

# State Route 41 Passing Lanes Project

Madera County, California  
06-MAD-41 (PM 11.7/13.6)  
06-0G900  
Project No.: 06-0000-0112

## Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment



State of California Department of Transportation  
and Madera County Transportation Authority

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by the California Department of Transportation under its assumption of responsibility pursuant to 23 U.S. Code 327.

**March 2011**



## **General Information About This Document**

### ***What's in this document?***

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), in cooperation with the Madera County Transportation Authority (MCTA), has prepared this Initial Study/Environmental Assessment (IS/EA), which examines the potential environmental impacts of alternatives being considered for the proposed project in Madera County, California. Caltrans is the lead agency under the National Environmental Policy Act and the California Environmental Quality Act. The document describes why the project is being proposed, alternatives that have been considered for the project, the existing environment that could be affected by the project, the potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

### ***What should you do?***

- Please read this Initial Study/Environmental Assessment. Copies of the technical documents are available upon request. Additional copies of this document are available for review at:

California Department of Transportation  
District Office  
1352 West Olive  
Fresno, CA 93778

Madera Ranchos Branch Library  
37167 Avenue 12, Suite 4C  
Madera, CA 93638

North Fork Branch Library  
32908 Road 222  
North Fork, CA 93643

Oakhurst Branch Library  
49044 Civic Circle Drive  
Oakhurst, CA 93644

- We welcome your comments. If you have any comments regarding the proposed project, send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

Kelly Hobbs, Senior Environmental Planner  
San Joaquin Valley Management Branch  
California Department of Transportation  
2015 East Shields Avenue, Suite 100  
Fresno, CA 93726

- Submit comments via email to: [kelly\\_hobbs@dot.ca.gov](mailto:kelly_hobbs@dot.ca.gov).
- Submit comments by the deadline: June 2, 2011.

### ***What happens next?***

After comments are received from the public and reviewing agencies, Caltrans, as assigned by the Federal Highway Administration, 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 build all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Kelly Hobbs, San Joaquin Valley Management Branch, 2015 East Shields Avenue, Suite 100, Fresno, CA 93726; (559) 243-8222 Voice, or use the California Relay Service TTY number, 1 (800) 735-2929 or dial 711.

The project would construct passing lanes on State Route 41  
north of Road 208 in Madera County from post miles 11.7 to 13.6

**INITIAL STUDY  
with Proposed Mitigated Negative Declaration/  
ENVIRONMENTAL ASSESSMENT**

Submitted Pursuant to: (State) Division 13, California Public Resources Code  
(Federal) 42 U.S. Code 4332(2)(C) and 23 U.S. Code 327

THE STATE OF CALIFORNIA  
Department of Transportation

MADERA COUNTY TRANSPORTATION AUTHORITY  
CEQA Responsible Agency

3/25/11  
Date of Approval

Kirsten Helton  
Kirsten Helton  
Acting Office Chief, Central Region  
Environmental North



# Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

## **Project Description**

The California Department of Transportation (Caltrans) proposes to construct a passing lane in the northbound and southbound directions on State Route 41 from 0.3 mile north of Road 208 to 2.2 miles north of Road 208 in Madera County. The project would also construct 8-foot outside shoulders, a 4-foot soft median barrier, and rumble strips on the outside shoulders and the median. Drainage culverts would be extended to accommodate the passing lanes.

## **Determination**

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

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

The proposed project would have no effect on: noise, vibration, hydrology, regulatory floodplains, wild and scenic rivers, water quality, hazardous materials or wastes, unique paleontological resources, cultural resources, geology or soils, farmland, local emergency services, recreational facilities, population growth, or pedestrian and bicycle facilities in the project vicinity.

In addition, the proposed project would have no significant effect on land use, visual resources, or local or regional air quality.

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

- The biological impacts to the vernal pool fairy shrimp, California tiger salamander, western spadefoot toad, burrowing owl, spiny-sepaled button-celery, and blue oak would be mitigated by compliance with the Biological Assessment and subsequent U.S. Fish and Wildlife Service Biological Opinion.
- The biological impacts to the vernal pool fairy shrimp and California tiger salamander would be mitigated at a 3:1 compensation ratio for permanent impacts and a 1.1:1 compensation ratio for temporary impacts to quality habitat at a location approved by the U.S. Fish and Wildlife Service and California Department of Fish and Game. For permanent impacts to the vernal pool fairy shrimp, a total of 0.45 acre would be acquired. Permanent impacts to California tiger salamander upland habitat and breeding habitat are 65.25 acres and 0.45 acre, respectively, and 20.36 acres would be purchased for temporary impacts to California tiger salamander upland habitat.
- Avoidance and minimization measures would be implemented, such as using Environmentally Sensitive Area fencing (around oak trees, special-status species and wetland areas not being affected), providing worker training, including contract special provisions, and conducting pre-construction surveys.
- Mitigation for impacts to oak trees would be accomplished with preservation of nearby land containing the appropriate blue oak woodland habitat and/or planting new blue oaks in the area.

---

Kirsten Helton  
Acting Office Chief, Central Region  
Environmental North

---

Date



## Summary

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), in cooperation with the Madera County Transportation Authority (MCTA), proposes to construct a passing lane in the northbound and southbound directions on State Route 41 from 0.3 mile north of Road 208 (post mile 11.7) to 2.2 miles north of Road 208 (post mile 13.6) in Madera County.

Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

This segment of State Route 41 is a two-lane conventional highway with few passing opportunities. The project would improve operations and help reduce delays at bottleneck locations. The length of the project is about 2 miles. Two alternatives are being considered: the Build Alternative and the No-Build Alternative.

The Build Alternative would do the following:

- Construct staggered/offset passing lanes in both the northbound and southbound directions. The northbound passing lane would be built from post mile 11.7 to post mile 13.1. The southbound passing lane would be built from post mile 12.1 to 13.3.
- Construct 8-foot outside shoulders in both directions.
- Construct a 4-foot soft median barrier.
- Construct rumble strips on the outside shoulders and the median.
- Extend the existing drainage culverts to accommodate the passing lanes.

The No-Build Alternative would leave the roadway as it is.

The following table summarizes the impacts of the Build Alternative compared to the No-Build Alternative.

**Summary of Major Potential Impacts from Alternatives**

Potential Impact		Build Alternative	No-Build Alternative
<b>Land Use</b>	<b>Consistency with the Madera County General Plan</b>	Consistent	Not consistent
<b>Farmlands/Timberlands</b>		The proposed project area does not contain prime, unique statewide or local important farmland.	No impact
<b>Relocation/Real Property Acquisition</b>		The proposed project would acquire 29.4 acres of new right-of-way of cattle grazing land. Business, housing, or utility relocations are not required.	No impact
<b>Traffic and Transportation/ Pedestrian and Bicycle Facilities</b>		The project would reduce long lines and traffic delays by improving the Level of Service for this segment of State Route 41 to the desired level of "D"; currently it is "E." It would also improve safety by providing more passing opportunities. There would be no impacts to pedestrian or bicycle facilities.	Congestion and passing-related accidents would increase over time.
<b>Visual/Aesthetics</b>		Although about 260 blue oak trees would be removed on both sides of the highway for the length of the project, the removal would open up views of adjacent oaks to the traveling public.	No visual change
<b>Water Quality and Storm Water Runoff</b>		Long-term impacts are not anticipated. Stormwater treatment measures and best management practices would be implemented to minimize impacts to water quality and surface runoff.	No impact
<b>Hazardous Waste/Materials</b>		There are no hazardous waste/materials impacts, but there is potential for aerially deposited lead in the shoulders adjacent to the highway. Special contract provisions would be implemented for worker and public safety.	No impact
<b>Air Quality</b>		There would be no adverse impacts. The project is not considered a Project of Air Quality Concern.	Continued long delays/ traffic congestion.
<b>Natural Communities</b>		About 260 blue oak trees would be affected. Mitigation would be accomplished through preservation of nearby land and/or offsite planting.	No impact
<b>Wetlands and other Waters</b>		The project would directly affect 0.36 acre of potentially jurisdictional wetlands and waters of the United States. Compensatory mitigation is proposed.	No impact
<b>Plant Species</b>		The project would affect 0.55 acre of spiny-sealed button-celery, a special-status plant species, in the	No impact

Summary

Potential Impact	Build Alternative	No-Build Alternative
	project area.	
<b>Animal Species</b>	Ten special-status animal species (vernal pool fairy shrimp, valley elderberry longhorn beetle, California tiger salamander, western spadefoot toad, burrowing owl, Swainson's hawk, pallid bat, western mastiff bat, American badger, and San Joaquin kit fox) have potential habitat within the project area. Avoidance and minimization measures (pre-construction surveys, fencing) would prevent unplanned disturbance or accidental take of species. Impacts to the western spadefoot toad would consist of similar habitat impacts for the vernal pool fairy shrimp and California tiger salamander.	No impact
<b>Threatened and Endangered Species</b>	There would be 0.15 acre of permanent impacts to the vernal pool fairy shrimp as a result of the project. There would be 21.75 acres of permanently affected California tiger salamander upland habitat and 0.15 acre of breeding habitat affected. Temporary impacts of 18.51 acres to California tiger salamander upland habitat would occur. Formal consultation would be conducted for these species. Compensatory mitigation is proposed. Avoidance and minimization measures (pre-construction surveys, fencing) would prevent unplanned disturbance or accidental take of the valley elderberry longhorn beetle and Swainson's hawk.	No impact
<b>Invasive Species</b>	Four invasive species (Italian thistle, yellow star thistle, Russian thistle, and Bermuda grass) were observed in the study area. Measures would be taken to avoid and minimize the spread of these invasive species.	No impact
<b>Construction</b>	Construction is anticipated to take about 280 working days. To minimize disruption to the traveling public and surrounding communities, staged construction would occur so that both lanes of the highway could remain open during construction. Alternate one-way traffic control would occur to move equipment and/or materials from one side of the roadway to the other. The California Highway Patrol would close the highway for a few hours at 15-minute intervals to allow for rock blasting.	No impact



## Table of Contents

Proposed Mitigated Negative Declaration .....	i
Summary .....	iii
Table of Contents .....	vii
List of Figures .....	ix
List of Tables .....	ix
List of Abbreviated Terms .....	x
<b>Chapter 1</b> Proposed Project.....	1
1.1 Introduction .....	1
1.2 Purpose and Need.....	1
1.2.1 Purpose.....	1
1.2.2 Need .....	1
1.3 Alternatives .....	5
1.3.1 Build Alternative.....	5
1.3.2 No-Build Alternative .....	5
1.3.3 Alternatives Considered but Eliminated from Further Discussion .....	6
1.4 Permits and Approvals Needed.....	6
<b>Chapter 2</b> Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures .....	15
2.1 Human Environment .....	16
2.1.1 Land Use .....	16
2.1.1.1 Existing and Future Land Use and Real Property Acquisition.....	16
2.1.1.2 Consistency with State, Regional, and Local Plans.....	17
2.1.2 Traffic and Transportation .....	18
2.1.3 Visual/Aesthetics .....	20
2.2 Physical Environment .....	22
2.2.1 Air Quality .....	22
2.3 Biological Environment .....	31
2.3.1 Natural Communities .....	31
2.3.2 Wetlands and Other Waters .....	34
2.3.3 Plant Species .....	37
2.3.4 Animal Species .....	39
2.3.5 Threatened and Endangered Species .....	44
2.3.6 Invasive Species.....	52
2.4 Construction Impacts.....	53
2.5 Climate Change under the California Environmental Quality Act .....	56
<b>Chapter 3</b> Comments and Coordination.....	69
<b>Chapter 4</b> List of Preparers .....	73
<b>Appendix A</b> California Environmental Quality Act Checklist .....	75
<b>Appendix B</b> Title VI Policy Statement .....	85
<b>Appendix C</b> Minimization and/or Mitigation Summary .....	87
<b>Appendix D</b> USFWS Official Species List .....	95
<b>Appendix E</b> CNDDB Species List.....	103

**Appendix F** CNPS Species List..... 105  
**Appendix G** Vernal Pool Fairy Shrimp Sampling Location Map..... 107  
List of Technical Studies that are Bound Separately ..... 111

## List of Figures

Figure 1-1 Levels of Service.....	2
Figure 1-2 Project Vicinity Map.....	7
Figure 1-3 Project Location Map.....	8
Figure 1-4a Build Alternative.....	9
Figure 1-4b Build Alternative.....	11
Figure 1-4c Build Alternative.....	13
Figure 2-1 Biological Study Area.....	32
Figure 2-2 California Greenhouse Gas Inventory.....	60
Figure 2-3 Outcome of Strategic Growth Plan.....	64

## List of Tables

Summary of Major Potential Impacts from Alternatives.....	iv
Table 1-1 No-Build Level of Service for Peak Hours.....	3
Table 1-2 No-Build Total Vehicle Hours/Day Delay.....	3
Table 1-3 Highway Accident Data from June 1, 2006 to May 31, 2009.....	4
Table 1-4 Type and Number of Accidents.....	4
Table 2-1 Current and Future Traffic Volumes.....	19
Table 2-2 Build Alternative Level of Service for Peak Hours.....	19
Table 2-3 Attainment Status for Madera County.....	27
Table 2-4 Vernal Pool Fairy Shrimp Survey Summary Table.....	47
Table 2-5 Estimated Carbon Dioxide Emissions in Tons per Year for Build and No-Build Alternatives.....	61
Table 2-6 Climate Change Strategies.....	65

## **List of Abbreviated Terms**

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO <sub>2</sub>	carbon dioxide
FHWA	Federal Highway Administration
MCTA	Madera County Transportation Authority
mph	miles per hour
NEPA	National Environmental Policy Act
PM	post mile
USFWS	U.S. Fish and Wildlife Service

# **Chapter 1**      **Proposed Project**

---

## **1.1 Introduction**

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), in cooperation with the Madera County Transportation Authority, proposes to construct passing lanes on State Route 41 from 0.3 mile north of Road 208 to 2.2 miles north of Road 208 in Madera County (see Figures 1-2 and 1-3). This section of State Route 41 is a two-lane rural highway, with outside shoulders either lacking in some spots or varying in width up to 2 feet.

