any evidence of dead or injured individuals. For these reasons and because there are a large number of California red-legged frogs, in the action area, we are unable to determine the exact number of California red-legged frogs that will be incidentally taken in the form of injury or mortality. However, based upon the information described in this biological opinion, we anticipate that less than 25 percent of the adult California red-legged frogs in the action area would be subject to injury or mortality. An unknown number of metamorph and juvenile California red-legged frogs could be killed or injured by project activities. Although we cannot predict how many individuals may be in the construction footprint at a given time, we anticipate that all California red-legged frogs found in harm's way will be incidentally taken in the form of harassment during capture and relocation efforts.

We are also unable to determine the number of California tiger salamanders that may be incidentally taken because we have no occurrence data from the action area. Caltrans and the Service assume California tiger salamanders are present in the action area based on the presence of suitable breeding habitat and existing land use practices. However, based on Trenham's (2001) method for calculating dispersal probabilities, we estimate that 3.23 percent of one potential breeding population, and less than one percent of each three additional potential breeding populations, in the action area, are likely to disperse far enough to be adversely affected by project activities. Consequently, these calculations suggest that the number of California tiger salamanders that may be incidentally taken are extremely low.

This biological opinion does not exempt any activity from the prohibitions against take contained in section 9 of the Act that is not incidental to the action as described in this biological opinion. Take that occurs outside of demarcated work areas or from any activity

not described in this biological opinion is not exempted from the prohibitions against take described in section 9 of the Act.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of California red-legged frogs, California tiger salamanders and San Joaquin kit foxes:

1. Caltrans and FHWA must reduce the potential for injury or mortality of San Joaquin kit foxes, California red-legged frogs, and California tiger salamanders as a result of construction activities and vehicle traffic.

2. Only personnel authorized under this biological opinion may implement those avoidance and minimization measures, included in this biological opinion, which require biological expertise and experience with San Joaquin kit fox, California red-legged frogs, and California tiger salamanders.

3. Biologists who handle California red-legged frogs and California tiger salamanders must ensure that their activities do not transmit diseases

The Service's evaluation of the effects of the proposed action includes consideration of the minimization measures proposed by Caltrans and included in the description of the proposed action section of this biological opinion. Any subsequent changes to these measures may constitute a modification of the proposed action and may warrant re-initiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to supplement the protective measures that were proposed by Caltrans as part of the proposed action.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, FHWA must ensure that Caltrans complies with the following terms and conditions, which implement the reasonable and prudent measures described above and outlined in the reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The following terms and conditions implement reasonable and prudent measure 1:

   a. If a San Joaquin kit fox is found injured or killed as a result of the activities described in this biological opinion, FHWA or Caltrans must contact our office immediately so we can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by Caltrans and the

terms and conditions of this biological opinion have been and continue to be implemented.

b. Prior to the completion of the first phase of the project, Caltrans must provide our office with a draft plan to monitor the wildlife undercrossings associated with the proposed project. Following our review, a final monitoring plan must be completed within one year.

c. Caltrans must implement the final monitoring plan during the project, to determine if their protective measures are effective in reducing San Joaquin kit fox mortality.

d. If more than 10 adult California red-legged frogs or 25 metamorphs are found injured or killed due to project activities in any calendar year, Caltrans must contact our office immediately so we can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by FHWA and Caltrans and the terms and conditions of this biological opinion have been and continue to be implemented.

e. FHWA or Caltrans must immediately report any sighting of live California tiger salamanders within the action area to the VFWO.

f. Any live California tiger salamanders found within the construction footprint of the proposed project must be relocated out of harm's way.

g. If a California tiger salamander is found injured or killed, Caltrans must contact our office immediately (or the following day if found at night) so we can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by FHWA and Caltrans and the terms and conditions of this biological opinion have been and continue to be implemented.

h. Caltrans must enforce a maximum speed limit of 20 miles per hour on unpaved roads within the action area of this project.

i. Caltrans must ensure that project related vehicles do not leak anti-freeze or other hazardous materials.

j. Caltrans must not place fences that act as barriers to movement of California red-legged frogs, within or along the boundary of the project site.

k. A qualified biologist, approved by the service, must be on-site: 1) when construction occurs on rainy nights; 2) when project activities would occur within

100 feet of aquatic California red-legged frog habitat; and 3) for 72 hours following the sighting of a San Joaquin kit fox in the action area. The biologist must be given the authority to stop any work that may result in the take of San Joaquin kit foxes, California red-legged frogs, or California tiger salamanders. If the biologist(s) exercises this authority, the Service must be notified by telephone and electronic mail within one (1) working day.

2. The following terms and conditions implement reasonable and prudent measure 2:

   a. At least 30 days prior to the onset of project activities, the project proponent must submit the name(s) and credentials of the biologist(s) who would conduct activities for the San Joaquin kit fox, California red-legged frog, and California tiger salamander, as specified in this biological opinion. Project activities must not begin until Caltrans has received our written approval of the biologist(s) they intend to use.

   b. Before initiating project activities, the Service-approved biologist must identify appropriate areas to relocate California red-legged frogs and California tiger salamanders found in the construction area. These areas must be near the potential capture site or another site approved by the Service, must support suitable vegetation (as appropriate for the species) and be free of exotic predatory species (e.g., bullfrogs).

   c. If captured, California red-legged frogs and California tiger salamanders must be placed in moist cloth bags or plastic buckets and kept shaded and moist until they are released at the new site. The relocation process must be implemented as quickly as possible.

3. The following term and condition implements reasonable and prudent measure 3:

   To avoid transferring disease or pathogens between aquatic habitats during the course of surveys and handling of California red-legged frogs and California tiger salamanders, the Service-approved biologist shall follow the Declining Amphibian Population Task Force's Code of Practice. A copy of this Code of Practice is enclosed. A bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water) may be substituted for the ethanol solution. Care must be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.

REPORTING REQUIREMENTS

FHWA or Caltrans must provide an annual written report to the Service by January 31, each year of the project. The report must discuss activities for the previous calendar year and include a table summarizing California red-legged frog, California tiger salamander, and San Joaquin kit fox sightings and any take that occurs. The report must document the number of

California red-legged frogs and California tiger salamanders, if any, relocated from the project area, the date and time of capture, specific location of capture, approximate size and age of individuals, and a description of relocation sites. The report must also include the number of California red-legged frogs and California tiger salamanders killed or injured, if any, and the date(s) such incidental take occurred. The report must document any observations of San Joaquin kit fox in the action area, the number of any San Joaquin kit foxes harassed, injured or killed, and the date(s) such incidental take occurred. The report must contain a discussion of the activities conducted, results of the wildlife undercrossing monitoring, any problems encountered in implementing terms and conditions, and any recommendations for improving the protective measures. This document will assist the Service and FHWA in evaluating future measures for the conservation of the California red-legged frog, California tiger salamander, and the San Joaquin kit fox.

DISPOSITION OF INJURED OR DEAD SPECIMENS

Upon locating a dead or injured California red-legged frog, California tiger salamander, or San Joaquin kit fox, you must notify the Service's Division of Law Enforcement in writing (370 Amapola Avenue, Suite 114, Torrance California 90501) and the Ventura Fish and Wildlife Office by telephone (805/644-1766) and in writing (2493 Portola Road, Suite B, Ventura, California 93003). The report must include the date, time, and location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

Care must be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Should any injured California red-legged frog, California tiger salamander, or San Joaquin kit fox survive, the Service must be contacted regarding their final disposition. The remains of California red-legged frogs and California tiger salamanders must be placed with the California Academy of Sciences Herpetology Department (contact: Jens Vindum, Collections Manager, California Academy of Sciences Herpetology Department, Golden Gate Park, San Francisco, California 94118, telephone 415/750-7037); or Santa Barbara Natural History Museum (contact: Paul Collins, Santa Barbara Natural History Museum, Vertebrate Zoology Department, 2559 Puesta Del Sol, Santa Barbara, California 93105, telephone 805/682-4711 ext. 321).

Any San Joaquin kit fox found dead shall be provided to CDFG unless agreements have been made with CDFG to the contrary. Notification must be made to Bob Stafford, wildlife biologist, at (805) 528-8670.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. We recommend the following:

1. FHWA and Caltrans should fund and participate in a study of San Joaquin kit movements between the Salinas River Valley, Carrizo plain, and Antelope Plain-Blackwell's Corner.

2. The FHWA and Caltrans should involve the Service in long-range planning so its projects are designed and implemented in a manner that meets the conservation needs of the California red-legged frog, California tiger salamander, and San Joaquin kit fox.

3. The FHWA and Caltrans should ensure that material hauled to project sites for fill is free of weedy exotic species.

4. Caltrans should conduct surveys for California tiger salamanders in the action area of this biological opinion.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the proposed construction of the State Route 46 Improvement Project, PM 32.2 to 56.3. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this matter, please contact Steve Kirkland of my staff at (805) 644-1766, extension 267.

Sincerely,

Steve Henry
Assistant Field Supervisor
San Luis Obispo/Northern Santa Barbara

Enclosure

REFERENCES CITED

Anderson, P. R. 1968. The reproductive and developmental history of the California tiger salamander. Masters thesis, Department of Biology, Fresno State College, Fresno, California. 82pp.

Berry, W.H., J.H. Scrivner, T.P. O'Farrell, C.E. Harris, T.T. Kato, and P.M. McCue. 1987*a*. Sources and rates of mortality of the San Joaquin kit fox, Naval Petroleum Reserve #1, Kern County, CA, 1980-1986. Rep. No. EGG 10282-2154, EG&G Energy Measurements, Goleta, CA, 34 pp.

Berry, W.H., T.P. O'Farrell, T.T. Kato, and P.M. McCue. 1987*b*. Characteristics of dens used by radiocollared San Joaquin kit fox, *Vulpes macrotis mutica*, Naval Petroleum Reserve #1, Kern County, California. U.S. Dept. Energy Topical Rep. No. EGG 10282-2177, EG&G Energy Measurements, Goleta, CA, 32 pp.

Bishop, S. C. 1943. Handbook of salamanders. Comstock Publishing Co., Inc. Ithaca, New York. pp. 119-123.

Bulger, J., N.J. Scott, and R.B. Seymour. 2003. Terrestrial activity and conservation of adult California red-legged frogs (*Rana aurora draytonii*) in coastal forests and grasslands. Biological Conservation 110: 85-95.

California Department of Transportation. 2003a. Highway 46 Corridor Improvement Project Natural Environment Study in Northern San Luis Obispo County, East of Paso Robles, from Airport Road through the Cholame Valley 05-SLO-46-41.8/90.6 (Post Miles 32.2/56.3. San Luis Obispo, California.

_____. 2003b. Route 46 Corridor Improvement Project Section 404(b)(10 Analysis for determination of the Least Environmentally Damaging Practicable Alternative. San Luis Obispo, California.

_____. 2003c. Biological assessment for San Luis Obispo County Route 46 Kilopost 88.6 to 98.0 (Post miles 55.1 to 60.9). Fresno, California.

_____. 2005. Addendum to the Highway 46 Corridor Improvement Project Natural Environment Study in Northern San Luis Obispo County, East of Paso Robles, from Airport Road through the Cholame Valley 05-SLO-46-41.8/90.6 (Post Miles 32.2/56.3. San Luis Obispo, California.

Clevenger, A.P. and N. Waltho. 1999. Dry culvert use and design considerations for small- and medium-sized mammal movement across a major transportation corridor. Pages 263-178 *in* G. L. Evink, P. Garrett, and D. Zeigler (eds.). Proceedings of the third international conference on wildlife ecology and transportation. FL-ER-73-99, Florida Department of Transportation. Tallahassee, Florida.

County of San Luis Obispo, Department of Planning and Building. 2005. Request for Proposal PS# 883. Constraints Analysis and Market Study for the Shandon Community Plan Update. San Luis Obispo, California.

Cypher, B. L. 2000. Effects of roads on San Joaquin kit foxes: a review and synthesis of existing data. Endangered Species Recovery Program, California State University, Fresno, California.

Egoscue, H.J. 1956. Preliminary studies of the kit fox in Utah. J. Mammal. 37:351-357.

_____. 1962. Ecology and life history of the kit fox in Tooele County, Utah. Ecology 43:481-497.

_____. 1975. Population dynamics of the kit fox in western Utah. Bull. Southern California Acad. Sci. 74:122-127.

Forman, R. T. and L.E. Alexander. 1998. Roads and their major ecological effects. Annual review of Ecology and Systematics 29:207-231.

Forman, R.T. and R.D. Deblinger. 1998. The ecological road-effect zone for transportation planning, and a Massachusetts highway example. In *Proceedings of the International Conference on Wildlife ecology and transportation.* Florida Department of Transportation publication FL-ER-69-98. Talahassee, Florida.

Forman, R. T. 2003. Road Ecology. Island Press. Washington D.C.

Frankham, R., and K. Ralls. 1998. Inbreeding leads to extinction. Nature 241:441-442.

Frost, D. R., editor. 1985. Amphibian species of the world: a taxonomic and geographical reference. Allen Press, Inc. and Association of Systematics Collection, Lawrence, Kansas. pp. 553-558.

Gamradt, S. C., and L. B. Kats. 1996. Effect of introduced crayfish and mosquitofish on California newts. Conservation Biology 10(4): 1155-1162.

Gehlbach, F. R. 1967. *Ambystoma tigrinum*. Catalogue of American Amphibians and Reptiles 1:52.1-52.4.

Graf, M. 1993. Evaluation of mosquito abatement district's use of mosquitofish as biological mosquito control: case study - Sindicich Lagoon in Briones Regional Park. Unpublished manuscript. 22 pp.

Grinnell, J., and C. L. Camp. 1917. A distributional list of the amphibians and reptiles of California. University of California Publications in Zoology 17(10): 131, 138.

Grinnell, J., J.S. Dixon, and J.M. Linsdale. 1937. Fur-bearing mammals of California. Vol. 2. Univ. California Press, Berkeley.

Hall, E.R. 1946. Mammals of Nevada. Univ. California Press, Berkeley, 710 pp.

Hall, F.A. 1983. Status of the San Joaquin kit fox, *Vulpes macrotis mutica*, at the Bethany wind turbine generating site, Alameda County, California. Unpubl. Rep., California Dept. Fish and Game, Sacramento, 34 pp.

Irschick, D. J., and H. B. Shaffer. 1997. The polytypic species revisited: morphological differentiation among tiger salamanders (*Ambystoma tigrinum*) (Amphibia: Caudata). Herpetologica 53(1): 30-49.

Jennings, M.R., M.P. Hayes, and D.C. Holland. 1992. A petition to the U.S. Fish and Wildlife Service to place the California red-legged frog (Rana aurora draytonii) and the western pond turtle (Clemmys marmorata) on the list of endangered and threatened wildlife and plants.

Jennings, M. R., and M. P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final report to California Dept. of Fish and Game. Pp. 12-16.

Jensen, C.C. 1972. San Joaquin kit fox distribution. U.S. Fish and Wildlife Service, Sacramento, CA, Unpubl. Rep., 18 pp.

Jones, T. R. 1993. Intraspecific genetic variation and cladogenesis in California tiger salamanders *Ambystoma tigrinum californiense* Gray). Unpublished manuscript. 49 pp.

Kit fox planning and action team. 2001. Draft conservation strategy for the San Joaquin kit fox in the Tracey triangle area, a companion document to the recovery plan for upland species of the San Joaquin Valley, California. Unpublished report.

Koopman, M.E., B.L. Cypher, and J.H. Scrivner. 2000. Dispersal patterns of San Joaquin kit foxes (Vulpes macrotis mutica). Journal of Mammalogy 81(1):213-222.

Knapp, D.K. 1978. Effects of agricultural development in Kern County, California, on the San Joaquin kit fox in 1977. California Department of Fish and Game. Non-Game Wildlife Investigations Final Report Project E-1-1, Nov V-1.21.

Kraus, F. 1988. An empirical evaluation of the use of the ontogeny polarization in phylogenetic inference. Systematic Zoology 37:106-141.

Lande, R. 1988. Genetics and Demography in Biological Conservation. Science 241:1455-1460.

Laughrin, L. 1970. San Joaquin kit fox: its distribution and abundance. California Dept. Fish and Game, Sacramento, Wildl. Manage. Branch, Admin. Rep. No. 70-2, 20 pp.

Loredo, I. And D. VanVuren. 1996. Reproductive ecology of a population of the California tiger salamander. Copeia 1996: 895-901.

Loredo, I., D. Van Vuren and M. L. Morrison. 1996. Habitat use and migration behavior of the California tiger salamander. Journal of Herpetology 30(2): 282-285.

McCue, P.M., T. Kato, M.L. Sauls, and T.P. O'Farrell. 1981. Inventory of San Joaquin kit fox on land proposed as phase II, Kesterson Reservoir, Merced County, California. Rep. No. EGG 1183-2426, EG&G Energy Measurements, Goleta, CA, 16 pp.

McElwee, L.R. 2005. A modeling approach to wildlife corridor creation: an assessment using ARCGIS and the San Joaquin kit fox in San Luis Obispo County, California. Master thesis, California Polytechnic State University. San Luis Obispo, California.

Morey, S. R. and D. A. Guinn. 1992. Activity patterns, food habits, and changing abundance in a community of vernal pool amphibians. pp. 149-157 in: Endangered and Sensitive Species of the San Joaquin Valley, California. D.F. Williams, S. Byrne, T.A. Rado (Editors). California Energy Commission, Sacramento, CA. 1992.

Morrell, S.H. 1972. Life History of the San Joaquin kit fox. California Fish and Game 58:162-17.

_____. 1975. San Joaquin kit fox distribution and abundance in 1975. California Dept. Fish and Game, Sacramento, Wildl. Manage. Branch, Admin. Rep. No. 75-3, 28 pp.

O'Farrell, T.P., and L. Gilbertson. 1979. Ecology of the desert kit fox, *Vulpes macrotis arsipus*, in the Mojave Desert of Southern California. Bull. South. California Acad. Sci. 85:1-15.

O'Farrell, T.P., T.T. Kato, P.M. McCue, and M.L. Sauls. 1980. Inventory of San Joaquin kit fox on USBLM lands in southern and southwestern San Joaquin Valley--final report. Rep. No. EGG 1183-2400, EG&G Energy Measurements, Goleta, CA, 74 pp. + Appendices.

Orloff, S.G., F. Hall, and L. Spiegel. 1986. Distribution and habitat requirements of the San Joaquin kit fox in the northern extreme of their range. Trans. West. Sect. Wildl. Soc. 22:60-70.

Padgett-Flohr, G.E. and J.E. Longcore. Amybystoma Californiense (California tiger salamander) Fungal Infection. Natural History Notes. Herpetological Review 36(1).

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press.

Ralls, K., and P.J. White. 1995. Predation on endangered San Joaquin kit foxes by larger canids. J. Mammal. 276:723-729.

Rathbun, G.B., and J. Schneider. 2001. Translocation of California red-legged frogs (*Rana aurora draytonii*). Wildlife Society Bulletin 29(4):1300-1403.

Saccheri, I., M. Kuussaari, M. Kankare, P. Vikman, W. Fortelius, and I. Hanski. 1998. Inbreeding and extinction in a butterfly population. Nature 392:491-494.

Shaffer, H. B. and S. E. Stanley. 1991. Final report to California Department of Fish and Game; California tiger salamander surveys, 1991. Unpublished report. 11 pp. plus figure, tables and appendix.

Shaffer, H. B., R. N. Fisher, and S. E. Stanley. 1993. Status report: the California tiger salamander (*Ambystoma californiense*). Final report for the California Department of Fish and Game. 36 pp. plus figures and tables.

Shaffer, H. B. and M. L. McKnight. 1996. The polytypic species revisited: genetic differentiation and molecular phylogenetics of the tiger salamander *Ambystoma tigrinum* (Amphibia: Caudata) complex. Evolution, 50(1): 417-433.

Shaffer, H.B.,G. B. Pauly, J. C. Oliver, and P.C. Trenham. 2004. The molecular phylogenetics of endangerment: cryptic variation and historical phylogeography of the California tiger salamander, Ambystoma californiense. Molecular Ecology, 13: 3033-3049.

Smallwood, S. 1999. Field Survey Form for Vulpes macrotis mutica. Occurrence No. 194. California Natural Diversity Database.

Spiegel, L.K., and M. Bradbury. 1992. Home range characteristics of the San Joaquin kit fox in western Kern County, California. Trans. West. Sect. Wildl. Soc. 28:83-92.

_____. 1996. Studies of the San Joaquin kit fox in undeveloped and oil-developed areas. California Energy Commission Pub. No. P700-96-003. California Energy Commission Publication Unit, Sacramento, California.

Stafford, R. 2001. Field Survey Form for Vulpes macrotis mutica. Occurrence No. 53. California Natural Diversity Database.

Standley, W.G. 1989. Kit fox researcher. Letter to Tom O'Farrell, kit fox researcher, regarding documentation of San Joaquin kit fox movement from Camp Roberts to the Carrizo Plain.

Standley, W.G., W.H. Berry, T.P. O'Farrell, and T.T. Kato. 1992. Mortality of San Joaquin kit fox (Vulpes velox macrotis) at Camp Roberts Army National Guard training site, California. United States Department of Energy Topical Report Number EGG 10617-2157, EG and G/EM Santa Barbara Operations, National Technical Information Service, Springfield Virginia.

Stebbins, R.C. 1985. A field guide to western reptiles and amphibians. Houghton Mifflin Company, Boston, Massachusetts.

Stebbins, R. C. 1962. Amphibians of the western United States. Ambystomids. Pp. 29-49 and plates.

Storer, T.I. 1925. A synopsis of the amphibian of California. University of California publications in zoology 27:1-342.

Trenham P. C., H. B. Shaffer, W. D. Koening and M. R. Stromberg, 2000. Life history and demorgraphic variation in the California tiger salamander. Copeia 2000(2):365-377.

Trenham, P.C., W.D. Koenig, and H.B. Shaffer. 2001. Spatially autocorrelated demography and interpond dispersal in the California tiger salamander, *Ambystoma californiense*. *Ecology*, 82: 3519-3530.

Trenham, P.C. 2001. Terrestrial Habitat Use by Adult California tiger salamanders. Journal of Herpetology 35: 343-346.

Trenham, P.C., and H.B. Shaffer. 2005. Amphibian upland habitat use and its consequences for population viability. Ecological Applications 15:1158–1168.

Trombulak, S.C., and C.A. Frissell. 2000. The ecological effects of roads on terrestrial and aquatic communities: a review. Conservation Biology 14:18-30.

Twitty, V. C. 1941. Data on the life history of *Ambystoma tigrinum californiense* Gray. Copeia 1941(1): 1-4.

U.S. Fish and Wildlife Service. 1983. San Joaquin kit fox recovery plan. U.S. Fish and Wildlife Service, Portland, OR, 84 pp.

_____. 1997. Standard recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance. Sacramento, California.

_____. 1998. Final Recovery Plan for upland species of the San Joaquin Valley, California. Portland, Oregon.

_____. 2002. Recovery Plan for the California red-legged frog (Rana aurora draytonii). Portland, Oregon. viii + 173 pp.

_____. 2003. Biological opinion for the proposed State Route 46 4-lane widening project from the San Luis Obispo County/Kern County line to post mile 37.5 in Kern County, California. Sacramento, California.

_____. 2005. Biological opinion for the Highway 46 improvement project, postmile 55.1-60.9, San Luis Obispo County, California (document # P43727) (1-8-03-F-17).

White, P.J., and K. Ralls. 1993. Reproduction and spacing patterns of kit foxes relative to changing prey availability. Journal of Wildlife Management 57:861-867.

White, P.J., and R.A. Garrott. 1997. Factors regulating kit fox populations. Canadian Journal of Zoology 75:1982-1988.