In addition to passing lanes, the project would construct 8-foot outside shoulders, a 4-foot soft median barrier, and rumble strips on the outside shoulders and the median. Drainage culverts would be extended to accommodate the passing lanes.

The project is included in the Madera County Council of Government's financially constrained 2009 Madera County Federal Interim Transportation Improvement Program and the 2007 Regional Transportation Plan. The project would be fully funded from the 2012 State Transportation Improvement Program and Madera County Measure "T" (Local Sales Tax) Program in the 2014-2015 fiscal year.

## **1.2 Purpose and Need**

### **1.2.1 Purpose**

The purpose of this project is to:

- Improve overall traffic flow, travel times, and operations
- Improve safety

### **1.2.2 Need**

Within the project limits, this route is a two-lane highway. During periods of peak traffic use and oncoming traffic, there is a lack of passing opportunities. As a result, faster-moving vehicles are delayed by slow-moving trucks and recreational vehicles. This causes long lines of traffic, also known as traffic queuing or platooning. Due to backed-up traffic, impatient motorists pass at inopportune times.

**Traffic Flow, Travel Times and Traffic Operations**

Commuter, recreational, and freight use on this route results in high traffic volumes during normal weekday peaks as well as on weekends and holidays. Passing opportunities are limited. The existing four-lane highway ends at Avenue 12, some 8.5 miles south of the project. There is one vehicle turnout within the project limits; the next available passing lane is not until Road 200, about 3.5 miles north of the project limits. Long traffic lines/platoons are formed behind slow-moving vehicles, causing substantial congestion and delays. Heavy traffic, mountainous terrain and slow-moving vehicles, and inadequate passing opportunities contribute to a poor Level of Service performance.

Level of Service is a term that describes traffic flow on highways and ranges from “A” to “F.” Level “A” signifies short delays and free-flowing traffic, and “F” signifies the most congested traffic conditions (see Figure 1-1). Level of Service is determined by travel speed, freedom to maneuver, and proximity to other vehicles.

<b>LEVELS OF SERVICE</b> for Two-Lane Highways			
Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
<b>A</b>		55+	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. <b>No delays</b>
<b>B</b>		50	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. <b>No delays</b>
<b>C</b>		45	Stable traffic flow, but less freedom to select speed, change lanes or pass. <b>Minimal delays</b>
<b>D</b>		40	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. <b>Minimal delays</b>
<b>E</b>		35	Unstable traffic flow. Speeds change quickly and maneuverability is low. <b>Significant delays</b>
<b>F</b>			Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. <b>Considerable delays</b>

**Figure 1-1 Levels of Service**

The table below shows the current and projected Level of Service for the No-Build Alternative.

**Table 1-1 No-Build Level of Service for Peak Hours**

Year	Morning Peak (Northbound)	Morning Peak (Southbound)	Afternoon Peak (Northbound)	Afternoon Peak (Southbound)
2009	C	D	E	D
2016	D	E	E	E
2026	E	F	F	F
2036	F	F	F	F

*Source: Department of Transportation Traffic Department*

This segment of State Route 41 is currently operating below the Caltrans target Level of Service for this area. On average, the current Level of Service is “E”; the desired level is “D.” As traffic volumes increase, traffic delays will increase (as shown in Table 1-2) and the Level of Service will continue to decline.

**Table 1-2 No-Build Total Vehicle Hours/Day Delay**

Year	Morning Peak (Northbound)	Morning Peak (Southbound)	Afternoon Peak (Northbound)	Afternoon Peak (Southbound)	Total
2009	3.5	8.5	12.0	7.6	31.7
2016	6.2	14.7	21.7	14.0	56.6
2026	15.4	34.5	55.9	36.1	141.9
2036	40.4	90.6	165.2	106.6	402.8

### **Safety**

The accident history for this highway segment for the most recent three-year study period (June 1, 2006 to May 31, 2009) reported a total of 26 accidents. Table 1-3 compares actual accident rates (accidents per millions vehicles) within the project limits to the average accident rates on similar roadways throughout California. The Fatal Plus Injury and Total Accident rates are lower than the statewide averages with comparable traffic volumes. However, the Actual Fatal accident rate is twice the statewide average rate.

**Table 1-3 Highway Accident Data from June 1, 2006 to May 31, 2009**

Highway Segment	Actual			State Average		
	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
Madera 41 Post Miles 11.71/13.53	0.054	0.41	0.71	0.028	0.44	0.97

Twenty-six accidents occurred along this segment within the project limits (2-Fatal, 13-Injury, and 11-Property Damage Only). The types and number of accidents are shown in Table 1-4:

**Table 1-4 Type and Number of Accidents**

Primary Collision Factor	Type of Accident						
	Head-On	Sideswipe	Rear-End	Broad-side	Hit Object	Overturn	Other
Influence of Alcohol	1	1					
Improper Turn	1				7	1	
Speeding		1	2			1	
Other Violation	2	2		1	3		
Other Than Driver		1			1		1
Total	4	5	2	1	11	2	1

The types of collisions for fatal accidents were “hit object” and “head-on.” One fatal accident occurred when a driver was traveling at a high speed, lost control, veered off the east roadway edge, went down the dirt embankment, and struck a large boulder. In the other fatal accident, a northbound vehicle crossed into the southbound lane and struck two southbound vehicles head-on.

Without the highway improvements, long lines of backed-up traffic and lack of opportunities to pass would continue.

## 1.3 Alternatives

The following section describes the proposed action and the design alternatives that were developed by a multi-disciplinary team, including Caltrans staff and Madera County Transportation Authority staff, to achieve the project purpose and need while avoiding or minimizing environmental impacts. Under consideration are a Build Alternative (see Figures 1-4a, 1-4b and 1-4c) and a No-Build Alternative.

### 1.3.1 Build Alternative

Climbing and passing lanes are most effective on uphill grades and curving alignments where the speed differences among cars and trucks are substantial. The Build Alternative would consist of:

- Constructing staggered passing lanes in the northbound and southbound directions so that both lanes are on a crest/uphill. The northbound passing lane would be constructed from post miles 11.7 to 13.1. The southbound passing lane would be constructed from post miles 12.1 to 13.3.
- Constructing 8-foot outside shoulders in both directions.
- Constructing a 4-foot soft median barrier.
- Constructing rumble strips on the outside shoulders and the median.
- Extending the existing drainage culverts to accommodate the passing lanes.

New right-of-way would be acquired for this project. Nine parcels would be affected. The total area required is approximately 29.4 acres of cattle grazing land. This alternative would cost \$10 million (\$8.2 million for construction and \$1.8 million for right-of-way). It would be funded for construction from the Local Measure “T” Program in the 2014-2015 fiscal year. Construction is anticipated to begin in 2015, with the lanes open to traffic in 2016.

### 1.3.2 No-Build Alternative

The No-Build Alternative would leave this section of State Route 41 in its present condition. The Level of Service and passing opportunities would continue to decline. This alternative would not meet the purpose and need of the project.

### 1.3.3 Alternatives Considered but Eliminated from Further Discussion

An alternative that would construct symmetrical passing lanes (from post miles 11.7 to 13.2) in both the northbound and southbound directions was initially considered. The proposed design was rejected because only the northbound side would be on a climbing lane (going uphill), allowing vehicles to pass slower traffic. The southbound lane would be entirely downhill. When a passing lane is located on a downhill section, slower-moving vehicles accelerate and faster-moving vehicles have to achieve greater speeds than necessary. Passing opportunities would be more difficult and occur at high speeds. The purpose and need of the project would not be met.

## 1.4 Permits and Approvals Needed

The following permits, reviews, and approvals would be required:

Agency	Permit/Approval	Status
California Regional Water Quality Control Board	Section 401 Certification for waste discharge	To be completed in the Plans, Specifications and Estimates Phase
U.S. Army Corps of Engineers	Section 404 Nationwide Permit for filling or dredging waters of the U.S.	To be completed in the Plans, Specifications and Estimates Phase
U.S. Fish and Wildlife Service	Section 7 Consultation and Biological Opinion for Threatened and Endangered Species	Anticipated in September 2011
California Department of Fish and Game	Section 2080.1 Determination for Threatened and Endangered Species  Section 1602 Agreement for streambed alteration.	To be completed in the Plans, Specifications and Estimates Phase