White, P.J., and R.A. Garrott. 1999. Population dynamics of kit foxes. Can. J. Zool. 77:486-493.

White, P.J., W.H. Berry, J.J. Eliason, and M.T. Hanson. 2000. Catastrophic decrease in an isolated population of kit foxes. The Southwest Naturalist 45(2):204-211.

Zoellick, B.W., T.P. O'Farrell, P.M. McCue, C.E. Harris, and T.T. Kato. 1987*a*. Reproduction of the San Joaquin kit fox on Naval Petroleum Reserve #1, Elk Hills, California, 1980-1985. Rep. No. EGG 10282-2144, EG&G Energy Measurements, Goleta, CA, 42 pp.

Zoellick, B.W., T.P. O'Farrell, and T.T. Kato. 1987*b*. Movements and home range of San Joaquin kit foxes on the Naval Petroleum Reserves, Kern County, California. Rep. No. EGG 10282-2184, EG&G Energy Measurements, Goleta, CA, 38 pp.

IN LITT. REFERENCE

Sweet, S. 1998. Maximum known dispersal distance of a California tiger salamander. Professor of Vertebrate systematics and evolutionary morphology; herpetology. University of California, Santa Barbara.

PERSONAL COMMUNICATIONS

Fitzpatrick, B. 2004. Electronic Mail. Tiger Salamander Habitat Use. Dated January 8. Population Biology Graduate Group. University of California, Davis, California.

Cypher, B. 2005a. Electronic mail. San Joaquin kit fox core populations. Dated August 15, 2005. Research ecologist. Endangered Species Recovery Program, University of California, Stanisláus.

Cypher, B. 2005b. Electronic mail. Age and sex of a road-killed San Joaquin kit fox. Dated February 11, 2005. Research ecologist. Endangered Species Recovery Program, University of California, Stanislaus.

Hacker, D. 2005. Electronic mail. Response to questions regarding the Natural Environment Study for the SR 46 Improvement Project (Caltrans 2003). Dated July 27, 2005. Associate Environmental Planner: Natural Resources, Caltrans District 5. San Luis Obispo, California.

Luchetta, J. 2005. State Route 46 project meeting at the Ventura Fish and Wildlife Office on July 27, 2005. Senior Environmental Planner, Caltrans District 5. San Luis Obispo, California.

Moonjian, J. 2005. Electronic mail. Results of 2005 San Joaquin kit fox surveys. April 26, 2005. Graduate Student, California Polytechnic State University, San Luis Obispo, California.

Scott, N.J. 2005. Electronic mail. California red-legged frog researcher. Information regarding the dispersal of California red-legged frogs.

Stafford, R. 2005. Electronic mail. Information regarding San Joaquin kit fox on the Carrizo Plain, San Luis Obispo County, California. Dated February 10, 2005. California Department of Fish and Game biologist. Los Osos, California.

Root, R. 2005a. Conversation with Steve Kirkland regarding documented movements of San Joaquin kit foxes between Camp Roberts, the San Juan Valley, and Carrizo Plain, California. August 2005. U.S. Fish and Wildlife Service biologist, Ventura, California.

_____. 2005b. Electronic mail. Status of the San Joaquin kit fox population in San Benito and Monterey Counties, California. Dated August 17, 2005. U.S. Fish and Wildlife Service biologist, Ventura, California.

The Declining Amphibian Populations Task Force Fieldwork Code of Practice

1. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Rinse cleaned items with sterilized (e.g., boiled or treated) water before leaving each study site.

2. Scrub boots, nets, traps, and other types of equipment used in the aquatic environment with 70 percent ethanol solution or a bleach solution of one-half to one cup of bleach in one gallon of water and rinse clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond, wetland, or riparian area.

3. In remote locations, clean all equipment with 70 percent ethanol or a bleach solution, and rinse with sterile water upon return to the lab or a "base camp." Elsewhere, when laundry facilities are available, remove nets from poles and wash (in a protective mesh laundry bag) with bleach on a "delicate" cycle.

4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable gloves and change them between handling each animal. Dedicate separate sets of nets, boots, traps, and other equipment to each site being visited. Clean and store them separately at the end of each field day.

5. Safely dispose of used cleaning materials and fluids. Do not dispose of cleaning materials and fluids in or near ponds, wetland, and riparian areas; if necessary, return them to the lab for proper disposal. Safely dispose of used disposable gloves in sealed bags.

6. When amphibians are collected, ensure the separation of animals from different sites and take great care to avoid indirect contact (e.g., via handling or reuse of containers) between them or with other captive animals. Do not expose animals to unsterilized vegetation or soils which have been taken from other sites. Always use disinfected and disposable husbandry equipment.

7. If a dead amphibian is found, place it in a sealable plastic bag and refrigerate (do not freeze). If any captured live amphibians appear unhealthy, retain each animal in a separate plastic container that allows air circulation and provides a moist environment from a damp sponge or sphagnum moss. For each collection of live or dead animals, record the date and time collected, location of collection, name of collector, condition of animal upon collection, and any other relevant environmental conditions observed at the time of collection. Immediately contact the Ventura Fish and Wildlife Office at (805) 644-1766 for further instructions.

The Fieldwork Code of Practice has been produced by the Declining Amphibian Populations Task Force with valuable assistance from Begona Arano, Andrew Cunningham, Tom Langton, Jamie Reaser, and Stan Sessions.

For further information on this Code, or on the Declining Amphibian Populations Task Force, contact John Wilkinson, Biology Department, the Open University, Walton Hall, Milton Keynes, MK7 6AA, UK.
Email: DAPTF@open.ac.uk
Fax: +44 (0) 1908-654167

This page intentionally left blank

This page intentionally left blank

Appendix F CDFW Incidental Take Permit

This page intentionally left blank

California Department of Fish and Game
Central Region
1234 East Shaw Avenue
Fresno, California 93710

California Endangered Species Act
Incidental Take Permit No. 2081-2007-020-04

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ROUTE 46 CORRIDOR IMPROVEMENT PROJECT
SAN LUIS OBISPO COUNTY

Authority: This California Endangered Species Act (CESA) Incidental Take Permit (ITP) is issued by the Department of Fish and Game (DFG) pursuant to Fish and Game Code sections 2081(b) and 2081(c), and California Code of Regulations, title 14, subdivision 3, chapter 6, article 1, commencing with section 783. CESA prohibits the take[1] of any species of wildlife designated as an endangered, threatened, or candidate species[2] by the Fish and Game Commission. DFG, however, may authorize the take of such species by permit if the conditions set forth in Fish and Game Code sections 2081(b) and 2081(c) are met. (See also Cal. Code Regs., tit. 14, § 783.4.)

Permittee:	**California Department of Transportation (Caltrans), District 5**
Name and title of principal officer:	**Mr. Chuck Cesena, Branch Chief, Central Coast Environmental Management**
Contact person:	**Ms. Cecilia Boudreau, Environmental Planner, (805) 549-3376 Central Coast Environmental Branch**
Mailing address:	**50 Higuera Street San Luis Obispo, California 93401**

Effective Date and Expiration Date of the ITP:
This ITP shall be executed in duplicate original form and shall become effective once a duplicate original is acknowledged by signature of the Permittee on the last page of the ITP and returned to DFG's Habitat Conservation Branch at the address listed in the Notices section of this ITP. Unless renewed by DFG, this ITP's authorization to take the Covered Species shall expire on **December 31, 2020.**

[1]Pursuant to Fish and Game Code section 86, "'Take' means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill."

[2]"Candidate species" are species of wildlife that have not yet been placed on the list of endangered species or the list of threatened species, but which are under formal consideration for listing pursuant to Fish and Game Code section 2074.2.

Project Location:
The project site is located along State Route (SR) 46 beginning on the east side of Huer Huero Creek Bridge within the City of Paso Robles and ending on the east side of Cholame Valley in the County of San Luis Obispo. (See Figure 1.)

Project Description:
The proposed project (Project) will widen SR 46 between Airport Road and the Cholame Valley from two lanes to four lanes by constructing two new eastbound lanes to the south of the current SR 46, which will become the two westbound lanes. There will be a 61-foot wide median, except between post mile (PM) 32.2 and PM 34.4 where it will be 46.3 feet wide to minimize environmental impacts. The shoulders will be widened and left-turn lanes added at all public road intersections, which will be constructed to Caltrans' full expressway standards. No median barriers will be constructed, and the existing k-rail west of Jack Ranch will be removed. The Project will be constructed in five phases. (See Table 1 below.) The Project will result in the permanent loss of 333.5 acres and temporary impacts to 280.1 acres of San Joaquin kit fox (*Vulpes macrotis mutica*) habitat. These activities and impacts are likely to result in the incidental take of individual kit fox, a species designated as threatened under CESA. (Cal. Code Regs., tit. 14, § 670.5, subd. (b)(6)(E).).

Table 1:

Phase	Approximate Location	Schedule
1 - Union	Airport Road (PM 32.2) to Geneseo Road (PM 37.2)	April 2008
2 - Whitley	Geneseo Road through Whitley Gardens (PM 41.2)	July 2010
3 - Shandon	East of Whitley Gardens through Shandon Rest Area (PM 50.2)	2013 (no funding yet)
4 - Cholame	East of Shandon Rest Area to Jack Ranch Café (PM 54.8)	2016 (no funding yet)
5 - Wye	Jack Ranch Café through Cholame Valley (PM 56.3)	2018 (no funding yet)

Covered Species Subject to the Take Authorization Provided by this ITP:

This ITP covers the following species:

Name	**CESA Status**[3]
San Joaquin kit fox (*Vulpes macrotis mutica*)	Threatened

This species, and only this species, is hereinafter referred to as the "Covered Species."

[3]Under CESA, a species may be on the list of endangered species, the list of threatened species, or the list of candidate species. All other species are "unlisted."

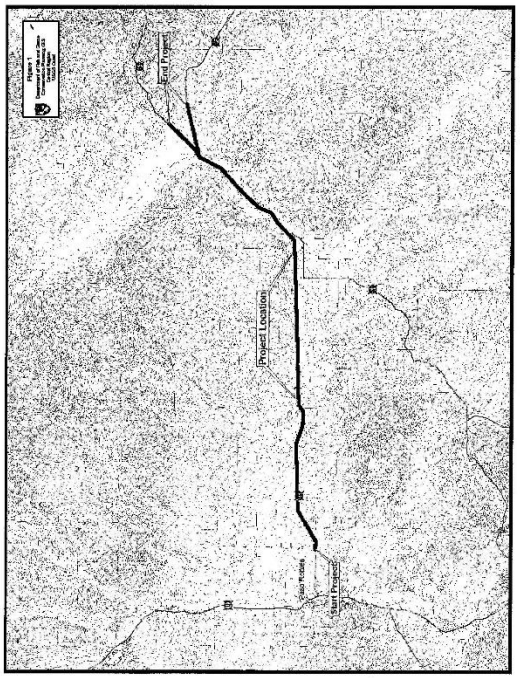


Figure 1. Project Location

Impacts to Covered Species:
The Project will result in permanent impacts to 333.5 acres and temporary impacts to 280.1 acres of Covered Species habitat. (See Table 2) Incidental take of individuals of the Covered Species may occur as a result of mortality due to development activities, Project-related traffic on and off the Project site, and direct loss of habitat caused by the Project. Impacts of the taking on the Covered Species also includes increased incidence of vehicle strikes after construction, temporal losses of habitat, increased habitat fragmentation and edge effects, and the Project's incremental contribution to cumulative impacts on the Covered Species (indirect impacts). Impacts of the taking also include temporary impacts to the Covered Species associated with Project-related temporary ground disturbance within the construction boundary, including storage and staging areas and temporary roads, which may also cause additional incidental take of Covered Species.