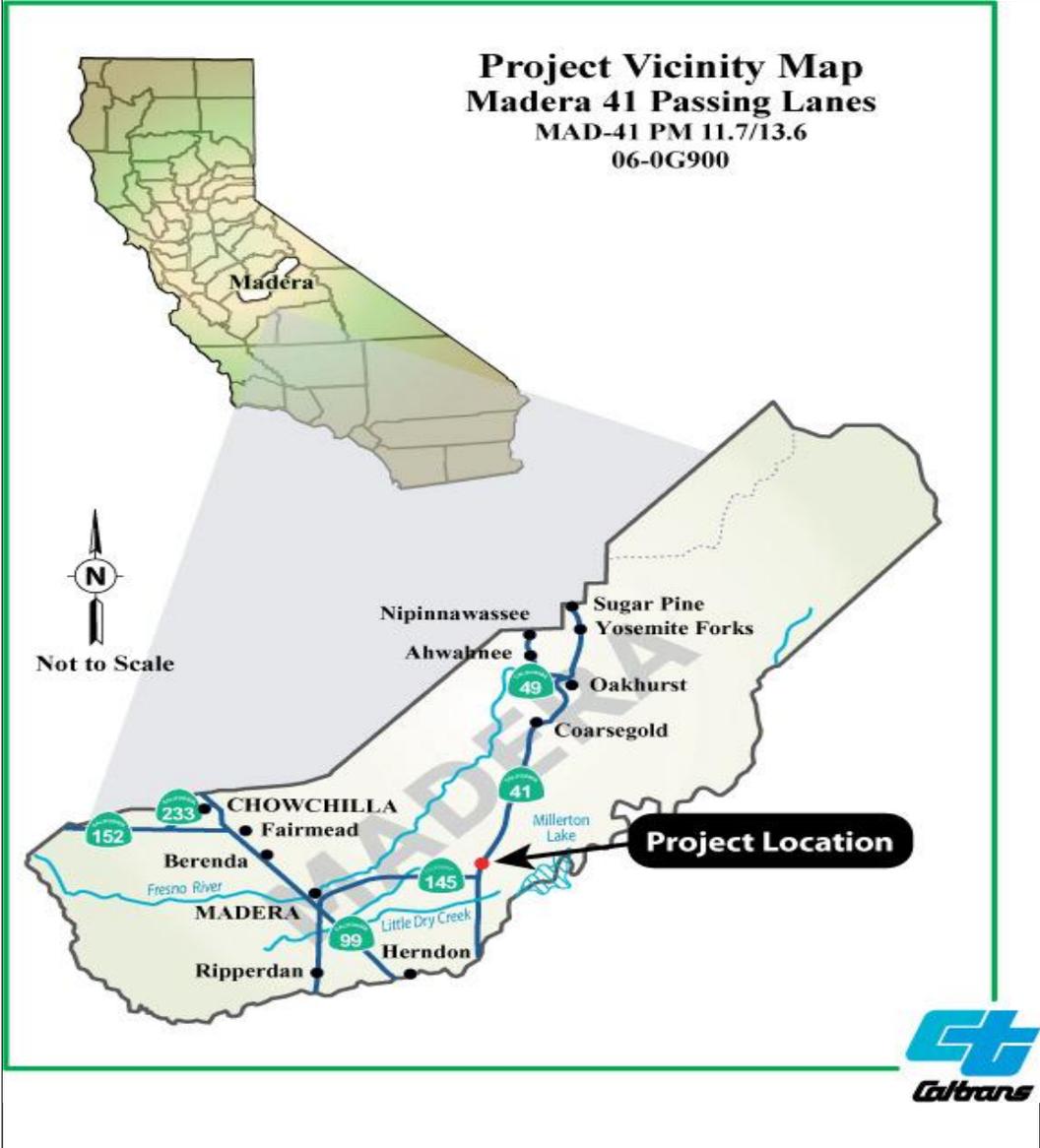


Figure 1-2 Project Vicinity Map

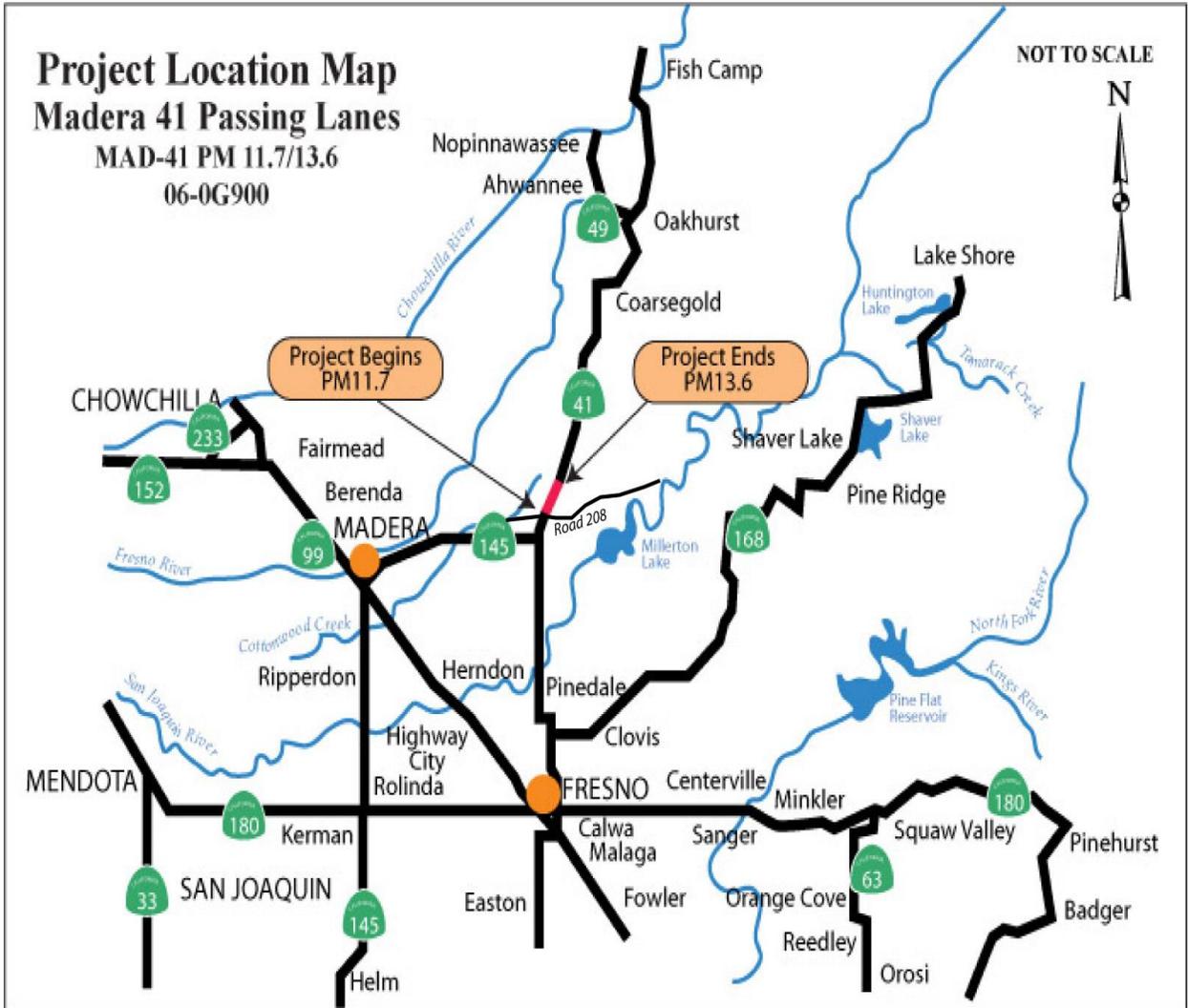


Figure 1-3 Project Location Map

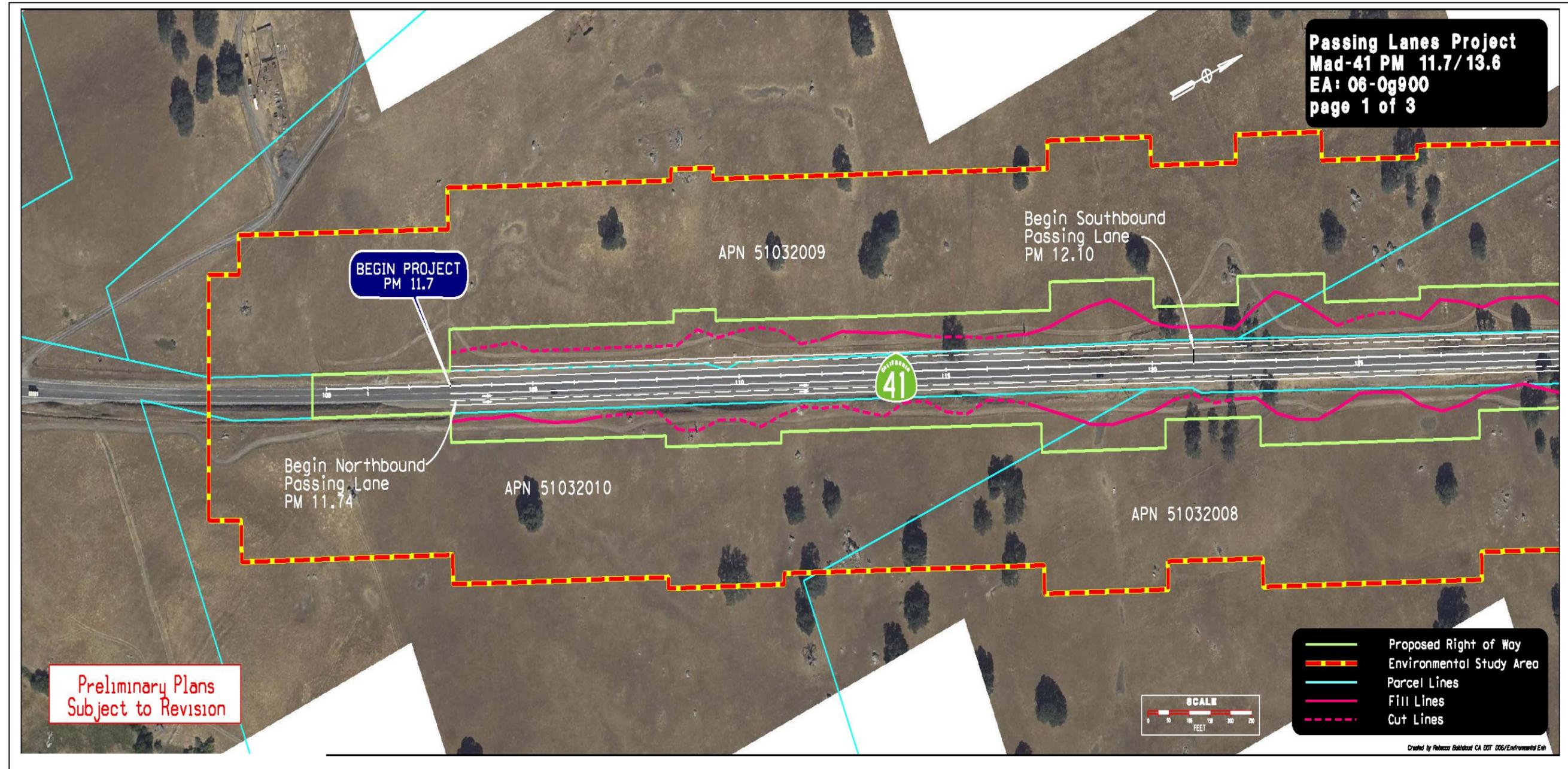


Figure 1-4a Build Alternative



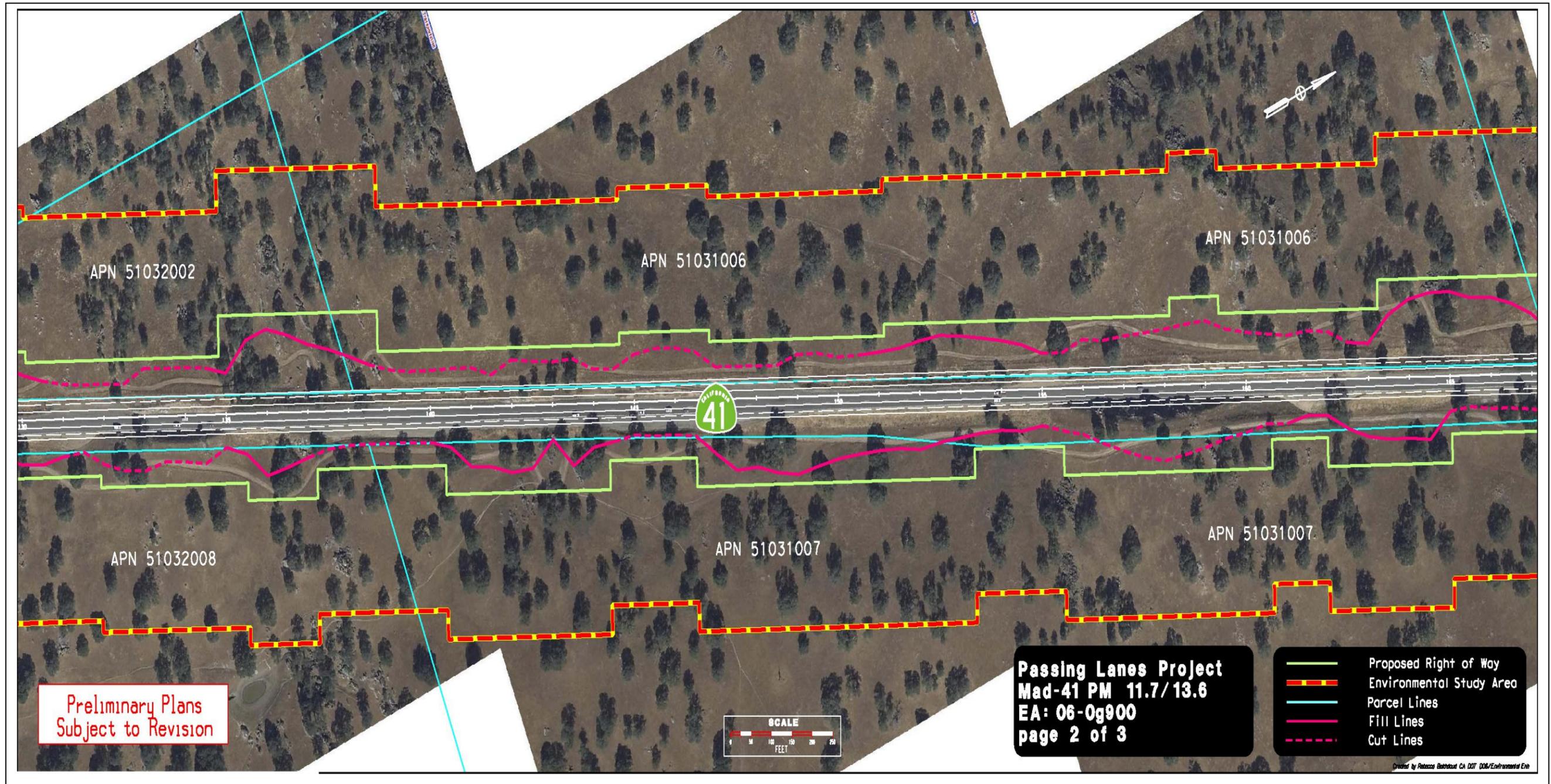


Figure 1-4b Build Alternative



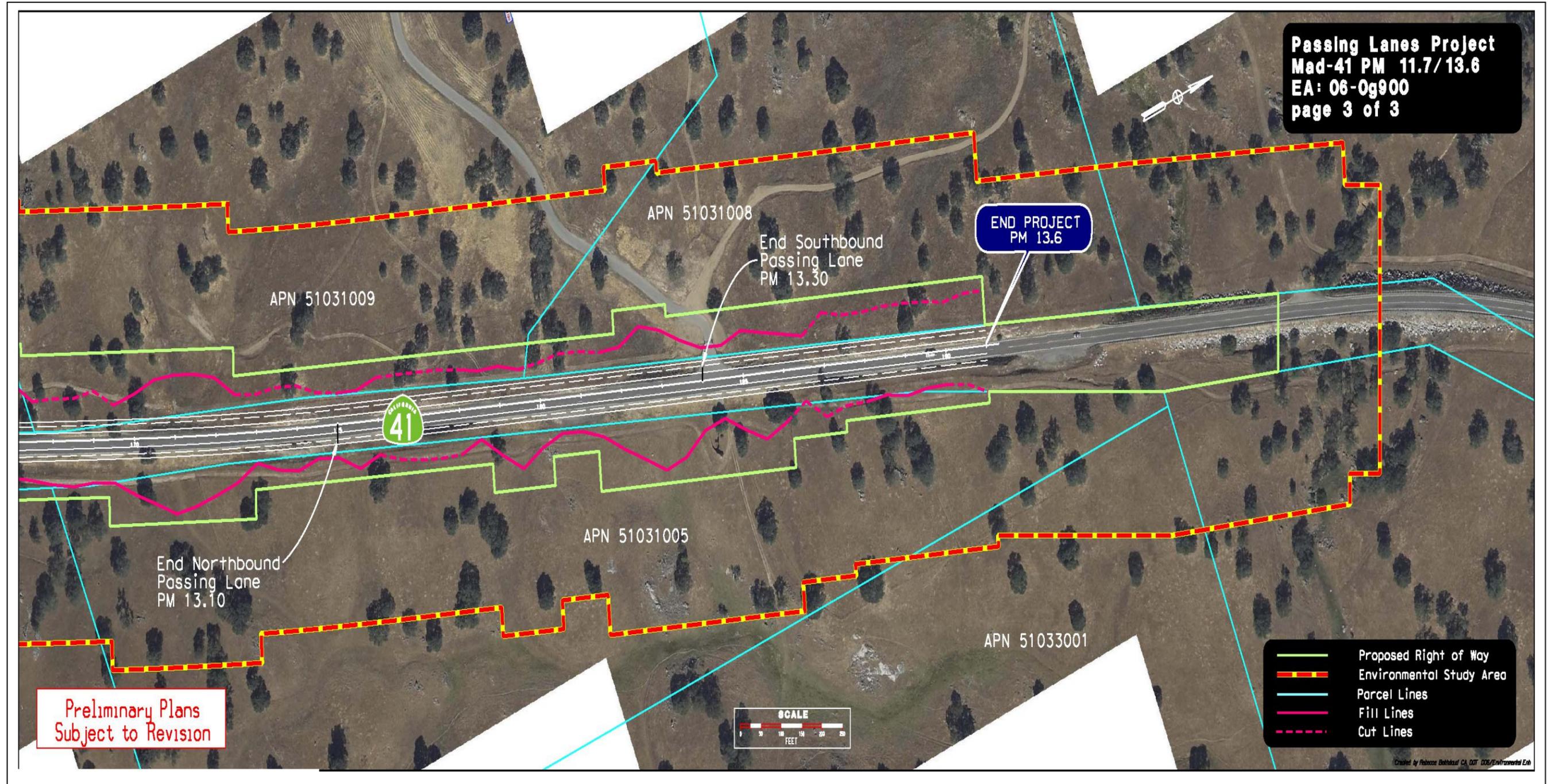


Figure 1-4c Build Alternative



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

---

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts from each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

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

- **Growth**—This project would provide operational improvements, which do not increase capacity and would not result in residential or commercial growth (Project Study Report, March 2008).
- **Farmland and Timber Resources**—The proposed project would convert some farmland to highway use. To determine the relative value of farmland to be converted, a Farmland Conversion Impact Rating Form was submitted to Natural Resources Conservation Service (NRCS) on January 12, 2011. The Natural Resources Conservation Service determined that the proposed project does not contain prime, unique statewide or local importance farmland (NRCS, February 2011).
- **Community Impacts**—This project does not divide an existing community, require relocations or impact a low income or minority community (Field visit, August 2009).
- **Utilities/Emergency Services**—The proposed project would not affect utilities. Emergency access would be provided at all times during construction (Project Study Report, March 2008).
- **Cultural Resources**—There are no cultural resources within the project Area of Potential Effects (Historic Property Survey Report/Archaeological Survey Report, January 2010).

- Hydrology and Floodplain—This project does not cross a water body and does not encroach on the 500-year floodplain; therefore, local hydrology or floodplain would not be affected (Floodplain Memo, October 2007).
- Water Quality and Storm Water Runoff—There are no named water bodies within the project limits. The project involves extending existing drainage culverts. Long-term impacts on water quality or storm water runoff are not anticipated (Water Quality Assessment Report, June 2009; Storm Water Data Report, December 2010).
- Geology/Soils/Seismic/Topography—There are no impacts to soils or geological resources. There are no faults identified within project boundaries (Madera County General Plan Update, September 1993).
- Paleontology—Geology in the project area is categorized as having “no sensitivity” for paleontological resources. Impacts to paleontology as a result of the project are not anticipated (Paleontological Resources Checklist, December 2007).
- Hazardous Waste or Materials—Statistical analysis of soil samples taken in the area indicates that although aerially deposited lead is present, levels are well below regulatory requirements for special handling or disposal. There is low risk to encounter hazardous waste on the project (Hazardous Waste Scoping Document, October 2007).
- Noise and Vibration—The project would not affect noise or vibration. There are noise receptors (homes) in the project area, but the rural residences sit far back from the right-of-way and would not be affected by a change in noise levels (Noise Study Report, March 2011).

## **2.1 Human Environment**

### **2.1.1 Land Use**

#### **2.1.1.1 Existing and Future Land Use and Real Property Acquisition**

##### ***Affected Environment***

The project area is in rural Madera County between Fresno and Coarsegold. Land use in the area is designated as rural and agricultural. Land is used primarily for cattle grazing. There are rural residences at the north end of the project on the southbound side and at the southwest end of the project.

### ***Environmental Consequences***

The project would acquire an area of about 29.4 acres within the project length of about 2 miles. Right-of-way would be acquired from nine parcels on the east and west sides of the existing highway. Right-of-way requirements vary from 70 feet to 150 feet from the existing right-of-way line to the proposed right-of-way line. The parcels are zoned as agriculture/grazing land. The project design and conversion of 29.4 acres to transportation use would not conflict with current land use in the area.

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

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

#### **2.1.1.2 Consistency with State, Regional, and Local Plans**

The Madera County Transportation Commission is the Regional Transportation Planning Agency and the designated Metropolitan Planning Organization for Madera County. The commission monitors local and other regional transportation plans, projects and programs for consistency with regional plans. It is responsible for the development and adoption of the Regional Transportation Plan and Transportation Improvement Program as required by state and federal laws.

### ***Affected Environment***

The project is within the jurisdictional boundaries of the Madera County Transportation Commission. The project would be fully funded from the Madera County Measure “T” Funds (Local Sales Tax). The Madera County Transportation Authority was established to administer the proceeds of Measure “T.” In November 2006, Madera County voters approved Measure “T,” a half-cent sales tax for local transportation projects. Measure “T” is projected to yield approximately \$213 million in transportation revenues for 20 years. The proposed project is part of the “Commute Corridors/Farm to Market Program (Regional Transportation Program) of the Measure “T” Investment Plan, with a budget of \$108.6 million or 51% of the revenue. The plan authorizes major new projects to:

- Improve freeway interchanges.
- Add additional lanes.
- Increase safety as determined by local jurisdictions.
- Improve and reconstruct major commute corridors.

These projects provide for the movement of goods, services, and people throughout Madera County.

### ***Environmental Consequences***

The Madera County Transportation Commission has listed the proposed project as a Measure “T” project programmed in the State Transportation Improvement Plan.

The project is consistent with the General Plan in that it accommodates the anticipated traffic volume increases. Therefore, the proposed project is consistent with state, federal, and local plans.

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

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

## **2.1.2 Traffic and Transportation**

### ***Affected Environment***

Information from this section is from the *Draft Project Report* (March 2011) and the *Traffic Operational Analysis Memo* (March 2011).

The project sits in a mostly rural area of Madera County. State Route 41 is a major recreational, tourist, commuter, and economically vital route. Travel demand is likely to increase as the population grows. Adding passing lanes in both the northbound and southbound directions would improve traffic operations and traffic flow by providing passing opportunities and reducing vehicle delay. The passing lanes would be staggered so that both lanes would be on a crest/uphill, allowing more vehicles the opportunity to pass.

### ***Environmental Consequences***

Current and future traffic data for this segment of State Route 41 is shown in the following table. This traffic data was obtained from the Caltrans Office of Transportation Planning.

**Table 2-1 Current and Future Traffic Volumes**

Volume	2008	2014	2024	2034
<b>Annual Average Daily Traffic All Vehicles</b>	18,500	22,000	30,500	42,000
<b>Annual Average Daily Traffic Diesel Trucks (9.67%)</b>	1,789	2,127	2,949	4,061

Level of Service in the table below reflects increased passing opportunities and smoother traffic operations provided by the improvements. With the passing lanes, the Level of Service is anticipated to improve as indicated in Table 2-2. The Level of Service would diminish as future traffic volumes increase, but would still not achieve the level of “F” should the project not be built (see Table 1-1, Chapter 1 for the No-Build Alternative).

**Table 2-2 Build Alternative Level of Service for Peak Hours**

Year	Morning Peak (Northbound)	Morning Peak (Southbound)	Afternoon Peak (Northbound)	Afternoon Peak (Southbound)
<b>2016</b>	C	C	D	D
<b>2026</b>	D	D	E	E
<b>2036</b>	E	E	E	E

*Source: Department of Transportation Traffic Department*

Improved traffic operations and traffic flow would extend beyond the proposed limits with the construction of passing lanes. Based on Highway Capacity Manual estimates, lines of traffic do not form for an additional 3.6 miles after each passing lane and average travel speeds improve 1.7 miles after each passing lane.

Traffic delays would decrease with the addition of the passing lanes. As traffic volumes increase in future years, traffic conditions would worsen, but the amount of time saved would still increase.

The project would provide passing lanes, reducing long traffic lines and delays by allowing backed-up traffic to pass, thus increasing the Level of Service. The project would also reduce the potential for passing-related accidents.

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

Because the operational improvements would generally be beneficial to the traveling public, avoidance, minimization, and/or mitigation measures are not proposed.

### **2.1.3 Visual/Aesthetics**

#### ***Regulatory Setting***

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

Likewise, the California Environmental Quality Act 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.” (California Public Resources Code, Section 21001[b]).

#### ***Affected Environment***

Information in this section is from the *Visual Impact Assessment-Minor Analysis* (March 2010) and is consistent with the Federal Highway Administration’s manual, *Visual Impact Assessments for Highway Projects* (March 1981). This project qualifies as a Minor Analysis per the manual’s checklist based on factors, such as limited political controversy, minor alteration/limited change of visual environment, no significant cumulative impacts, one landscape unit, no impacts or very little impacts to scenic resources.

State Route 41 is a major recreational, tourist and commuter route that is economically vital to the region. The project is in a rural environment between the San Joaquin Valley floor and the Sierra Nevada foothills. The area is predominantly open space with cattle grazing land. The aesthetics of this corridor provide scenic views, but the roadway is not a designated scenic highway.

A Landscape Unit is a typical view that may be regionally specific and can be thought of as an outdoor room that exhibits a distinct visual character. Landscape Units provide a framework for comparison of visual effects of highway construction projects. The proposed project area can be identified by one essential Landscape Unit—the Valley Rural Landscape, which is characterized by very sparse residential development, rolling hills, oak woodlands, rock outcroppings, and grasses.

Although the area topography consists of rolling hills, the horizontal alignment of this segment of the route is generally straight with few curves. The vertical structure and the varying heights of the existing trees contrast with the rolling hills, accentuating the scale of the trees, and provide diversity to the visual uniformity of the flat landform. The oak trees do not screen any objectionable views, but they provide visual interest in an area where there is sparse highway planting. Additionally, the oak trees visually soften the strong line created by the highway by blending it with its rural environment.

### ***Environmental Consequences***

The project would remove about 260 large existing native blue oak trees. The oaks would be removed from both sides of the highway within the proposed right-of-way area that varies from 70 feet to 150 feet. Removal of the existing oaks would open up views of many other oaks in the immediate area. Four rock outcroppings and one snag or hitched dead tree are proposed for removal as a result of this project. The visual impact is expected to be minimal and would not likely adversely affect the viewer's response.

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

All areas disturbed during construction would receive erosion control.

Mature vegetation would be preserved where possible by minimizing disturbance and protecting the existing vegetation.

Any disturbed areas that would not be paved as part of the proposed project would receive erosion control and storm water runoff control measures.

The maximum recommended side slopes are 1:2, with transitions to 1:4 side slopes as needed. The newly built slopes should be designed to aesthetically blend with the surrounding landscape. To comply with the Highway Design Manual and the National Pollutants Discharge Elimination System Storm Water Permit, the slope

design would require coordination and written approval from the appropriate qualified staff.

Due to minimal changes in the visual resources, mitigation is not required for visual impacts. Refer to Section 2.3.1, Natural Communities, for biological mitigation and minimization measures for affected native oaks.

## **2.2 Physical Environment**

### **2.2.1 Air Quality**

#### ***Regulatory Setting***

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. Standards have been established for six criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM), lead (Pb), and sulfur dioxide (SO<sub>2</sub>).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional-level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), and particulate matter (PM). California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the Regional Transportation Plan, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the Madera County Transportation Commission and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation

Plan is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the Regional Transportation Plan, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires “hot-spot” analysis if an area is “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter. A region is a “nonattainment” area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called “maintenance” areas. “Hot-spot” analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for National Environmental Policy Act purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the CO standard to be violated, and in “nonattainment” areas the project must not cause any increase in the number and severity of violations. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

### ***Affected Environment***

Information in this section is from the *Air Quality Study Report* (July 2010).