Table 2:

San Joaquin kit fox habitat	Permanent Impacts			Temporary Impacts			Total
	# of acres Impacted	Mitigation Ratio	Compensation (acres)	# of acres Impacted	Mitigation Ratio	Compensation (acres)	Compensation (acres)
Airport Road to Jardin Road	23.03	3:1	69.09	25.48	1/3:1	8.49	77.58
Jardin Road to Post Mile 37.6	33.66	2:1	67.32	30.26	1/3:1	10.09	77.41
Total for Phase 1	56.69		136.41	55.74		18.58	154.99
Phase 2 starting at PM 37.6	50.36	4:1	201.44	36.50	1/3:1	12.17	213.61
Phase 3	91.46	4:1	365.84	108.20	1/3:1	36.07	401.91
Phase 4	68.59	4:1	274.36	35.04	1/3:1	11.68	286.04
Phase 5	66.40	4:1	265.60	44.62	1/3:1	14.87	280.47
Total for all Phases	**333.50**		**1,243.65**	**280.10**		**93.37**	**1,337.02**

Other Species Not Subject to the Take Authorization Provided by this ITP:

Fully Protected Species:
This ITP does not authorize the take of any fully protected species. (See Fish & G. Code, §§ 3511, 4700, 5050, 5515.) DFG believes Caltrans can implement the Project as described in this ITP in a manner consistent with the Fish and Game Code provisions governing fully protected species. DFG's determination regarding Project consistency with Fish and Game Code provisions governing fully protected species is based, in part, on the Permittee's commitment independent of this ITP to implement and adhere to the following general avoidance and minimization measures during Project implementation related to blunt-nosed

leopard lizard (*Crotaphytus wislizenii silus*), a fully protected and CESA designated endangered species (*id.*, § 5050, subd. (b)(1); Cal. Code Regs., tit. 14, § 670.5, subd. (a)(4)(B)):

- Permittee commits to perform a protocol-level survey within the construction boundary for each phase of the Project as designated above in Table 2. DFG's Approved Survey Methodology for blunt-nosed leopard lizard is included with this ITP as Attachment 1.

- If the results of any protocol-level survey detect the presence of blunt-nosed leopard lizard within the construction boundary of any phase of the Project, Permittee commits to notify and consult with DFG prior to any activity that could result in the take of blunt-nosed leopard lizard in order to develop and implement measures acceptable to DFG that will avoid take of individuals of the species.

Giant Kangaroo Rat:
This ITP does not authorize take of giant kangaroo rat (*Dipodomys ingens*), a species designated as endangered under CESA. (Cal. Code Regs., tit. 14, § 670.5, subd. (a)(6)(C).) Phase 4 of the Project (between PM 50.2 and PM 54.8) is the only area of the Project site that contains potential habitat for giant kangaroo rats. No giant kangaroo rats were found within the Project area during prior biological surveys. Implementation of the Project is not expected to result in the take of giant kangaroo rat as a result.

DFG and the Permittee acknowledge that, due to the extended time line for the Project, with construction occurring in multiple separate phases, there is a possibility giant kangaroo rat could establish new populations in the Project area during and prior to completion of Project construction. Because of this possibility, the Permittee has committed to take the following actions to avoid unauthorized incidental take of giant kangaroo rat during Phase 4 of the Project:

- Permittee commits to conduct a survey for giant kangaroo rat a maximum of 30 days prior to initiating ground- or vegetation-disturbing activities in the Cholame Valley between PM 50.2 and PM 54.8. These surveys shall be conducted by a biologist, approved by DFG, with knowledge of and experience in the biology and natural history of the giant kangaroo rat. The biologist approved by DFG to conduct the survey shall hold or acquire prior to the survey a scientific collecting permit from DFG for giant kangaroo rat.

- Permittee commits to immediately notify DFG if the survey conducted by the approved biologist prior to any ground- or vegetation- disturbing activities associated with Phase 4 of the Project identifies any potential signs of giant kangaroo rat, including burrows, scat, or tail drag marks.

Incidental Take Authorization of Covered Species:
This ITP authorizes incidental take of the Covered Species and only the Covered Species. With respect to incidental take of the Covered Species, DFG authorizes the Permittee, its employees, contractors, and agents to take the Covered Species incidentally in carrying out the Project, subject to the limitations described in this section and the Conditions of Approval identified below. This ITP does not authorize: take of Covered Species from activities outside the scope of the Project as described above, take of Covered Species resulting from violation of this ITP, or intentional take of Covered Species except for capture and relocation of Covered Species as authorized by this ITP. In addition, as set forth above, this ITP does not authorize take of any species designated as fully protected under the Fish and Game Code or giant kangaroo rat.

Conditions of Approval:
Unless specified otherwise, the following measures shall pertain to all ground- or vegetation-disturbing activities within the Project construction boundaries, including areas used for ingress and egress routes during construction. DFG's issuance of this ITP and Permittee's authorization to take the Covered Species are subject to Permittee's compliance with and implementation of the following conditions of approval:

1. Permittee shall comply with all applicable State, federal, and local laws in existence on the effective date of this ITP or adopted thereafter.

2. Permittee shall implement and adhere to the mitigation measures related to the Covered Species in the Biological Resources section of the Environmental Assessment/Final Environmental Impact Report (SCH Number: 2000011033) adopted by the Permittee as lead agency for the Project under the California Environmental Quality Act (CEQA) on May 10, 2006. Permittee shall also implement and adhere to all conservation measures, terms and conditions related to the Covered Species in the December 2005 Biological Opinion, Biological Opinion for State Route 46 Corridor Improvement Project"" (Number 1-8-03-F59) issued to the Permittee for the Project by the United States Fish and Wildlife Service (USFWS).

3. Permittee shall fully implement and adhere to the conditions of this ITP within the time frames set forth below and as set forth in the Mitigation Monitoring and Reporting Program (MMRP), which is included as Attachment 2 to this ITP.

4. **General Provisions:**

   4.1 Before initiating ground- or vegetation-disturbing activities, Permittee shall designate a representative (Designated Representative) responsible for communications with DFG and for overseeing compliance with this ITP. The Permittee shall notify DFG in writing prior to commencement of ground- or vegetation-disturbing activities of the

Designated Representative's name, business address and contact information, and shall notify DFG in writing if a substitute Designated Representative is selected or identified at any time during the term of this ITP.

4.2 At least 30 days before initiating ground- or vegetation-disturbing activities, Permittee shall submit to DFG in writing the name, qualifications, business address, and contact information for a biological monitor (Designated Biologist). The Designated Biologist shall be knowledgeable and experienced in the biology and natural history of the Covered Species. The Designated Biologist will be responsible for monitoring construction and/or ground- or vegetation-disturbing activities in areas of Covered Species' habitat to help minimize or avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. Permittee shall obtain DFG approval of the Designated Biologist prior to the commencement of Project-related activities that may result in the incidental take of the Covered Species.

4.3 To ensure compliance with the Conditions of Approval of this ITP, the Designated Biologist shall have authority to immediately stop any activity that is not in compliance with this ITP and/or to order any reasonable measure to avoid the take of an individual of the Covered Species or any fully protected species. Neither the Authorized Biologist(s) nor DFG shall be liable for any costs incurred in complying with the management measures, including cease-work orders.

4.4 Permittee shall conduct an education program for all persons employed or otherwise working on the Project site prior to performing any work on-site. Instruction shall consist of a presentation by the Designated Biologist that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status under CESA including legal protection, recovery efforts, penalties for violations, and Project-specific protective management measures provided in this ITP. Interpretation shall be provided for non-English speaking workers, and the same instruction shall be provided for any new workers prior to on-site Project activity. Copies of this ITP shall be maintained at the worksite. Permittee shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry on-site. Upon completion of the program, employees shall sign an affidavit stating they attended the program and understand all protection measures. These forms shall be filed at the worksite offices and be available to DFG upon request.

4.5 Permittee shall initiate a trash abatement program during pre-construction phases of the Project and continue the program throughout the duration of the Project. Trash and food items shall be contained in closed (raven-proof) containers and removed regularly (at least once a week) to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.

4.6 Permittee shall implement dust control measures during Project activities to facilitate visibility for monitoring of the Covered Species by the Designated Biologist.

4.7 Permittee shall prohibit firearms and domestic dogs from the Project site and site access routes during construction and development of the Project, except those in the possession of authorized security personnel or local, State, or Federal law enforcement officials.

4.8 Permittee shall clearly delineate property boundaries of the Project site with fencing, stakes, or flags and shall similarly delineate the limits of construction areas.

4.9 Permittee shall clearly delineate habitat of the Covered Species on the Project site with posted signs, posting stakes, flags, and/or rope or cord, and place Environmentally Sensitive Area (ESA) fencing as necessary to minimize disturbance of Covered Species' habitat.

4.10 Project-related personnel shall access the Project site during construction and development activities using existing routes and shall not cross Covered Species' habitat outside of and in route to the Project site. Project-related vehicle traffic shall be restricted to established roads, staging and parking areas. Vehicle speeds shall not exceed 20 miles per hour, except when traveling on existing highway, in order to avoid Covered Species on or traversing the roads. If the Permittee determines construction of off-site routes for travel are necessary, Permittee shall contact DFG prior to carrying out any such an activity. DFG may require an amendment to this ITP if additional take of Covered Species may result from Project modification.

4.11 Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the Project site using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked Project boundaries unless specifically provided for in this ITP.

4.12 Permittee shall immediately stop/repair any fuel or hazardous waste leaks or spills on the Project site during construction and development activities and immediately clean up such spills at the time of occurrence. Permittee shall exclude the storage and handling of hazardous materials from the construction zone and shall properly contain and dispose of any unused or leftover hazardous products off-site.

4.13 Permittee shall provide DFG staff with reasonable access to the Project site and mitigation lands under Permittee control, and shall otherwise fully cooperate with DFG efforts to verify compliance with or effectiveness of mitigation measures set forth in the ITP. Neither the Designated Biologist nor DFG shall be liable for any costs incurred in complying with the Conditions of Approval, including cease-work orders issued by DFG.

4.14 Upon completion of Project construction, Permittee shall remove from the Project site and properly dispose of all construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.

4.15 Notwithstanding any expiration date on the take authorization provided by this ITP, Permittee's obligations under this ITP do not end until DFG accepts as complete the Permittee's Final Mitigation Report required by Condition 5.9 of this ITP.

5. Notification, Reporting and Monitoring:

5.1 Permittee shall provide DFG with written detailed construction plans, including engineering drawings, a minimum of 30 days prior to ground- or vegetation-disturbing activities authorized by this ITP. These plans as provided to DFG by the Permittee shall include the protection and restoration features and techniques made part of the Permittee's construction contract for the Project, including the features and techniques and any other modifications to the Project made since the Permittee submitted its application to DFG for this ITP.

5.2 Permittee shall notify DFG 14 calendar days before initiating ground- or vegetation-disturbing activities for each phase of the Project and document compliance with all pre-Project Conditions of Approval before initiating ground- or vegetation-disturbing activities.

5.3 Permittee shall immediately notify DFG in writing if it determines that it is not in compliance with any Conditions of Approval of this ITP, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods indicated in this ITP and MMRP. Permittee shall report any non-compliance with the ITP during the construction phase of the Project to DFG within 24 hours.

5.4 Monthly Report: The Designated Biologist shall be on-site daily while construction and/or surface-disturbing activities are taking place to minimize take of the Covered Species; to ensure compliance with all mitigation and avoidance measures; to check all exclusion zones; and to ensure that signs, stakes, and fencing are intact, and that human activities are restricted to outside of these protective zones. Weekly compliance inspections shall be conducted after clearing, grubbing, and grading are completed. These inspections shall be compiled into Monthly Compliance Reports along with a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. Monthly Compliance Reports shall be submitted to DFG's Regional Office at the address listed in the Notices section of this ITP or via e-mail to DFG's Regional Representative. At the time of this ITP's approval, the DFG Regional Representative is Laura Peterson-Diaz (e-mail address lpdiaz@dfg.ca.gov). DFG may

at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections (see Condition 5.5).

5.5 All observations of Covered Species and their sign, oversight activities, verifications, compliance inspections, surveys, monitoring, and records required by this ITP shall be reported in writing to DFG by the Designated Representative or Designated Biologist. Permittee shall submit reports of these activities to DFG in the next Monthly Compliance Report.