The project sits within the San Joaquin Valley Air Basin. The San Joaquin Valley Unified Air Pollution Control District is the regulatory agency ensuring compliance with federal and state ambient air quality standards in the basin.

This air basin is a well-defined climatic region, primarily because of the topographic barriers (foothills and mountains) that form distinct boundaries on three sides of the basin. The mountain ranges direct air circulation and dispersion patterns.

Temperature inversions can trap air within the valley, thereby preventing the vertical dispersal of air pollutants. The local climate can also contribute to air quality problems.

Madera County is currently designated as a non-attainment area for state and federal PM<sub>2.5</sub> and ozone. For PM<sub>10</sub>, Madera County has non-attainment status for the state and attainment for federal. Table 2-3 summarizes the federal and state attainment status of the project area.

## ***Environmental Consequences***

### ***Regional Air Quality Conformity***

The project is fully funded and is in the 2007 Madera County Association of Government's Regional Transportation Plan, which was found to conform by the Madera County Association of Government's Policy Board on May 21, 2007. The Federal Highway Administration and Federal Transportation Authority adopted the air quality conformity finding on October 2, 2007.

The project is also included in Madera County Council of Government's financially constrained 2009 Madera County Federal Interim Transportation Improvement Program. The Madera County Association of Government's 2009 Interim Federal Transportation Improvement Program was found to conform by Federal Highway Administration and Federal Transportation Authority on February 27, 2009. The design concept and scope of the proposed project is consistent with the project description in the 2007 Regional Transportation Plan, the 2009 Interim Regional Transportation Improvement Program and the assumptions in the Madera County Association of Government's regional emissions analysis.

### ***Project-Level Conformity***

A project located in a non-attainment or maintenance area for a given pollutant requires additional air quality analysis and reduction measures for that pollutant.

Project-level conformity is demonstrated by showing that the proposed project would not cause the local area to exceed carbon monoxide and/or PM<sub>10</sub> standards, and that it would not interfere with "timely implementation" of Transportation Control Measures called out in the March 10, 2006 final conformity rule. The final rule has the following key elements:

This rule requires that PM<sub>2.5</sub> hot-spot analyses be performed only for new transportation projects with significant diesel traffic. Examples of such "projects of air quality concern" include intermodal freight or bus terminals, and major highway projects and congested intersections involving significant diesel traffic. No hot-spot analyses will be required for most projects in PM<sub>2.5</sub> areas because most projects are not an air quality concern. This final rule also streamlines existing PM<sub>10</sub> hot-spot requirements in a similar way.

The streamlined approach in this final rule will ensure that transportation and air quality agencies in PM<sub>2.5</sub> and PM<sub>10</sub> areas use their resources efficiently, while achieving clean air goals.

In both PM<sub>2.5</sub> and PM<sub>10</sub> areas, a quantitative hot-spot analysis is not required until the Environmental Protection Agency issues a new motor vehicles emissions model capable of estimating local emissions as well as future hot-spot modeling guidance. Qualitative analyses will apply in the interim.

This rule extends an existing flexibility by allowing the U.S. Department of Transportation to make “categorical hot-spot findings,” which waive PM<sub>2.5</sub> and PM<sub>10</sub> hot-spot reviews for categories of projects where modeling shows that there is no air quality concern.

A qualitative hot-spot analysis is most frequently done for carbon monoxide and particulate matter. Currently, there is no hot-spot for ozone, which is considered a regional pollutant. A PM<sub>10</sub> and PM<sub>2.5</sub> hot-spot analysis was conducted and submitted to the Model Coordinating Committee in December 2009 for Interagency Consultation as “Not a Project of Air Quality Concern.” The committee concurred that the proposed project is “Not a Project of Air Quality Concern” and that the project improvements would not result in any violation of federal standards.

Data from the Fresno-First Street air quality monitor was reviewed for this project. This monitor records data for carbon monoxide, PM<sub>10</sub>, PM<sub>2.5</sub>, and ozone. It is the closest monitor to the project area and is about 10 miles south of the project site.

### *Mobile Source Air Toxics*

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards, the Environmental Protection Agency also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (such as airplanes), area sources (such as dry cleaners), and stationary sources (for example, factories or refineries).

Mobile Source Air Toxics are a subset of the 188 air toxics, also known as hazardous air pollutants, defined by the Clean Air Act. Mobile Source Air Toxics are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete

combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The Environmental Protection Agency is the lead federal agency for administering the Clean Air Act and its amendments and has specific statutory obligations with respect to hazardous air pollutants and Mobile Source Air Toxics. The Environmental Protection Agency is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. Specific substances found in the environment and their potential to cause human health effects, including non-cancerous and cancerous effects, are compiled into reports/databases. Six main compounds with significant contributions from mobile sources are among the national and regional-scale cancer risk drivers: diesel PM, benzene, 1, 3-butadiene, acetaldehyde, acrolein, and formaldehyde.

The Federal Highway Administration issued updated interim guidance on September 29, 2009 for analysis in National Environmental Policy Act documents. This project falls into the category of a “project with low potential Mobile Source Air Toxics effects.” Because the proposed project would add passing lanes, it is expected there would be no appreciable difference in overall mobile source air toxics emissions. According to the Air Resources Board’s EMFAC 2007 emissions model, emissions of all of the priority mobile source air toxics decrease as speed increases, up to about 50 miles per hour. Mobile Source Air Toxics emissions may be slightly reduced in the project area as faster-moving vehicles move around slower vehicles that were causing the backed-up traffic.

**Table 2-3 Attainment Status for Madera County**

Pollutant	Averaging Time	State Standard	Federal Standard	State Status	Federal Status	Health and Atmospheric Effects	Typical Sources
Ozone (O <sub>3</sub> ) <sup>a</sup>	1 hour 8 hours	0.09 ppm 0.070 ppm	<sup>b</sup> 0.075 ppm	Moderate non-attainment Non-attainment	Non-Attainment	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include a number of known toxic air contaminants.	Low-altitude ozone is almost entirely formed from reactive organic gases (ROG) and nitrogen oxides (NO <sub>x</sub> ) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes. Biologically produced ROG may also contribute.
Carbon Monoxide (CO)	1 hour 8 hours	20 ppm 9.0 ppm <sup>c</sup> 6 ppm	35 ppm 9 ppm –	Attainment	Attainment	Asphyxiant. CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen.	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.
Respirable Particulate Matter (PM <sub>10</sub> ) <sup>a</sup>	24 hours Annual	50 µg/m <sup>3</sup> 20 µg/m <sup>3</sup>	150 µg/m <sup>3</sup> –	Non-attainment	Attainment	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and	Dust- and fume-producing industrial and agricultural operations; combustion smoke;

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

Pollutant	Averaging Time	State Standard	Federal Standard	State Status	Federal Status	Health and Atmospheric Effects	Typical Sources
						mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM10.	atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>a</sup>	24 hours Annual	– 12 $\mu\text{g}/\text{m}^3$	35 $\mu\text{g}/\text{m}^3$ 15 $\mu\text{g}/\text{m}^3$	Non-Attainment	Non-Attainment	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – considered a toxic air contaminant – is in the PM <sub>2.5</sub> size range. Many aerosol and solid compounds are part of PM <sub>2.5</sub> .	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO <sub>x</sub> , sulfur oxides (SO <sub>x</sub> ), ammonia, and ROG.
Nitrogen Dioxide (NO <sub>2</sub> )	1 hour Annual	0.18 $\text{ppm}$ 0.030 $\text{ppm}$	– 0.053 $\text{ppm}$	Attainment	Attainment/ Unclassified	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain.	Motor vehicles and other mobile sources; refineries; industrial operations.
Sulfur Dioxide (SO <sub>2</sub> )	1 hour 3 hours 24 hours Annual	0.25 $\text{ppm}$ – 0.04 $\text{ppm}$ –	– 0.5 $\text{ppm}$ 0.14 $\text{ppm}$ 0.030 $\text{ppm}$	Attainment	Unclassified	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.

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

Pollutant	Averaging Time	State Standard	Federal Standard	State Status	Federal Status	Health and Atmospheric Effects	Typical Sources
Lead (Pb) <sup>d</sup>	Monthly Quarterly	1.5 $\mu\text{g}/\text{m}^3$ –	– 1.5 $\mu\text{g}/\text{m}^3$	Attainment	NA	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also considered a toxic air contaminant.	Primary: lead-based industrial process like battery production and smelters. Past: lead paint, leaded gasoline. Moderate to high levels of aerially deposited lead from gasoline may still be present in soils along major roads, and can be a problem if large amounts of soil are disturbed.

Sources: California Air Resources Board Ambient Air Quality Standards chart, 02/16/2010 (<http://www.arb.ca.gov/aqs/aaqs2.pdf>)  
Sonoma-Marín Area Rail Transit Draft Air Pollutant Standards and Effects table, November 2005, page 3-52.  
U.S. EPA and California Air Resources Board air toxics websites, 05/17/2006

Notes: ppm = parts per million;  $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter

<sup>a</sup> Annual PM10 NAAQS revoked October 2006; was 50  $\mu\text{g}/\text{m}^3$ . 24-hr. PM2.5 NAAQS tightened October 2006; was 65  $\mu\text{g}/\text{m}^3$ .

<sup>b</sup> [12/22/2006 Federal court decision](#) may affect applicability of Federal 1-hour ozone standard. Prior to 6/2005, the 1-hour standard was 0.12 ppm. Case is still in litigation.

<sup>c</sup> Rounding to an integer value is not allowed for the State 8-hour CO standard. A violation occurs at or above 9.05 ppm.

<sup>d</sup> The ARB has identified lead, vinyl chloride, and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM10 and, in larger proportion, PM2.5. Both the ARB and U.S. EPA have identified various organic compounds that are precursors to ozone and PM2.5 as toxic air contaminants. There is no threshold level of exposure for adverse health effect determined for toxic air contaminants, and control measures may apply at ambient concentrations below any criteria levels specified for these pollutants or the general categories of pollutants to which they belong.

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

Adverse impacts are not anticipated for criteria pollutants. Therefore, avoidance, minimization or mitigation measures are not proposed.

Caltrans Standard Specifications pertaining to dust control requirements are a required part of all construction contracts and should effectively reduce and control construction effects on air quality. The provisions of Caltrans Standard Specification, Section 7-1.01F “Air Pollution Control” and Section 10 “Dust Control,” require the contractor to comply with the San Joaquin Unified Air Pollution Control District’s rules, ordinances, and regulations. Additional dust control measures are discussed in Section 2.4, Construction Impacts.

Climate change is analyzed later in Chapter 2 under “Climate Change (CEQA).” Neither the Environmental Protection Agency nor the Federal Highway Administration has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on the Federal Highway Administration’s climate change website (<http://www.fhwa.dot.gov/hep/climate/index.htm>), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery.

Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the California Environmental Quality Act chapter of this environmental document and may be used to inform the National Environmental Policy Act decision. The four strategies set forth by the Federal Highway Administration to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

## 2.3 Biological Environment

### 2.3.1 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors 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 in Threatened and Endangered Species, Section 2.3.5. Wetlands and other waters are discussed in Section 2.3.2.

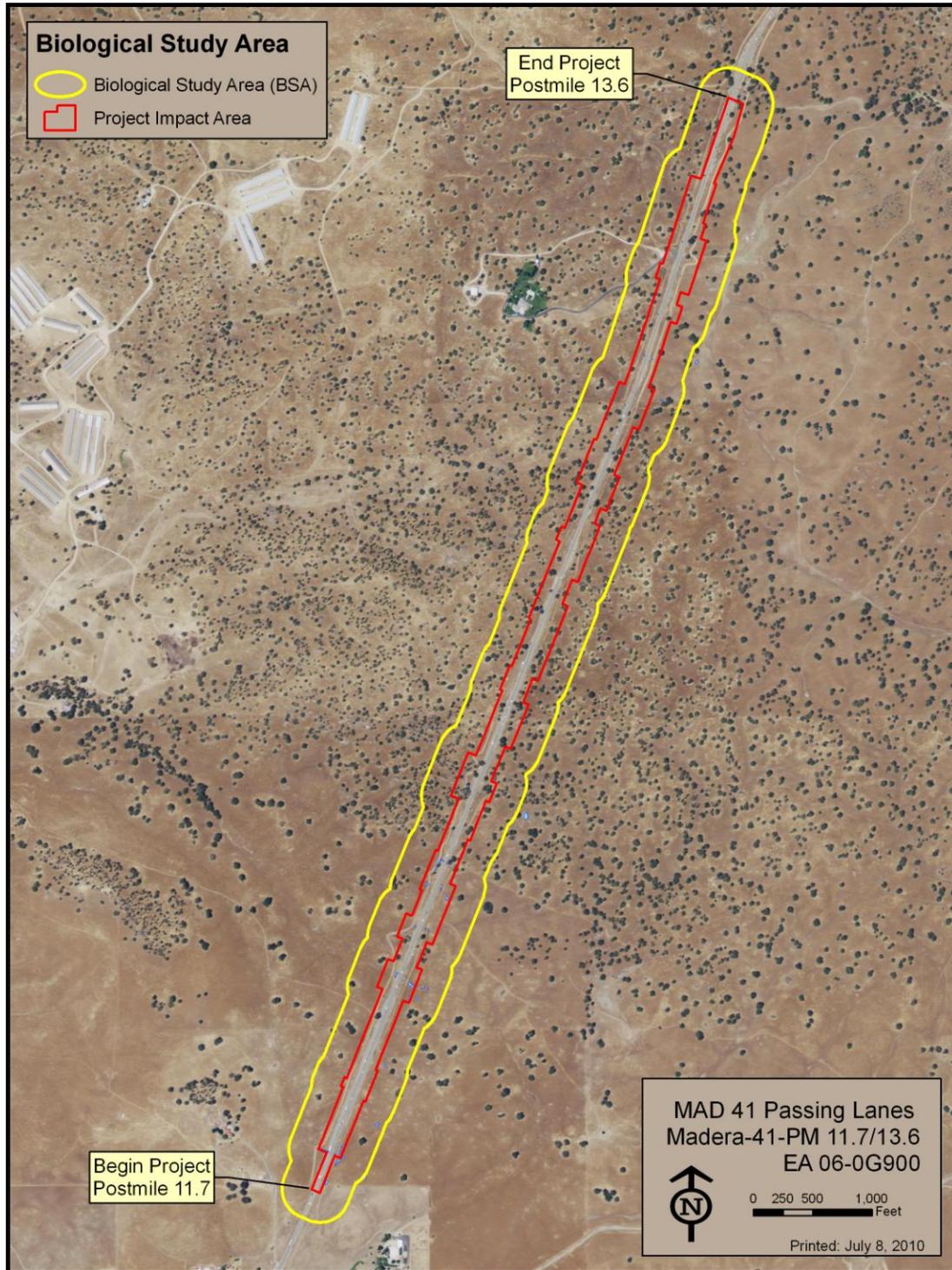
#### ***Affected Environment***

A *Natural Environment Study* (February 2011) was prepared for the project. Study methods consisted of a review of resource agency databases and inventories, agency coordination and professional contacts, site visits, and field surveys. Field surveys, which included general wildlife surveys, vernal pool branchiopod (fairy shrimp) surveys, bird surveys, focused botanical surveys, wetland and other waters of the United States delineation and habitat assessment, were performed from February 3, 2009 to July 2, 2010 to coincide with specific flowering, nesting and breeding periods/seasons.

Biological studies were done within a 250-foot radius of the project site, which included existing Caltrans right-of-way and a portion of privately owned parcels adjacent to the right-of-way. This area is referred to as the biological study area (see Figure 2-1). The project impact area, a subset of the biological study area, is the area to be directly affected by construction-related activities.

The biological study area contains the following habitats: non-native annual grassland and blue oak woodland. These biological communities and the plant and animal species associated with them are discussed below.

Figure 2-1 Biological Study Area



### *Non-Native Annual Grassland*

Non-native annual grassland is a dense-to-sparse cover of annual grasses and is often associated with numerous species of annual forbs (non-woody broad-leaved plants). These grasses are usually found on fine-textured clay soils throughout the valleys and foothills of California at elevations below 3,000 feet, except in the north coastal and desert regions.

The grasses in the biological study area are numerous and encompass the majority of the understory found within the blue oak woodland habitat throughout most of the project area. Most of the grasses in this community are wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*) and red brome (*Bromus madritensis*). The entire study area consists of rolling hills with seasonal wetlands functioning as ephemeral (temporary) pools in the low areas.

### *Blue Oak Woodland*

“Oak woodland” is defined as tree habitat with five or more oak trees per acre, except for valley oaks (*Quercus lobata*) that include one or more trees per acre. An “oak” refers to a native tree species in the genus *Quercus* that is five inches or greater in diameter at breast height. Oak woodlands typically support a diversity of wildlife because of the available nesting sites, escape and thermal cover, food, and dispersal corridors.

The blue oak woodland community is generally dominated by blue oak (*Quercus douglasii*), but includes individuals of other oak species, such as foothill pine (*Pinus sabiniana*). This community, usually found in well-drained soils in Mediterranean climates of California below 3,000 feet, varies from open savannas with grassy understories to dense woodlands with chaparral understories.

In the biological study area, large blue oak trees are the dominant species aside from a few interior live oaks (*Quercus wislizenii*) and one cottonwood (*Populus fremontii*) growing along the tributary to Cottonwood Creek. Under the canopy of trees are tall, weedy annual species of Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), cheeseweed (*Malva parviflora*), and stinging nettle (*Urtica dioica*).

The habitat within the study area is natural and undisturbed except for the grading of a firebreak that is maintained annually, allowing the wildlife community to remain fairly intact. Common wildlife species seen in the project area are the California ground squirrel (*Spermophilus beecheyi*), red-tailed hawk (*Buteo jamaicensis*), white-

crowned sparrow (*Zonotrichia leucophrys*), western spadefoot (*Spea hammondi*), common side-blotch lizard (*Uta stansburiana*) and western fence lizard (*Sceloporus occidentalis*).

### **Environmental Consequences**

The project sits in blue oak woodland habitat. About 40 acres of blue oak woodland, consisting of about 260 blue oak trees, would be removed for the project.

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

Although there is no established guideline that describes mitigation for impacts to native oak trees, Senate Concurrent Resolution No. 17 directs all state agencies to preserve and protect native oak woodlands to the greatest extent possible. Blue oak woodland habitat would be replaced through mitigation developed in cooperation with the California Department of Fish and Game.

Mitigation for blue oak woodland habitat would be accomplished by purchasing a conservation easement on nearby land with the appropriate blue oak woodland habitat and/or planting new blue oak trees in the area at a minimum of a 3:1 ratio. For those oak trees not affected by project-related activities, various avoidance and protection measures (for example, installation of protective fencing) would be implemented to the maximum extent feasible.

## **2.3.2 Wetlands and Other Waters**

### **Regulatory Setting**

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 USC 1344) is the main law regulating wetlands and surface waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. This definition also includes intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation or destruction of which could affect interstate or foreign commerce.

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. Examples of jurisdictional wetlands are swamps, marshes, bogs, natural drainage channels, and seasonal pools.

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

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration, 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.

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

Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required.

The California Department of Fish and Game 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 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 Game.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The Regional Water Quality Control Boards also issue water quality certifications in compliance with Section 401 of the Clean Water Act.

### ***Affected Environment***

A wetlands and other waters of the United States delineation was done to determine the type and extent of potential jurisdictional wetlands and other waters of the U.S. within the biological study area. The delineation was done according to the *U.S. Army Corps of Engineers (ACOE) 1987 Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *ACOE 2006 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Environmental Laboratory 2006). It was determined that the habitat within and adjacent to the project impact area contains potentially jurisdictional wetlands.

A potentially jurisdictional water of the United States—Cottonwood Creek, an ephemeral stream and relatively non-permanent water—occurs in the biological study area, but is outside of the project impact area and would not be affected during project construction. A tributary to Hildreth Creek occurs in the project impact area and is composed of a string of ephemeral pools and wetland swales that are hydrologically connected during rain events but do not exhibit an ordinary high water mark or visible bed and bank. The wetlands and other waters of the United States found within the biological study area provide habitat for several special-status plants and animals; including the federally threatened vernal pool fairy shrimp, California tiger salamander, and spiny-sealed button-celery. A *Wetlands Verification Report* is currently being prepared and will be submitted to the Army Corps of Engineers for verification.

### ***Environmental Consequences***

The project would result in approximately 0.15 acre of permanent and 0.20 acre of temporary impacts to potentially jurisdictional wetlands. An additional 0.01 acre of permanent impacts to potentially jurisdictional waters of the United States, in the form of the roadside ditch, are also anticipated to occur as a result of the project.

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

Wetlands and other waters of the United States in the biological study area would be avoided to the maximum extent feasible. Construction would be limited to the areas within the project impact area. Protection measures, such as protective fencing and a

storm water pollution prevention plan, would be implemented. Terms, conditions, and provisions provided in the Streambed Alteration Agreement, Clean Water Act Section 404 permit, and Clean Water Act Section 401 permit, which would be included in the contractor bid information, are designed to minimize and avoid impacts to waterways and wetlands.

Compensatory mitigation for permanent impacts to wetlands would be at a 1:1 ratio and would be fulfilled through the purchase of credits at an Army Corps of Engineers-approved conservation bank during the Clean Water Act Section 404 permit process. Compensatory mitigation would not be required for temporary impacts, because temporary impacts would not be from fill placement but from disturbance due to equipment access, which the Army Corps of Engineers and Regional Water Quality Control Boards do not regulate.

All temporary impacts to wetlands and waters of the United States would be restored to pre-project conditions and replanted with native species. Additional wetland credits would be purchased for ephemeral pool habitat for vernal pool fairy shrimp and California tiger salamander that would also compensate for wetland impacts.

### **2.3.3 Plant Species**

#### ***Regulatory Setting***

The U.S. Fish and Wildlife Service and California Department of Fish and Game share 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 afforded 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 2.3.5 in this document for detailed information on these species.

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

The regulatory requirements for the Federal Endangered Species Act can be found at United States Code 16, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. The regulatory requirements for the 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 Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100-21177.

### ***Affected Environment***

Information in this section is from the *Natural Environment Study* (February 2011).

The project area provides potential suitable habitat for four special-status plant species: beaked clarkia, dwarf downingia, spiny-sepaled button-celery, and Boggs Lake hedge-hyssop. These plants are native to California's valley and foothill grasslands, as well as areas in the Sierra Nevada foothills. Of those plants, only the spiny-sepaled button-celery was found in the project area. The spiny-sepaled button-celery is listed as 1B.2 (1B signifies rare, threatened or endangered in California and elsewhere, .2 signifies that it is fairly endangered in California) in the California Native Plant Society list.

#### ***Spiny-Sepaled Button-Celery***

Spiny-sepaled button-celery (*Eryngium spinosepalum*) is a biennial and perennial herb that is a member of the carrot family (*Apiaceae*) and is associated with vernal pools, swales, and depressions within grasslands. The individual flowers are small tightly packed white flowers with sharp spiny sepals or teeth below the flowers.

The California Natural Diversity Database indicates that the spiny-sepaled button-celery occurs within the southern end of the project area. However, during botanical surveys, this species was found in most of the wetlands in the biological study area. Although it's likely that the spiny-sepaled button-celery found in the biological study area may be a hybrid with a common *Eryngium* species, it will be treated as spiny-sepaled button-celery.

#### ***Beaked Clarkia, Dwarf Downingia, and Boggs Lake Hedge-Hyssop***

There is a low likelihood that these species could occur in the biological study area. If these species had bloomed, it is very likely they would have been encountered in the biological study area, if present, during the most recent focused botanical surveys. Therefore, avoidance, minimization or mitigation measures are not proposed.

### **Environmental Consequences**

#### ***Spiny-Sepaled Button-Celery***

Spiny-sepaled button-celery was identified in the biological study area during plant surveys. As a result of the acquisition of new right-of-way and construction activities, there are potential impacts. Approximately 0.15 acre of permanent impacts and 0.39 acre of temporary impacts may be affected.

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

#### ***Spiny-Sepaled Button-Celery***

All spiny-sepaled button-celery areas that can be avoided during construction would be established as an Environmental Sensitive Area by installing orange mesh fencing and/or new right-of-way fencing to avoid unplanned, accidental, or construction-related impacts.

In areas where avoidance is not possible, the following minimization measures would be implemented to minimize impacts during construction activities:

- Under the direction of a Caltrans biologist, topsoil would be collected and salvaged from areas where spiny-sepaled button-celery is to be disturbed.
- Salvaged topsoil would be stored at an appropriate site within the project area.
- Topsoil would be replaced in areas where temporary disturbance to spiny-sepaled button-celery occurred.

Compensatory mitigation is not proposed for impacts to the spiny-sepaled button-celery; however, mitigation credits would be purchased for impacts to vernal pool fairy shrimp (*Branchinecta lynchi*) and California tiger salamander (*Ambystoma californiense*) habitat that would also benefit this plant species.

### **2.3.4 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 Fisheries and the California Department of Fish and Game are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5. All other special-status animal species are discussed here,

including the California Department of Fish and Game fully protected species and species of special concern, and U.S. Fish and Wildlife Service or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

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

State laws and regulations pertaining to wildlife include the following:

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

### ***Affected Environment***

Information in this section is from the *Natural Environment Study* (February 2011).

This section discusses potential impacts and permit requirements associated with wildlife that are likely to occur within the biological study area. The biological study area provides potential habitat for five special-status animal species: western spadefoot toad, burrowing owl, pallid bat, western mastiff bat, and the American badger. Also, various migratory birds could nest within the project area because there is available foraging and nesting habitat. The following animal species are considered species of special concern with the California Department of Fish and Game and are discussed below.