5.6 All Covered Species sightings confirmed by the Designated Biologist shall include the following documented information: the date, time, and location of each occurrence using GPS technology, the name of the party that actually identified the animal, circumstances of the incident, the general condition and health of each individual, any diagnostic markings, sex, age (juvenile or adult), and actions undertaken and habitat description. The Permittee shall submit this information to the California Natural Diversity Database (CNDDB).

5.7 Annual Report: Permittee shall provide DFG with an Annual Status Report (ASR) no later than January 31 of every year beginning with the issuance of the ITP and continuing until DFG accepts the Final Mitigation Report identified below. Each ASR shall include, at a minimum: 1) a general description of the status of the Project site and construction activities, including actual or projected completion dates, if known; 2) a copy of the table in the MMRP with notes showing the current implementation status of each mitigation measure; 3) a copy of the Monthly Compliance Reports from the previous year; and 4) a description of any site-specific avoidance and minimization measures that were employed and an assessment of the effectiveness of each completed or partially completed mitigation measure in minimizing and compensating for Project impacts.

5.8 Restoration of Project lands where temporary impacts occur shall be monitored and the status of the restoration included in the Annual Reports beginning after completion of Phase I of the Project. Restoration of all areas subject to temporary ground- or vegetation disturbance shall be recontoured, as necessary, covered with stockpiled top-soil, and seeded with native species. Monitoring for 2 years post-construction of each Phase shall insure that noxious weeds do not become dominant in the restored area and that native species found in the vicinity are successfully reintroduced. If the temporary impact lands have not returned to pre-Project conditions two years after completion of each Phase, additional mitigation and an amendment to this ITP might be required.

5.9 Final Mitigation Report: No later than 60 days after completion of the Project, including completion of all mitigation measures, Permittee shall provide DFG with a Final

Mitigation Report. The Final Mitigation Report shall be prepared by the Designated Biologist and shall include, at a minimum: 1) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; 2) all available information about Project-related incidental take of the Covered Species; 3) information about other Project impacts on the Covered Species; 4) construction dates; 5) an assessment of the effectiveness of the ITP's Conditions of Approval in minimizing and compensating for Project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the Covered Species; and 7) any other pertinent information, including the level of take of the Covered Species associated with the Project.

5.10 If a Covered Species is killed by a Project-related activity during construction of the Project or if a Covered Species is otherwise found dead, the Designated Biologist shall be immediately notified and initial notification shall be made to the Sacramento Office of the USFWS at (916) 414-6620, and DFG by calling the DFG Regional Office at (559) 243-4017. The initial notification to the USFWS and DFG shall include information regarding the location, species, number of animals injured or killed, and the DFG ITP Number. Following initial notification, Permittee shall send DFG a written report within 2 calendar days. The report shall include the date and time of the finding or incident, location of the carcass, and if possible provide a photograph, explanation as to cause of death, and any other pertinent information. The Designated Biologist shall collect the carcass, place it in plastic, and keep it on ice or in a freezer until a DFG representative can either collect the specimen or issue alternative instructions.

6. Take Minimization Measures:

Take avoidance of Covered Species is the first priority of this ITP. Relocation of Covered Species discovered within the work area prior to ground- or vegetation-disturbing activities, as well as during Project construction, is the second priority of this ITP. Permittee shall implement and adhere to the following conditions to avoid or minimize take of Covered Species.

6.1 Workers shall inspect for Covered Species under vehicles and equipment before vehicles and equipment are moved. If a Covered Species is present, the worker shall wait for the Covered Species to move on its own to a safe location.

6.2 If a Covered Species is injured as a result of Project-related activities, it shall be immediately taken to a DFG-approved wildlife rehabilitation or veterinary facility. The Permittee shall identify the facility prior to the start of ground- or vegetation-disturbing activities. Permittee shall bear any costs associated with the care or treatment of such injured Covered Species. Permittee shall notify the USFWS and DFG immediately unless the incident occurs outside of normal business hours. In that event the USFWS and DFG shall be notified no later than noon on the next business day. Notification to DFG shall be via telephone or e-mail, followed by a written incident report. Notification

shall include the date, time, location, and circumstances of the incident and the name of the facility where the animal was taken.

6.3 The Designated Biologist shall perform a pre-construction survey for Covered Species no more then 30 days prior to ground- or vegetation-disturbing activities for each Phase of the Project. Surveys shall cover the proposed construction right-of-way (ROW) with a 200-foot buffer for all areas along the Project length with habitat to support Covered Species. A report documenting the results of the pre-construction surveys shall be submitted to DFG within 30 days after performing any such survey.

6.4 If a potential Covered Species den (one that shows evidence of current use or was used in the past) is discovered or a Covered Species is found in an "atypical" den (e.g., a pipe or culvert), a 50-foot buffer shall be established using flagging. If a known Covered Species den is discovered, a buffer of at least 100 feet shall be established using fencing. If a natal den (den in which Covered Species young are reared) is discovered, a buffer of at least 200 feet shall be established using fencing. Buffer zones shall have restricted entry. Permittee shall notify the USFWS and DFG's Regional Representative immediately via telephone or email if any Covered Species dens, natal dens or atypical dens are discovered.

6.5 For dens found within the portion of the Project area to be disturbed, natal dens shall not be excavated until the pups and adults have vacated and then only after consultation with the USFWS and DFG. If, after 4 consecutive days of monitoring with tracking medium or infrared camera the Designated Biologist has determined that a Covered Species is not currently present, known dens may be destroyed. Potential dens (any hole 3 inches or larger) may be excavated without monitoring if a take permit has been obtained from the USFWS, but if the process reveals evidence of use inside then destruction shall cease and the USFWS and DFG shall be notified immediately.

6.6 Destruction of Covered Species dens shall be accomplished by careful excavation until it is certain no Covered Species are inside. The den should be fully excavated, filled with dirt and compacted to ensure that Covered Species cannot reenter or use the den during the construction period. If at any point during excavation a Covered Species is discovered inside the den, excavation shall cease immediately and monitoring of the den as described above shall be resumed. Destruction of the den shall only be completed when, in the judgment of the Designated Biologist, the animal has escaped from or otherwise vacated the partially destroyed den.

6.7 Any Covered Species' den that must be destroyed shall be replaced with an artificial den. This will compensate for the loss of important shelter used by Covered Species for protection, reproduction, and escape from predators. Den design and placement should be determined on a site-specific basis in consultation with the USFWS and DFG.

6.8 All open holes and trenches within the Project construction boundary shall be inspected at the beginning of the day, middle of the day, and end of the day for trapped animals. To prevent inadvertent entrapment of Covered Species or any other animals during the construction phase of the Project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured Covered Species is discovered, the USFWS and DFG will be notified within one (1) working day of the incident.

6.9 All construction pipe, culverts, or similar structures with a diameter of 7.6 centimeters (3 inches) or greater that are stored at the construction site for one or more overnight periods will be thoroughly inspected for Covered Species before the pipe is subsequently moved, buried, or capped. If a Covered Species is discovered inside a pipe during inspection, that section of pipe shall not be moved until the animal has escaped on its own.

7. Mitigation Measures/Compensation for Take:
DFG has determined that permanent protection of compensatory habitat is necessary and required under CESA to fully mitigate the impacts of the taking on the Covered Species that will result with implementation of the Project.

7.1 Permittee shall acquire and permanently preserve 1,337.02 acres as total compensation for the loss of Covered Species' habitat for the entire Project. The required acreage is based on factors including an assessment of the quality of the habitat at the Project site and DFG's estimate of the acreage required to provide for adequate biological carrying capacity at a replacement location.

7.2 Permittee has identified five Phases of the Project. (See Table 1.) Permittee shall complete all compensatory mitigation requirements separately and in their entirety for each Phase of the Project in sequential order prior to commencing ground- or vegetation-disturbing activities for the next Project Phase. As described in Table 2 of this ITP, the required compensation for each Phase of the Project is as follows: Phase 1 is 154.99 acres, Phase 2 is 213.61 acres, Phase 3 is 401.91 acres, Phase 4 is 286.04 acres, and Phase 5 is 280.47 acres; for a total of 1,337.02 acres.

7.3 For Project Phases 1 through 3, Permittee intends to mitigate at the Palo Prieto Conservation Bank, which approved DFG on February 26, 2008, as authorized to sell habitat mitigation credits for the Covered Species. Permittee is not authorized to commence ground- or vegetation-disturbing activities associated with the Project until this ITP is effective and the Permittee has complied with ITP Condition of Approval 5.2,

including providing written documentation to DFG that Permittee has purchased the required habitat mitigation credits.

7.4 For Project Phases 4 and 5, the Permittee shall purchase credits at the Palo Prieto Conservation Bank or another conservation bank approved by DFG in San Luis Obispo County that is authorized to sell habitat mitigation credits for the Covered Species. Permittee shall not commence ground- or vegetation-disturbing activities associated with Project Phases 4 and 5 until the Permittee has complied with ITP Condition of Approval 5.2, including providing written documentation to DFG that Permittee has purchased the required habitat mitigation credits.

Amendment:
This ITP may be amended without the concurrence of the Permittee if DFG determines that continued implementation of the Project under existing ITP conditions would jeopardize the continued existence of the Covered Species or that Project changes or changed biological conditions necessitate an ITP amendment to ensure that impacts to the Covered Species are minimized and fully mitigated. DFG may also amend the ITP at any time without the concurrence of the Permittee as required by law.

Stop-Work Order:
DFG may issue Permittee a written stop-work order to suspend any activity covered by this ITP for an initial period of up to 25 days to prevent or remedy a violation of ITP conditions (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. Permittee shall comply with the stop-work order immediately upon receipt thereof. DFG may extend a stop-work order under this provision for a period not to exceed 25 additional days, upon written notice to the Permittee. DFG shall commence the formal suspension process, pursuant to California Code of Regulations, Title 14, section 783.7, within five working days of issuing a stop-work order.

Compliance with Other Laws:
This ITP contains DFG's requirements for the Project pursuant to CESA. This ITP does not necessarily create an entitlement to proceed with the Project. Permittee is responsible for complying with all other applicable State, federal, and local laws.

Notices:
The Permittee shall deliver the fully executed duplicate original ITP by first class mail or overnight delivery to the following address:

Habitat Conservation Planning Branch
Attention: CESA Permitting Program
1416 Ninth Street, Suite 1260
Sacramento, California 95814

Written notices, reports, and other communications relating to this ITP shall be delivered to DFG by first-class mail at the following addresses or at addresses DFG may subsequently provide the Permittee. Notices, reports, and other communications shall reference the Project name, Permittee, and ITP Number (2081-2007-020-04) in a cover letter and on any other associated documents.

Original cover with attachment(s) to:

Jeffrey R. Single, Ph.D., Regional Manager
1234 East Shaw Avenue
Fresno, California 93710
Phone (559) 243-4005, Fax (559) 243-4026

Copy of cover without attachment(s) to:

Office of the General Counsel
California Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, California 95814

And:

Habitat Conservation Planning Branch
California Department of Fish and Game
1416 Ninth Street, Suite 1260
Sacramento, California 95814

Unless Permittee is notified otherwise, DFG's Regional Representative for purposes of addressing issues that arise during implementation of the ITP is:

Ms. Laura Peterson-Diaz
1234 East Shaw Avenue
Fresno, California 93710
Phone (559) 243-4017, extension 225, Fax (559) 243-4020

Compliance with the California Environmental Quality Act (CEQA):
DFG's issuance of the ITP is subject to CEQA. DFG is a responsible agency under CEQA with respect to the ITP because of prior environmental review of the Project by the Permittee as lead agency. (See generally Pub. Resources Code, §§ 21067, 21069.) The Permittee's prior legal agency review of the Project is set forth in the State Route 46 Corridor Improvement Environmental Assessment with Finding of No Significant Impact/Final Environmental Impact Report (EIR) (SCH No. 2000011033), as approved on May 10, 2006. At the time that Permittee certified the EIR as lead agency and approved the Project, it also

adopted all mitigation measures described in the EIR as conditions of Project approval. In fulfilling its obligations as a responsible agency, DFG's obligations under CEQA are more limited than the lead agency. (CEQA Guidelines, § 15096, subds. (a), (f).)[5] DFG, in particular, is responsible for considering only the effects of those activities involved in the Project which it is required by law to carry out or approve and mitigating or avoiding only the direct or indirect environmental effects of those parts of the Project which it decides to carry out, finance, or approve. (Pub. Resources Code, § 21002.1, subd. (d); CEQA Guidelines, §§ 15041, subd. (b), 15096, subds. (f), (g).) Accordingly, because DFG's exercise of discretion is limited to issuance of the ITP, DFG is responsible for considering only the environmental effects that fall within its permitting authority under CESA.

This ITP, along with DFG's CEQA findings for the ITP and Project, which are available as a separate document, provides evidence of DFG's consideration of the lead agency's EIR for the Project and the environmental effects related to issuance of the ITP. (CEQA Guidelines, § 15096, subd. (f).) DFG finds that issuance of the ITP will not result in any previously undisclosed potentially significant effects on the environment or a substantial increase in the severity of any potentially significant environmental effects previously disclosed by the lead agency. Furthermore, to the extent the potential for such effects exists, DFG finds adherence to and implementation of the lead agency's conditions of approval as well as adherence to and implementation of the Conditions of Approval of the ITP will avoid or reduce to below a level of significance any such potential effects. DFG consequently finds that issuance of the ITP will not result in any significant, adverse impacts on the environment.

Findings Under CESA:
These findings are intended to document DFG's compliance with the specific findings requirements set forth in CESA and related regulations. (Fish & G. Code, 2081, subs. (b)-(c); Cal. Code Regs., tit. 14, §§ 783.4, subds. (a)-(b), 783.5, subd. (c)(2).)

DFG finds that the issuance of this ITP complies and is consistent with the criteria governing the issuance of ITPs under CESA:

(1) Take of Covered Species, as defined in the ITP, will be incidental to the otherwise lawful activities covered under the ITP;

(2) Impacts of the taking of the Covered Species will be minimized and fully mitigated through the implementation of measures required by this ITP, as described in the MMRP. Measures include: 1) permanent habitat protection; 2) measures to avoid take of the Covered Species during Project activities; 3) worker education; and 4) Monthly Compliance Reports. DFG evaluated the quality of the habitat on the

[5]The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Project site, the scope and extent of direct impacts, the scope and extent of indirect impacts, and other relevant information available to DFG or provided by the Permittee. Based on this evaluation, DFG determined that the protection and management in perpetuity of 1,337.02 acres of compensatory habitat that is contiguous with other protected Covered Species habitat and/or is of higher quality than the habitat being destroyed by the Project, along with the minimization, monitoring, reporting, and funding requirements of this ITP, meet the CESA issuance criteria.

(3) The take avoidance and mitigation measures required pursuant to the conditions of this ITP and its attachments are roughly proportional to the impacts of the taking authorized by this ITP;

(4) The measures required by this ITP maintain Permittee's objectives to the greatest extent possible;

(5) All required measures are capable of successful implementation;

(6) The ITP is consistent with any regulations adopted, pursuant to Fish and Game Code sections 2112 and 2114;

(7) Permittee has ensured adequate funding to implement the measures required by the ITP as well as for monitoring compliance with and the effectiveness of those measures for the Project; and

(8) Issuance of the ITP will not jeopardize the continued existence of the Covered Species based on the best scientific and other information reasonably available, and this finding includes consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (a) known population trends; (b) known threats to the species; and (c) reasonably foreseeable impacts on the species from other related projects and activities. Moreover, DFG's finding is based, in part, on DFG's express authority to amend the terms and conditions of the ITP without concurrence of the Permittee as necessary to avoid jeopardy and as required by law.

Attachments:

ATTACHMENT 1	Approved Survey Methods for Blunt-Nosed Leopard Lizard
ATTACHMENT 2	Mitigation Monitoring and Reporting Program

ISSUED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME

on 3/27/09.

JEFFREY R. SINGLE, PH.D.,
Regional Manager
CENTRAL REGION

APPROVED AS TO FORM:

John H. Mattox
Senior Staff Counsel
Lead Counsel for CESA Permitting

ACKNOWLEDGMENT

The undersigned: 1) warrants that he or she is acting as a duly authorized representative of the Permittee, 2) acknowledges receipt of this ITP, and 3) agrees on behalf of the Permittee to comply with all terms and conditions of the ITP.

By: Chuck Cesena Date: 3/24/09

Printed Name: Chuck Cesena Title: Senior Environmental Planner

Attachment 1

July 2008

Dear Blunt-nosed Leopard Lizard Surveyor,

Attached is the revised survey methodology for the blunt-nosed leopard lizard (*Gambelia sila*). The protocol was developed by the Central Region of the California Department of Fish and Game (DFG) with input from the United States Fish and Wildlife Service (USFWS), the Bureau of Land Management (BLM), and various species experts. This protocol supersedes previous versions of DFG survey protocols for the blunt-nosed leopard lizard. The range-wide decline of population numbers in the past decade has provided the impetus for development of a more rigorous methodology to detect species presence. Additionally, since DFG is not able to issue an incidental take permit for the blunt-nosed leopard lizard due to its status as a fully-protected reptile under the California Fish and Game Code **§5050**, detection of species presence on a project site is crucial.

This standard methodology has been developed to provide consultants, local, state and federal agencies with minimum acceptable standards for surveys conducted to determine the status of this state and federally endangered species. The survey methods described within this protocol were designed to optimize the likelihood of detecting the presence of blunt-nosed leopard lizards should they occur on a project site.

When the presence of blunt-nosed leopard lizards is detected, we request that you notify DFG's local Permitting and Project Review staff for further instructions of what additional information will be needed to assess the project's potential impact on the species. This will assist in expediting the review of the project and help control the project sponsor's biological survey costs. Additionally, the USFWS should be contacted for further advice since this is also a federally-listed species. Use of this protocol and notification of DFG does not exempt you from consultation with the USFWS.

DFG is willing to cooperate with surveyors who have circumstances or needs not addressed by this protocol and who may wish to propose alternative methods to comply with State law prohibiting take of blunt-nosed leopard lizards. If you have any questions or comments regarding this methodology or if you want to propose the use of a different methodology, please contact the Central Region's Habitat Conservation Planning staff at (559) 243-4014 (Fresno, Merced, Madera, Kings, Tulare, and Kern Counties) or (805) 528-8670 (San Benito and San Luis Obispo Counties).

CALIFORNIA DEPARTMENT OF FISH AND GAME

APPROVED SURVEY METHODOLOGY FOR THE
BLUNT-NOSED LEOPARD LIZARD
JULY 2008

Blunt-nosed leopard lizard, *Gambelia sila* = (*Gambelia silus*)
STATUS: SE, FE, DFG fully protected

This protocol has been developed to provide a minimum level of protection for blunt-nosed leopard lizards (BNLL) when projects or maintenance activities are scheduled to occur within potential BNLL habitat. Disturbing activities should not proceed until appropriate surveys are conducted to determine if the species is present on the site. Surveys conducted according to the following protocol by qualified researchers provide a reasonable, although not conclusive, indication of BNLL presence at a particular site and yield critical information needed to prevent mortality and minimize impacts to the species. Researchers conducting the surveys are expected to understand the basic biological requirements of the species and have the ability to recognize potential BNLL habitat. This protocol satisfies the Department of Fish and Game requirements when it is determined that formal BNLL surveys are needed. [Note: This protocol is appropriate for pre-project BNLL surveys, however, population monitoring over time on a site is best conducted using a permanent survey grid, such as described in Tollestrup (1976).]

METHODS:
A minimum of two researchers, walking in parallel on adjacent transects, should conduct a BNLL survey. Optimum BNLL activity periods occur when air temperature is between 25C-35C (77F-95F) (Tollestrup 1976; USFWS 1985, 1998). Surveys must be conducted when the air temperature falls within the optimal range. Surveys may begin after sunrise as soon as the minimum air temperature criterion is met, and must end by 1400 hours or when the maximum temperature is reached, whichever occurs first (Tollestrup 1976). Time of day and air temperature should be recorded at the start and end of each survey. Air temperature should be periodically checked to ensure that the maximum has not been exceeded. Air temperature should be measured at 1-2 cm above the ground over a surface most representative of the area being surveyed. The researcher must shade the thermometer from direct sunlight while taking the reading. Other factors that affect BNLL activity such as soil temperature (measured at 1cm below soil surface with a shaded thermometer) and weather conditions must be recorded at the start and end of each survey. Surveys should not be conducted on overcast days (cloud cover > 90%) or when sustained wind velocity exceeds 10 mph (force > 3 on Beaufort wind scale) (Montanucci 1965; Tollestrup 1976; J. Vance, pers. comm.).

Surveys must be conducted on foot, and researchers must survey all areas with potential BNLL habitat. BNLL are often difficult to detect, particularly in areas where shrubs are fairly numerous (>30% cover) and/or the herbaceous vegetation is tall (>30 cm). In such conditions, 10 meter wide transects should be walked at a slow pace. In areas with few shrubs and shorter herbaceous vegetation (<15 cm), transects as wide as 30 meters are acceptable. When feasible, transects should be walked in a north-south orientation to minimize glare from the sun. The surveyor should stop periodically and scan the transect for BNLL using close-focusing binoculars (minimum 7X35 magnification). In addition to recording the location of all BNLL observed (must provide UTM coordinates), the presence of habitat features important for BNLL (washes, playas, relative abundance of small mammal burrows) should also be recorded for each transect. Streambeds, washes, roads, etc., should be walked in addition to transect lines since BNLL are often seen in these areas.

TIMING AND LENGTH OF SURVEY:
Survey intensity should be commensurate with the anticipated level of disturbance to the BNLL habitat. The primary concern for BNLL when disturbance occurs during maintenance activities is direct mortality from equipment or personnel. Removal of intact BNLL habitat has a much greater potential for "take" due to direct impact on animals aboveground as well as any hibernating animals or eggs underground. A longer survey effort including both spring adult surveys and fall hatchling surveys is therefore required for activities that cause impacts to undisturbed BNLL habitat. The more intensive survey effort increases the chances of observing the species, even if the population is small. Once a BNLL has been observed, surveys may cease and consultation with the Department must begin regarding avoidance measures. If BNLL are observed incidentally while conducting surveys for other species, specific surveys for BNLL are not required. Surveys will be accepted for one year from the date of completion.

Disturbances for Maintenance Activities
Examples of maintenance activities include grading existing roads, grass mowing on roadsides, and maintaining existing structures. BNLL are active and above ground from April through September, but optimum activity periods for adults occur between April 15 and July 15 (Montanucci 1965; Tollestrup 1979; USFWS 1985, 1998). BNLL surveys should be conducted for a total of 8 days over the course of the 90-day time span. A minimum of 3 survey days should be conducted consecutively, with a maximum of 6 days completed within any 30-day time period. Fall hatchling surveys are not required for activities in this category.

Disturbances Leading to Habitat Removal
Examples of disturbances that impact intact habitat include establishment of new roads or structures, housing subdivisions, and changes in historic land use. BNLL surveys should be conducted for 12 days over the course of the 90-day adult optimal survey period (April 15 to July 15), with a maximum of 4 survey days per week and 8 days within any 30-day time period. At least one survey session should be conducted for 4 consecutive days, weather permitting. BNLL hatchlings and subadults are most commonly observed from August 1 to September 15, along with a few adults that are still active above ground (Montanucci 1965; Tollestrup 1979; USFWS 1985, 1998). In addition to the 12 days of adult BNLL surveys required for activities in this category, 5 more survey days are required during the hatchling optimal survey period for a total of 17 survey days overall.

QUALIFICATIONS OF RESEARCHERS:
An acceptable BNLL survey crew should consist of no more than 3 Level I researchers for every Level II researcher. This restriction should reduce the number of incorrect/missed identifications. The names and affiliations of all researchers must be recorded for each survey day.