#### ***Western Spadefoot Toad***

The western spadefoot toad is a medium-sized toad that is greenish-gray in color and has distinctive, spade-shaped protuberances on each hind foot, which are used for digging burrows. Western spadefoot toads spend most of their lives underground in rodent burrows or burrows they build. They come out to forage for food at night after rains or periods of high humidity and breed in seasonal wetlands, vernal pools, and stock ponds.

Western spadefoot tadpoles were seen in ephemeral pools within the biological study area.

### *Burrowing Owl*

This owl is a small ground-dwelling owl that nests and forages in open grasslands, prairies, and farmlands. It nests in small mammal burrows, most frequently in the burrows of California ground squirrels. This owl hunts for insects and small vertebrates during both day and night.

During surveys, a burrowing owl was seen exiting a burrow outside the project impact area, but within the biological study area.

### *Pallid Bat*

The pallid bat is usually found in rocky, mountainous areas, near water. It is also found over more open, sparsely vegetated grasslands, and seems to prefer to forage in open areas. The pallid bat has large eyes compared to many other North American bats and its ears are pale and wide. Its fur can be light brown with white near its abdomen. These bats are 3.5 to 5.5 inches long, with a wing span of 13 to 15 inches, and a forearm length of 1.9 to 2.3 inches. The pallid bat has three different roosts. The day roost is usually in a warm, horizontal opening such as in attics or rock cracks; the night roost is usually in trees with light foliage; and the hibernation roost is often in buildings, caves, or cracks in rocks.

Although suitable habitat is present with the biological study area, pallid bats or indications of them (roosts, guano/bat droppings) were not found during biological surveys.

### *Western Mastiff Bat*

The western mastiff bat is the largest native bat of the United States, with a body length of 5.5 to 7.5 inches and a wingspan of over 22 inches. The wings of the mastiff bat are distinctively long and narrow, and its fur is dark brown with white hairs at the base. The bat's ears are large and joined at the base and extend out over the forehead like a bonnet. This bat is most commonly found in broad, open areas and roosts in crevices in cliff faces, high buildings, trees and tunnels. This bat seeks refuge in crevices in rocks that form vertical or nearly vertical cliffs.

Although suitable habitat is present with the biological study area, western mastiff bats or indications of them (roosts, guano/bat droppings) were not found during biological surveys.

### *American Badger*

American badgers are found throughout California, from high alpine meadows to sea level (or below in Death Valley, California). Adult badgers are mostly gray in color, with a distinct white stripe that starts from the nose and ends between the shoulders. These badgers are 30 to 35 inches long. They have wide bodies giving a flat-backed appearance. Their front paws are rotated laterally, and their long claws help for rapid digging, which they frequently use to capture their prey.

Although suitable habitat is present within the biological study area, the American badger or indications of it (tracks, dens, scat/droppings) were not found during biological surveys.

### *Migratory Birds*

There is potential nesting habitat in the project area for protected raptors and migratory birds.

## ***Environmental Consequences***

### *Western Spadefoot Toad*

As a result of new right-of-way acquisition and construction-related activities, impacts to the western spadefoot toad would consist of similar habitat impacts for the vernal pool fairy shrimp and California tiger salamander, as discussed in Section 2.3.5.

### *Burrowing Owl*

If construction activities occur during the burrowing owl breeding season, and an occupied burrow is adjacent to the project impact area, noise may directly affect breeding activities, resulting in the loss of a burrow. However, with implementation of avoidance and minimization measures, burrowing owl deaths are not anticipated to occur because of the project.

### *Pallid Bat and Western Mastiff Bat*

With implementation of avoidance and minimization measures, impacts to bats are not anticipated to occur because of the project.

### *American Badger*

With implementation of avoidance and minimization measures, impacts to the American badger are not anticipated to occur as a result of the proposed project.

### *Migratory Birds*

About 260 oak trees would be removed for the project.

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

#### *Western Spadefoot Toad*

The avoidance and minimization measures implemented for the vernal pool fairy shrimp and California tiger salamander would benefit the western spadefoot.

Compensatory mitigation is not proposed due to compensatory mitigation for the vernal pool fairy shrimp and California tiger salamander.

#### *Burrowing Owl*

Pre-construction surveys would be performed by a qualified biologist. All pre-construction surveys and minimization efforts would be done in accordance with the California Department of Fish and Game's *Staff Report on Burrowing Owl*

#### *Mitigation.*

If burrowing owls are present on the construction site during the breeding season (April 15 through July 15) and appear to be engaged in nesting behavior, a fenced 500-foot buffer would be installed between the nest site or active burrow and any earth-moving activity or other disturbance. This 500-foot buffer would remain until a qualified biologist determines that the young have fledged, typically by August 31.

If burrowing owls are present in the non-breeding season, they must be moved from the project site. Relocation would not begin until October 1 and must be completed by February 1. After relocation, the area where owls occurred and its immediate vicinity (500 feet) would be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document that owls are not reoccupying the site.

Avoidance and/or relocation requires that a minimum of 6.5 acres of foraging habitat be permanently preserved as close to the occupied burrow sites for each pair of breeding owls or single unpaired resident bird. When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.

Due to the implementation of avoidance and minimization measures, compensatory mitigation is not proposed for the burrowing owl.

### *Pallid Bat and Western Mastiff Bat*

Pre-construction surveys would be performed by a qualified biologist within the biological study area before the start of construction because bats could roost within the area.

If an active roost is detected, the Department of Fish and Game would be consulted on avoidance and minimization efforts, such as establishing an Environmentally Sensitive Area around the roost site to prevent disturbance. Work may be temporarily suspended if roosting bats are found in the project impact area.

Due to the implementation of avoidance and minimization measures, compensatory mitigation is not proposed for either the pallid bat or western mastiff bat.

### *American Badger*

Pre-construction surveys would be performed by a qualified biologist in the biological study area before the start of construction because a badger could build a den within the area.

If an active badger den is detected, the Department of Fish and Game would be consulted on avoidance and minimization efforts, such as establishing an Environmentally Sensitive Area around the den site to prevent disturbance and/or monitoring the active den site during construction. Work may be temporarily stopped if a badger den is found in the project impact area.

Due to the implementation of avoidance and minimization measures, compensatory mitigation is not proposed for the American badger.

### *Migratory Birds*

Caltrans Standard Specification, Section 14 “Bird Protection,” would be included in the construction contract to require the contractor to notify the project engineer prior to beginning any construction-related activity during the nesting season (February 15 through September 1). The provision would also require a pre-construction survey for migratory birds within the proposed project area and adjacent habitat no more than 14 days prior to project construction and tree removal.

## **2.3.5 Threatened and Endangered Species**

### ***Regulatory Setting***

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United State Code Section 1531, et seq. See also 50

Code of Federal Regulations Part 402. This act and subsequent 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, are required to consult with the U.S. Fish and Wildlife Service and the 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 is a Biological Opinion or an Incidental Take statement. Section 3 of the Federal Endangered Species 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. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats.

The California Department of Fish and Game is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the California Department of Fish and Game.

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

### ***Affected Environment***

Information in this section is from the *Natural Environment Study* (February 2011).

The biological study area consists of non-native annual grassland and blue oak woodland communities. These communities may contain special-status plant and animal species that are listed as threatened and endangered species. These species may regularly occur in association with each other in certain landscapes or physical environments. Species lists were obtained from the U.S. Fish and Wildlife Service, and the California Natural Diversity Database was reviewed to identify threatened, endangered, and candidate species. These plant and animal species are discussed below.

An application would be submitted to the California Department of Fish and Game for a Consistency Determination under Section 2081.1 of the Department of Fish and Game Code for the potential take of the California tiger salamander, a state threatened species.

Caltrans will initiate formal consultation with the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act of 1973 for the federally threatened vernal pool fairy shrimp and California tiger salamander. A Biological Assessment will be prepared for the U.S. Fish and Wildlife Service to specifically address the project's effects on the vernal pool fairy shrimp and California tiger salamander. Upon approval of the Biological Assessment, the U.S. Fish and Wildlife Service will issue a Biological Opinion.

#### *Vernal Pool Fairy Shrimp (Federally Threatened)*

The vernal pool fairy shrimp is a crustacean usually an inch or less in size. It is typically semi-transparent or grayish-white in color. These shrimp are found in vernal pools or vernal pool-like habitats. Vernal pool fairy shrimp are widely distributed in grassland habitats throughout California, but are not abundant in any one location. Two major habitat types are characteristic for this species: small, clear, sandstone rock pools surrounded by foothill grasslands, or small grass or mud-bottomed swales, or basalt flow depression pools in unplowed grasslands. Within the Central Valley, it is not uncommon for vernal pool fairy shrimp to also occupy disturbed sites that lack other species presence.

A total of 29 ephemeral pools were identified, mapped, and sampled for vernal pool branchiopods within the biological study area. Vernal pool fairy shrimp were found in 10 of the 29 pools in the biological study area. No other branchiopod species were identified within any of these pools.

A total of 19 pools did not contain fairy shrimp. Presence of fairy shrimp was inferred within these 19 pools, based on the habitat features and close proximity to pools that support vernal pool fairy shrimp. Table 2-4 is a detailed summary of species, pool size, and impact type. Only pools and culverts that held water long enough to serve as potential fairy shrimp habitat were included in the table. (See Appendix G for vernal pool fairy shrimp sampling locations.)

**Table 2-4 Vernal Pool Fairy Shrimp Survey Summary Table**

<b>Location</b>	<b>Fairy Shrimp Species</b>	<b>Acreage of Pool</b>	<b>Construction Impact</b>	<b>Acreage of Impact</b>
Pool 1	<i>Vernal pool fairy shrimp (vpfs)</i>	0.010	Permanent	0.010
Pool 3	<i>Vpfs</i>	0.006	None	0
Pool 4	<i>Vpfs</i>	0.007	Permanent	0.007
Pool 5	<i>Vpfs</i>	0.007	Permanent	0.007
Pool 6	None	0.021	None	0
Pool 8	None	0.012	None	0
Pool 9	None	0.008	None	0
Pool 10	None	0.008	Permanent	0.008
Pool 11	None	0.003	None	0
Pool 12	<i>Vpfs</i>	0.003	None	0
Pool 13	<i>Vpfs</i>	0.002	None	0
Pool 14	<i>Vpfs</i>	0.022	Permanent	0.022
Pool 15	None	0.002	Permanent	0.002
Pool 16	<i>Vpfs</i>	0.011	Permanent	0.011
Pool 17	None	0.001	Permanent	0.001
Pool 18	<i>Vpfs</i>	0.032	None	0
Pool 19	None	0.011	None	0
Pool 20	None	0.005	None	0
Pool 21	None	0.005	None	0
Pool 22	None	0.004	Permanent	0.004
Pool 23	None	0.004	Permanent	0.004
Pool 24	<i>Vpfs</i>	0.009	Permanent	0.009
Pool 25	None	0.010	Permanent	0.010
Pool 26	None	0.009	None	0
Pool 27	None	0.006	Permanent	0.006
Culvert 1	None	0.047	Permanent	0.047
Culvert 3	None	0.001	Permanent	0.001
Culvert 4	None	0.0004	Permanent	0.0004
Culvert 22	None	0.001	Permanent	0.001
<b>Total Acreage</b>		<b>0.2674</b>		
<b>Total Acreage Impacts</b>				<b>0.1504</b>

*Valley Elderberry Longhorn Beetle (Federally Threatened)*

The valley elderberry longhorn beetle is less than an inch in size and primarily found on or close to elderberry shrubs (*Sambucus* species), its host plant. Elderberry shrubs are found in both riparian and non-riparian situations. In California's Central Valley and adjacent foothills, up to elevations of about 3,000 feet above mean sea level, elderberry bushes are designated as potential habitat for the valley elderberry longhorn beetle. Elderberry shrubs must have stems that are one inch or greater in diameter at ground level to serve as habitat for the beetle. Generally, the only evidence of the beetle is an exit hole created by the larvae.

One elderberry shrub was found in the biological study area. However, beetle exit holes were not present at the time of the surveys.

*California Tiger Salamander (Federally Threatened; State Threatened)*

The California tiger salamander is a terrestrial amphibian with a black body and yellow spots making it readily identifiable in the grassland, open oak woodland, stock pond and vernal pool habitat in which they naturally occur. Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat, returning to the surrounding upland habitat to hibernate. Occasionally, California tiger salamanders are found breeding in slow-moving streams or ditches.

Surveys for the California tiger salamander were not done because suitable breeding and upland habitat exists and the species has already been recorded close to the biological study area and project impact area. Therefore, presence of the California tiger salamanders within the project impact area was inferred.

*Swainson's Hawk (State Threatened)*

The Swainson's hawk is a summer migrant in the Central Valley that breeds in riparian and oak savannah habitat, and forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. The hawk roosts in large trees, but will roost on the ground if no trees are available. It can fly or walk on the ground to catch its prey.