Level I: Researcher has demonstrated the ability to distinguish BNLL from other common lizard species that may inhabit the area;

Level II: Researcher has demonstrated the ability to distinguish BNLL from other common lizard species that may inhabit the area and has participated in at least 50 survey days for BNLL (or 25 survey days and a BNLL identification course recognized by/acceptable to the Department of Fish and Game). Researcher has made at least one confirmed* field sighting of a BNLL.

REPORTING
All BNLL observations should be reported to the California Natural Diversity Database within 30 days. A sample form is attached. Additional forms can be obtained at http://www.dfg.ca.gov/whdab/html/animals.html .

SPECIAL REQUIREMENT FOR SURVEYS IN San Luis Obispo County
Lands with potential BNLL habitat in San Luis Obispo County have different conditions compared to other counties within the range of BNLL. The sites with habitat in San Luis Obispo County tend to be at higher elevations, where nighttime temperatures can remain low even though daytime temperatures meet minimum survey criteria. In such conditions, BNLL activity is likely to be low and surveys conducted at this time could result in non-detection of the species even though they are present. As such, an additional requirement of a visit to a known voucher site to check for BNLL activity applies to surveys conducted in this County. Once the species has been observed at the voucher site, formal surveys can begin. The Elkhorn Plain ER has been selected as the voucher site for San Luis Obispo County.

LITERATURE CITED

Montanucci, R.R., 1965. Observations of the San Joaquin leopard lizard, *Crotaphytus wislizenii silus* Stejneger. Herpetologica 21(4): 270-283.

Tollestrup, K. 1976. A standardized method of obtaining an index of densities of blunt-nosed leopard lizards, *Crotaphytus silus*. Unpub. Rpt. U. S. Fish and Wildlife Service, Sacramento, CA. 11pp + Appendices.

Tollestrup, K. 1979. The ecology, social structure, and foraging behavior of two closely-related leopard lizards, *Gambelia silus* and *Gambelia wislizenii*. PhD Dissertation, University of California Berkeley.

United States Fish and Wildlife Service. 1985. Revised blunt-nosed leopard lizard recovery plan. United States Fish and Wildlife Service. Region 1, Portland, OR. 85 pp.

United States Fish and Wildlife Service. 1998. Recovery plan for upland species of the San Joaquin Valley, California. United States Fish and Wildlife Service. Region 1, Portland, OR. 319 pp.

PERSONAL COMMUNICATIONS

Julie Vance, California Department of Water Resources, San Joaquin District, 3374 E. Shields Ave, Fresno, California, 93726.

*A minimum of one confirmed field sighting must be documented for each Level II researcher and be available to the Department upon request. As with all BNLL sightings, it should also be submitted to the California Natural Diversity Database. Information to be included in documentation of BNLL sighting: Name of researcher, date of survey, location of survey, names of accompanying researchers who can confirm the sighting, and details of sighting (distance, BNLL activity, etc).

CONTACT INFORMATION

California Department of Fish and Game
Central Region
Habitat Conservation Planning
1234 Shaw Ave
Fresno, CA 93710
559/243-4005

The Department is willing to cooperate with researchers who have circumstances or needs not addressed by this protocol and who may wish to propose alternative methods to comply with State law prohibiting take of BNLL.

Attachment 2

CALIFORNIA DEPARTMENT OF FISH AND GAME
MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)
CALIFORNIA ENDANGERED SPECIES ACT

INCIDENTAL TAKE PERMIT NO. 2081-2007-020-04

Permittee: **California Department of Transportation (Caltrans)**

Project: **Route 46 Corridor Improvement Project**

PURPOSE OF THE MMRP

The purpose of the MMRP is to ensure that the minimization and mitigation measures required by the California Department of Fish and Game (DFG) for the above-referenced Project are properly implemented and thereby to ensure compliance with Section 2081(b) of the Fish and Game Code and Section 21081.6 of the Public Resources Code. A table summarizing the mitigation measures required by DFG is attached. This table is a tool for use in monitoring and reporting on implementation of mitigation measures, but the descriptions in the table do not supersede the mitigation measures set forth in the California Incidental Take Permit (ITP) and in omission of a permit requirement from the attached table does not relieve the Permittee of the obligation to ensure that the requirement is performed.

OBLIGATIONS OF THE PERMITTEE

Mitigation measures must be implemented within the time periods indicated in the table that appears below. The Permittee has the primary responsibility for monitoring compliance with all mitigation measures and for reporting to DFG on the progress in implementing those measures. These monitoring and reporting requirements are set forth in the ITP itself and are summarized at the front of the attached table.

The ITP requires that the Permittee identify and fund at least one full-time biologist to oversee and implement the mitigation activities that are required conditions of approval. The Permittee, through the "Designated Biologist", the "Designated Representative", or some other specific Permittee's designee shall insure the implementation of all Avoidance and Mitigation Measures listed in the ITP and shall monitor the effectiveness of these measures.

VERIFICATION OF COMPLIANCE, EFFECTIVENESS

DFG may, at its own discretion, verify compliance with any mitigation measure or independently assess the effectiveness of any mitigation measure.

1

TABLE OF MITIGATION MEASURES

The following items are identified for each mitigation measure: Mitigation Measure, Source, Implementation Schedule, Responsible Party, and Status/Date/Initials. The Mitigation Measure column summarizes the mitigation requirements of the ITP. The Source column identifies the ITP document that sets forth the mitigation measure. The Implementation Schedule column shows the date or phase when each mitigation measure shall be implemented. The Responsible Party column identifies the agency that is primarily responsible for implementing the mitigation measure. The Status/Date/Initials column shall be completed by the Permittee during preparation of each Status Report and the Final Mitigation Report, and must identify the implementation status of each mitigation measure, the date that status was determined, and the initials of the person determining the status.

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
PRE-CONSTRUCTION					
1	Before initiating ground- or vegetation-disturbing activities, Permittee shall designate a representative (Designated Representative) responsible for communications with DFG and for overseeing compliance with the ITP. The Permittee shall notify DFG in writing prior to commencement of ground- or vegetation-disturbing activities of the Designated Representative's name, business address and contact information, and shall notify DFG in writing if a substitute Designated Representative is selected or identified at any time during the term of the ITP.	ITP Condition #4.1	Before commencing ground or vegetation disturbing activities Entire Project	Permittee	
2	At least 30 days before initiating ground- or vegetation-disturbing activities, Permittee shall submit to DFG in writing the name, qualifications, business address, and contact information for a biological monitor (Designated Biologist). The Designated Biologist shall be knowledgeable and experienced in the biology and natural history of the Covered Species. The Designated Biologist will be responsible for monitoring construction and/or ground- or vegetation-disturbing activities in areas of Covered Species' habitat to help minimize or avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. Permittee shall obtain DFG approval of the Designated Biologist prior to the commencement of Project-related activities that may result in the incidental take of the Covered Species.	ITP Condition #4.2	Before commencing ground or vegetation disturbing activities Entire Project	Permittee	
3	The Designated Biologist shall have authority to immediately stop any activity that is not in compliance with this ITP and/or to order any reasonable measure to avoid the take of an individual of the Covered Species or any fully protected species. Neither the Authorized Biologist(s) nor DFG shall be liable for any costs incurred in complying with the management measures, including cease-work orders.	ITP Condition #4.3	Before commencing ground or vegetation disturbing activities Entire Project	Permittee	
4	Permittee shall conduct an education program for all persons employed or otherwise working on the Project site prior to performing any work on-site. Instruction shall consist of a presentation by the Designated Biologist that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status under CESA including legal protection, recovery efforts, penalties for violations, and Project-specific protective management measures provided in the ITP. Interpretation shall be provided for non-English speaking workers, and the same instruction shall be provided for any new workers prior to on-site Project activity. Copies of the ITP shall be maintained at the worksite. Permittee shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry on-site. Upon completion of the program, employees shall sign an affidavit stating they attended the program and understand all protection measures. These forms shall be filed at the worksite offices and be available to DFG upon request.	ITP Condition #4.4	Before commencing ground or vegetation disturbing activities Entire Project	Permittee	
5	Permittee shall initiate a trash abatement program during pre-construction phases of the Project and continue the program throughout the duration of the Project. Trash and food items shall be contained in closed (raven-proof) containers and removed regularly (at least once a week) to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.	ITP Condition #4.5	Before commencing ground or vegetation disturbing activities Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
6	Permittee shall provide DFG with written detailed construction plans, including engineering drawings, a minimum of 30 days prior to ground- or vegetation-disturbing activities authorized by this ITP. These plans as provided to DFG by the Permittee shall include the protection and restoration features and techniques made part of the Permittee's construction contract for the Project, including the features and techniques and any other modifications to the Project made since the Permittee submitted its application to DFG for this ITP.	ITP Condition #5.1	Before commencing ground or vegetation disturbing activities of each phase	Permittee	
7	Permittee shall notify DFG 14 calendar days before initiating ground- or vegetation-disturbing activities for each phase of the Project and document compliance with all pre-Project Conditions of Approval before initiating ground- or vegetation-disturbing activities.	ITP Condition #5.2	Before commencing ground or vegetation disturbing activities of each phase	Permittee	
8	If a Covered Species is injured as a result of Project-related activities, it shall be immediately taken to a DFG-approved wildlife rehabilitation or veterinary facility. The Permittee shall identify the facility prior to the start of ground- or vegetation-disturbing activities. Permittee shall bear any costs associated with the care or treatment of such injured Covered Species. Permittee shall notify the USFWS and DFG immediately unless the incident occurs outside of normal business hours. In that event the USFWS and DFG shall be notified no later than noon on the next business day. Notification to DFG shall be via telephone or e-mail, followed by a written incident report. Notification shall include the date, time, location, and circumstances of the incident and the name of the facility where the animal was taken.	ITP Condition #6.2	Before commencing ground or vegetation disturbing activities Entire Project	Permittee	
9	The Designated Biologist shall perform a pre-construction survey for Covered Species no more then 30 days prior to ground- or vegetation-disturbing activities for each Phase of the Project. Surveys shall cover the proposed construction right-of-way (ROW) with a 200-foot buffer for all areas along the Project length with habitat to support Covered Species. A report documenting the results of the pre-construction surveys shall be submitted to DFG within 30 days after performing any such survey.	ITP Condition #6.3	Before commencing ground or vegetation disturbing activities of each phase	Permittee	
10	If a potential Covered Species den (one that shows evidence of current use or was used in the past) is discovered or a Covered Species is found in an "atypical" den (e.g., a pipe or culvert), a 50-foot buffer shall be established using flagging. If a known Covered Species den is discovered, a buffer of at least 100 feet shall be established using fencing. If a natal den (den in which Covered Species young are reared) is discovered, a buffer of at least 200 feet shall be established using fencing. Buffer zones shall have restricted entry. Permittee shall notify the USFWS and DFG's Regional Representative immediately via telephone or email if any Covered Species dens, natal dens or atypical dens are discovered.	ITP Condition #6.4	Before commencing ground or vegetation disturbing activities Entire Project	Permittee	
11	For dens found within the portion of the Project area to be disturbed, natal dens shall not be excavated until the pups and adults have vacated and then only after consultation with the USFWS and DFG. If, after 4 consecutive days of monitoring with tracking medium or infrared camera the Designated Biologist has determined that a Covered Species is not currently present, known dens may be destroyed. Potential dens (any hole 3 inches or larger) may be excavated without monitoring if a take permit has been obtained from the USFWS, but if the process reveals evidence of use inside then destruction shall cease and the USFWS and DFG shall be notified immediately.	ITP Condition #6.5	Before commencing ground or vegetation disturbing activities of each phase	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
12	Destruction of Covered Species dens shall be accomplished by careful excavation until it is certain no Covered Species are inside. The den should be fully excavated, filled with dirt and compacted to ensure that Covered Species cannot reenter or use the den during the construction period. If at any point during excavation a Covered Species is discovered inside the den, excavation shall cease immediately and monitoring of the den as described above shall be resumed. Destruction of the den shall only be completed when, in the judgment of the Designated Biologist, the animal has escaped from or otherwise vacated the partially destroyed den.	ITP Condition #6.6	Before commencing ground or vegetation disturbing activities of each phase	Permittee	
13	Any Covered Species' den that must be destroyed shall be replaced with an artificial den. This will compensate for the loss of important shelter used by Covered Species for protection, reproduction, and escape from predators. Den design and placement should be determined on a site-specific basis in consultation with the USFWS and DFG.	ITP condition #6.7	Before commencing ground or vegetation disturbing activities of each phase	Permittee	
14	Permittee shall acquire and permanently preserve 1,337.02 acres as total compensation for the loss of Covered Species' habitat for the entire Project. The required acreage is based on factors including an assessment of the quality of the habitat at the Project site and DFG's estimate of the acreage required to provide for adequate biological carrying capacity at a replacement location. Permittee has identified five Phases of the Project. (See Table 1.) Permittee shall complete all compensatory mitigation requirements separately and in their entirety for each Phase of the Project in sequential order prior to commencing ground- or vegetation-disturbing activities for the next Project Phase. As described in Table 2 of this ITP, the required compensation for each Phase of the Project is as follows: Phase 1 is 154.99 acres, Phase 2 is 213.61 acres, Phase 3 is 401.91 acres, Phase 4 is 286.04 acres, and Phase 5 is 280.47 acres; for a total of 1,337.02 acres.	ITP Conditions #7.1, 7.2	Before commencing ground or vegetation disturbing activities of each phase	Permittee	
15	For Project Phases 1 through 3, Permittee intends to mitigate at the Palo Prieto Conservation Bank, which approved DFG on February 26, 2008, as authorized to sell habitat mitigation credits for the Covered Species. Permittee is not authorized to commence ground- or vegetation-disturbing activities associated with the Project until this ITP is effective and the Permittee has complied with ITP Condition of Approval 5.2, including providing written documentation to DFG that Permittee has purchased the required habitat mitigation credits.	ITP Condition #7.3	Before commencing ground or vegetation disturbing activities of each phase	Permittee	
16	For Project Phases 4 and 5, the Permittee shall purchase credits at the Palo Prieto Conservation Bank or another conservation bank approved by DFG in San Luis Obispo County that is authorized to sell habitat mitigation credits for the Covered Species. Permittee shall not commence ground- or vegetation-disturbing activities associated with Project Phases 4 and 5 until the Permittee has complied with ITP Condition of Approval 5.2, including providing written documentation to DFG that Permittee has purchased the required habitat mitigation credits.	ITP Condition #7.4	Before commencing ground or vegetation disturbing activities of each phase	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
DURING CONSTRUCTION					
17	Permittee shall implement dust control measures during Project activities to facilitate visibility for monitoring of the Covered Species by the Designated Biologist.	ITP Condition #4.6	Entire Project	Permittee	
18	Workers shall inspect for Covered Species under vehicles and equipment before vehicles and equipment are moved. If a Covered Species is present, the worker shall wait for the Covered Species to move on its own to a safe location.	ITP Condition #6.1	Entire Project	Permittee	
19	Permittee shall prohibit firearms and domestic dogs from the Project site and site access routes during construction and development of the Project, except those in the possession of authorized security personnel or local, State, or Federal law enforcement officials.	ITP Condition #4.7	Entire Project	Permittee	
20	Permittee shall clearly delineate property boundaries of the Project site with fencing, stakes, or flags and shall similarly delineate the limits of construction areas.	ITP Condition #4.8	Entire Project	Permittee	
21	Permittee shall clearly delineate habitat of the Covered Species on the Project site with posted signs, posting stakes, flags, and/or rope or cord, and place Environmentally Sensitive Area (ESA) fencing as necessary to minimize disturbance of Covered Species' habitat.	ITP Condition #4.9	Entire Project	Permittee	
22	Project-related personnel shall access the Project site during construction and development activities using existing routes and shall not cross Covered Species' habitat outside of and in route to the Project site. Project-related vehicle traffic shall be restricted to established roads, staging and parking areas. Vehicle speeds shall not exceed 20 miles per hour, except when traveling on existing highway, in order to avoid Covered Species on or traversing the roads. If the Permittee determines construction of off-site routes for travel are necessary, Permittee shall contact DFG prior to carrying out any such an activity. DFG may require an amendment to this ITP if additional take of Covered Species may result from Project modification.	ITP Condition #4.10	Entire Project	Permittee	
23	Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the Project site using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked Project boundaries unless specifically provided for in this ITP.	ITP Condition #4.11	Entire Project	Permittee	
24	Permittee shall immediately stop/repair any fuel or hazardous waste leaks or spills on the Project site during construction and development activities and immediately clean up such spills at the time of occurrence. Permittee shall exclude the storage and handling of hazardous materials from the construction zone and shall properly contain and dispose of any unused or leftover hazardous products off-site.	ITP Condition #4.12	Entire Project	Permittee	
25	Permittee shall immediately notify DFG in writing if it determines that it is not in compliance with any Conditions of Approval of this ITP, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods indicated in this ITP and MMRP. Permittee shall report any non-compliance with the ITP during the construction phase of the Project to DFG within 24 hours.	ITP Condition #5.3	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
26	**Monthly Report**: The Designated Biologist shall be on-site daily while construction and/or surface-disturbing activities are taking place to minimize take of the Covered Species; to ensure compliance with all mitigation and avoidance measures; to check all exclusion zones; and to ensure that signs, stakes, and fencing are intact, and that human activities are restricted to outside of these protective zones. Weekly compliance inspections shall be conducted after clearing, grubbing, and grading are completed. These inspections shall be compiled into Monthly Compliance Reports along with a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. Monthly Compliance Reports shall be submitted to DFG's Regional Office at the address listed in the Notices section of this ITP or via e-mail to DFG's Regional Representative. At the time of this ITP's approval, the DFG Regional Representative is Laura Peterson-Diaz (e-mail address lpdiaz@dfg.ca.gov). DFG may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections (see Condition 5.5).	ITP Condition #5.4	Entire Project	Permittee	
27	All observations of Covered Species and their sign, oversight activities, verifications, compliance inspections, surveys, monitoring, and records required by this ITP shall be reported in writing to DFG by the Designated Representative or Designated Biologist. Permittee shall submit reports of these activities to DFG in the next Monthly Compliance Report.	ITP Conditions #5.5	Entire Project	Permittee	
28	All Covered Species sightings confirmed by the Designated Biologist shall include the following documented information: the date, time, and location of each occurrence using GPS technology, the name of the party that actually identified the animal, circumstances of the incident, the general condition and health of each individual, any diagnostic markings, sex, age (juvenile or adult), and actions undertaken and habitat description. The Permittee shall submit this information to the California Natural Diversity Database (CNDDB).	ITP Conditions #5.6	Entire Project	Permittee	
29	**Annual Report**: Permittee shall provide DFG with an Annual Status Report (ASR) no later than January 31 of every year beginning with the issuance of the ITP and continuing until DFG accepts the Final Mitigation Report identified below. Each ASR shall include, at a minimum: 1) a general description of the status of the Project site and construction activities, including actual or projected completion dates, if known; 2) a copy of the table in the MMRP with notes showing the current implementation status of each mitigation measure; 3) a copy of the Monthly Compliance Reports from the previous year; and 4) a description of any site-specific avoidance and minimization measures that were employed and an assessment of the effectiveness of each completed or partially completed mitigation measure in minimizing and compensating for Project impacts.	ITP Condition #5.7	Entire Project	Permittee	
30	Restoration of Project lands where temporary impacts occur shall be monitored and the status of the restoration included in the Annual Reports beginning after completion of Phase I of the Project. Restoration of all areas subject to temporary ground- or vegetation disturbance shall be recontoured, as necessary, covered with stockpiled top-soil, and seeded with native species. Monitoring for 2 years post-construction of each Phase shall insure that noxious weeds do not become dominant in the restored area and that native species found in the vicinity are successfully reintroduced. If the temporary impact lands have not returned to pre-Project conditions two years after completion of each Phase, additional mitigation and an amendment to this ITP might be required.	ITP Condition #5.8	After completion of phase 1 until 2 years post-construction of phase 5	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
31	If a Covered Species is killed by a Project-related activity during construction of the Project or if a Covered Species is otherwise found dead, the Designated Biologist shall be immediately notified and initial notification shall be made to the Sacramento Office of the USFWS at (916) 414-6620, and DFG by calling the DFG Regional Office at (559) 243-4017. The initial notification to the USFWS and DFG shall include information regarding the location, species, number of animals injured or killed, and the DFG ITP Number. Following initial notification, Permittee shall send DFG a written report within 2 calendar days. The report shall include the date and time of the finding or incident, location of the carcass, and if possible provide a photograph, explanation as to cause of death, and any other pertinent information. The Designated Biologist shall collect the carcass, place it in plastic, and keep it on ice or in a freezer until a DFG representative can either collect the specimen or issue alternative instructions.	ITP Condition #5.10	Entire Project	Permittee	
32	If a Covered Species is injured as a result of Project-related activities, it shall be immediately taken to a DFG-approved wildlife rehabilitation or veterinary facility. The Permittee shall identify the facility prior to the start of ground- or vegetation-disturbing activities. Permittee shall bear any costs associated with the care or treatment of such injured Covered Species. Permittee shall notify the USFWS and DFG immediately unless the incident occurs outside of normal business hours. In that event the USFWS and DFG shall be notified no later than noon on the next business day. Notification to DFG shall be via telephone or e-mail, followed by a written incident report. Notification shall include the date, time, location, and circumstances of the incident and the name of the facility where the animal was taken.	ITP Condition #6.2	Entire Project	Permittee	
33	All open holes and trenches within the Project construction boundary shall be inspected at the beginning of the day, middle of the day, and end of the day for trapped animals. To prevent inadvertent entrapment of Covered Species or any other animals during the construction phase of the Project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured Covered Species is discovered, the USFWS and DFG will be notified within one (1) working day of the incident.	ITP Condition #6.8	Entire Project	Permittee	
34	All construction pipe, culverts, or similar structures with a diameter of 7.6 centimeters (3 inches) or greater that are stored at the construction site for one or more overnight periods will be thoroughly inspected for Covered Species before the pipe is subsequently moved, buried, or capped. If a Covered Species is discovered inside a pipe during inspection, that section of pipe shall not be moved until the animal has escaped on its own.	ITP Condition #6.9	Entire Project	Permittee	
35	DFG may issue Permittee a written stop-work order to suspend any activity covered by this ITP for an initial period of up to 25 days to prevent or remedy a violation of ITP conditions (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. Permittee shall comply with the stop-work order immediately upon receipt thereof. DFG may extend a stop-work order under this provision for a period not to exceed 25 additional days, upon written notice to the Permittee. DFG shall commence the formal suspension process, pursuant to California Code of Regulations, Title 14, section 783.7, within five working days of issuing a stop-work order.	ITP	Entire Project	DFG	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
POST-CONSTRUCTION					
36	Upon completion of Project construction, Permittee shall remove from the Project site and properly dispose of all construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.	ITP Condition #4.14	Post-construction	Permittee	
37	**Final Mitigation Report**: No later than 60 days after completion of the Project, including completion of all mitigation measures, Permittee shall provide DFG with a Final Mitigation Report. The Final Mitigation Report shall be prepared by the Designated Biologist and shall include, at a minimum: 1) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; 2) all available information about Project-related incidental take of the Covered Species; 3) information about other Project impacts on the Covered Species; 4) construction dates; 5) an assessment of the effectiveness of the ITP's Conditions of Approval in minimizing and compensating for Project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the Covered Species; and 7) any other pertinent information, including the level of take of the Covered Species associated with the Project.	ITP Condition #5.9	Post-construction	Permittee	
38	DFG accepts the Final Mitigation Report as complete.	ITP Condition #4.15	Post-construction	DFG	