Although potential nesting habitat is present, active Swainson's hawk nests were not found in the biological study area. Swainson's hawks have not been recorded within five miles of the project site.

***San Joaquin Kit Fox (Federally Endangered; State Threatened)***

The San Joaquin kit fox is the smallest fox in North America, with an average body length of 20 inches and weight of about five pounds. It has large ears, a slim body, and a long bushy tail. The San Joaquin kit fox is active year-round and inhabits grassland, scrubland, oak woodland, alkali sink scrubland, and vernal pool and alkali meadow communities. On occasion, it can inhabit other highly modified landscapes such as oil fields and wind turbine facilities.

The kit fox lives in underground dens for temperature regulation, shelter, reproduction, and predator avoidance. Kit foxes dig their own dens, use dens of other animals, or use human-made structures (culverts, abandoned pipelines, or banks in sumps or roadbeds). Dens are typically located on loose-textured soils on slopes less than 40 degrees.

Although suitable habitat is present in the biological study area, the San Joaquin kit fox was not found during surveys and the project site is outside of the known distribution of this species.

***Succulent Owl's Clover (Federally and State Threatened), San Joaquin Valley Orcutt Grass (Federally Threatened; State Endangered), Hairy Orcutt Grass (Federally and State Endangered), and Greene's Tuctoria (Federally Endangered)***

These annual herbs are native to California and are associated with vernal pools. There is a low likelihood that these species could occur in the biological study area. If these species were present, it is very likely they would have been encountered in the biological study area during the most recent focused botanical surveys.

***Environmental Consequences***

Pending completion of the Biological Assessment, it is anticipated that the proposed project would result in a “no effect” determination for the succulent owl's clover, San Joaquin Valley orcutt grass, hairy orcutt grass, and Greene's tuctoria.

***Vernal Pool Fairy Shrimp***

Potential impacts to vernal pool fairy shrimp habitat would occur as a result of the acquisition of new right-of-way and from excavation, filling and/or paving during project construction. The total acreage of vernal pool fairy shrimp habitat that may be permanently affected by construction-related activities is estimated to be 0.15 acre. A determination of “likely to adversely affect” is anticipated as a result of the project.

### *Valley Elderberry Longhorn Beetle*

With the implementation of avoidance and minimization measures, impacts to the valley elderberry longhorn beetle are not anticipated as a result of the proposed project. A determination of “no effect” is anticipated.

### *California Tiger Salamander*

Potential impacts to California tiger salamander breeding and upland habitat, both in existing and new right-of-way, would occur as a result of construction activities.

The construction of the project would permanently affect 21.75 acres and temporarily affect 18.51 acres of California tiger salamander upland habitat. An additional 0.15 acre of California tiger salamander breeding habitat would be permanently affected by construction-related activities. A determination of “likely to adversely affect” is anticipated as a result of the project.

### *Swainson’s Hawk*

With the implementation of avoidance and minimization measures, impacts to the Swainson’s hawks are not anticipated as a result of the proposed project.

### *San Joaquin Kit Fox*

Impacts to the San Joaquin kit fox are not anticipated as a result of the project. Therefore, avoidance, minimization or mitigation measures are not proposed. A determination of “no effect” is anticipated.

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

Pending completion of the Biological Assessment and formal consultation with the resource agencies, the following measures would minimize the potential for impacts to special species:

#### *Vernal Pool Fairy Shrimp*

For ephemeral pools that can be avoided during construction, Environmentally Sensitive Area fencing and/or new right-of-way fencing would be installed to avoid unplanned, accidental, or construction-related impacts.

In areas where avoidance is not possible, the following minimization measures will be implemented to minimize impacts to this species during construction activities:

- Chemicals, lubricants and petroleum products would be closely monitored and precautions would be used to avoid spills. Any spills would be cleaned up immediately.
- Habitat temporarily affected would be restored to pre-project conditions.

All potential impacts to vernal pool fairy shrimp habitat (with concurrent compensation for California tiger salamander habitat) would be compensated by preserving habitat in areas that are important for the recovery of the vernal pool fairy shrimp population. Each acre of lost vernal pool fairy shrimp habitat, due to project-related impacts, would be replaced with three acres of quality habitat at a U.S. Fish and Wildlife Service- and California Department of Fish and Game-approved mitigation bank. The project would potentially impact 0.15 acre of vernal pool fairy shrimp habitat. Therefore, at a 3:1 compensation ratio, 0.45 acre of quality vernal pool fairy shrimp habitat would be acquired and preserved in perpetuity.

#### *Valley Elderberry Longhorn Beetle*

Environmentally Sensitive Area fencing or right-of-way fencing would be installed with a buffer zone of about 130 feet from the elderberry shrub, to avoid unplanned, accidental, or construction-related impacts to the elderberry shrub.

#### *California Tiger Salamander*

For breeding and upland habitat that can be avoided during construction, Environmentally Sensitive Area fencing and/or new right-of-way fencing would be installed to avoid unplanned, accidental, or construction-related impacts.

In areas where avoidance is not possible, the following minimization measures will be implemented to minimize impacts to this species during construction activities:

- Chemicals, lubricants and petroleum products would be closely monitored and precautions would be used to avoid spills. Any spills would be cleaned up immediately.
- Habitat temporarily affected would be restored to pre-project conditions.

Caltrans would compensate for all potential impacts to California tiger salamander habitat (with concurrent compensation for vernal pool fairy shrimp habitat) by preserving habitat in areas that are important for the recovery of the California tiger salamander population. Each acre of lost California tiger salamander habitat, due to project related impacts, would be replaced with three acres for permanent impacts and

1.1 acres for temporary impacts of quality habitat at a U.S. Fish and Wildlife Service- and California Department of Fish and Game-approved mitigation bank.

The project would permanently affect 21.75 acres and temporarily affect 18.51 acres of upland habitat. Therefore, at a 3:1 compensation ratio for permanent impacts and 1.1:1 compensation ratio for temporary impacts, a total of 85.61 acres of quality California tiger salamander upland habitat would be acquired and preserved in perpetuity for the recovery of the California tiger salamander.

An added 0.15 acre of California tiger salamander breeding habitat would be permanently affected. At a 3:1 compensation ratio for permanent impacts, an additional 0.45 acre of quality California tiger salamander breeding habitat would be acquired (during concurrent compensation for vernal pool fairy shrimp habitat) and preserved in perpetuity for the recovery of the California tiger salamander.

### *Swainson's Hawk*

A pre-construction survey would be performed by a qualified biologist in the biological study area and within a half-mile radius around the biological study area before the start of construction because a hawk could build a nest within the area.

If an active nest is detected, the Department of Fish and Game would be consulted on avoidance and minimization efforts, such as establishing an Environmentally Sensitive Area around the nest site to prevent disturbance and/or monitoring the active nest site during construction. Work may be temporarily suspended if nesting birds are found in the biological study area.

Due to the implementation of avoidance and minimization measures, compensatory mitigation is not proposed for the Swainson's hawk.

## **2.3.6 Invasive Species**

### ***Regulatory Setting***

On February 3, 1999, President Bill Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the state's noxious weed list to

define the invasive plants that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

### **Affected Environment**

Information in this section is from the *Natural Environment Study* (February 2011).

Four listed noxious weed species from the California Noxious Weed List were found in the biological study area: Italian thistle (*Carduus pycnocephalus*), yellow star thistle (*Centaurea solstitialis*), Russian thistle (*Salsola tragus*) and Bermuda grass (*Cynodon dactylon*). These listed species require eradication only when found in a nursery.

### **Environmental Consequences**

Imported and exported fill material have the greatest potential to spread invasive plants. The dispersal of invasive species in the area may also be caused by maintenance operations, such as mowing or the inadvertent inclusion of invasive species in seed mixes, which are applied adjacent to the highway.

In compliance with the Executive Order 13112 for invasive species, and subsequent guidance from the Federal Highway Administration, landscaping and erosion control provisions and best management practices are included in the contractor bid information that would minimize the introduction or further spread of noxious weeds.

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

Clean fill would be imported to the project site. Any excess soil that cannot remain on site would be disposed of in a manner that would not spread invasive plants and their seeds. If there is an extensive amount of fill, it can be modified to only include the top six inches of soil. Care would be taken to avoid including any species that occur on the California Invasive Plant Council's *Invasive Plant Inventory* in the Caltrans erosion control seed mix or landscaping plans for the project.

## **2.4 Construction Impacts**

### **Affected Environment**

The project area is in rural Madera County between Fresno and Coarsegold. Land use in the area is designated as rural and agricultural. Land is used mostly for cattle grazing. Rural residences sit at the north end on the southbound side and at the southwest end of the project. Construction is anticipated to take about 280 working

days. The California Highway Patrol would close the highway for a few hours to allow for rock blasting.

To minimize disruption to the traveling public and surrounding communities, staged construction would occur so that both lanes can remain open during construction. Alternate one-way traffic control is also anticipated for moving equipment and/or materials from one side of the roadway to the other. Road closures would occur for a few hours for rock blasting.

### ***Environmental Consequences***

During construction, the project would generate a temporary increase in air pollutants. The exhaust from construction equipment contains hydrocarbons, nitrogen oxides, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other construction activities. The impacts would vary each day as project construction continues. Dust and odors reaching a residence, although set far back from the right-of-way, could cause occasional annoyance and complaints. The project would incorporate standard construction provisions for dust control, aerially deposited lead, and storm water runoff.

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

#### ***Dust Control***

The project would be subject to a Dust Control Permit and Rule 9510 from the San Joaquin Unified Air Pollution Control District. Rule 9510 (Indirect Source Review Rule) applies to construction equipment emissions for transportation projects that exceed 2.0 tons of either PM<sub>10</sub> and/or NO<sub>x</sub> air pollutants. Mitigation options include using a construction fleet that is “cleaner than the California state average” and/or paying fees to the Air Pollution Control District. The contractor would be responsible for the Indirect Source Review Air Impact Analysis and any applicable fees.

Following the Air Pollution Control District’s requirements and the Caltrans Provisions/Specifications for dust, the effects of dust during construction should be minimized. The contractor is responsible for complying with the Air Pollution Control District’s rules, ordinances, regulations, as specified in Caltrans Standard Specifications, Section 7-1.01F “Air Pollution Control” and Section 10 “Dust Control.”

### *Aerially Deposited Lead*

A standard special provision requiring a Lead Compliance Plan for worker safety would also be a part of the project construction package to protect construction workers and the public from potential exposure to lead in the soil. Statistical analysis of soil samples taken in the area indicates that although aerially deposited lead is present, levels are well below regulatory requirements for special handling or disposal (Hazardous Waste Scoping Document, October 2007).

### *Storm Water Runoff*

It is Caltrans policy to incorporate management measures and best management practices pertaining to storm water and the National Pollutant Discharge Elimination System for a statewide permit to prevent impacts to water quality during the planning, design, construction, and operational and maintenance stages. Some management measures include, but are not limited to:

- Prepare and implement an approved Storm Water Pollution Prevention Plan, incorporating applicable Temporary Construction Site best management practices within the project limits.
- Limit disturbance of natural drainage features and vegetation. Where feasible, vegetated strips and swales would be used to remove sediments from storm water runoff prior to reaching any natural drainage courses.
- Limit soil disturbances such as clearing and grubbing/grading. Cut and fill slopes would be limited and made as flat as possible to reduce erosion and sediment loss.
- Develop and implement runoff pollution controls to reduce pollutant concentrations and volumes.
- Erosion control measures, such as slope vegetation, flared end sections and rock slope protection at inlets and outlets, would also be used to minimize or eliminate increased sediment loading to surface runoff.
- Ensure proper storage and disposal of toxic material.

The project would disturb about 40 acres of soil. Caltrans' National Pollutant Discharge Elimination System Permit requires coordination with the Regional Water Quality Control Board when more than 1 acre is disturbed. The following is required:

- A Notification of Construction would be submitted to the Regional Water Quality Control Board at least 30 days prior to the start of construction activities.

- A Storm Water Pollution Prevention Plan would be developed by the contractor and submitted to the Caltrans Resident Engineer for approval prior to the start of construction.
- A Notice of Completion of Construction would be submitted to the Regional Water Quality Control Board upon completion of the construction and stabilization of the site.

## **2.5 Climate Change under the California Environmental Quality Act**

### ***Regulatory Setting***

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years.

These efforts are primarily concerned with emissions of greenhouse gases as a result of human activities. They include: carbon dioxide which enters the atmosphere through the burning of fossil fuels, solid waste, trees and wood products, and also as a result of other chemical reactions; methane (is emitted during production and transportation of coal, natural gas and oil, from livestock and agricultural practices, and by the decay of organic waste in landfills); nitrous oxide (from agricultural and industrial activities, as well as during fossil fuel and solid waste combustion); and fluorinated gases, such as tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane). Fluorinated gases are synthetic and powerful greenhouse gases emitted into the atmosphere from a variety of industrial processes.

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board to develop and implement regulations with stricter emissions standards 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; however, in order to enact the standards California needed a waiver from the U.S. Environmental Protection Agency (EPA). The waiver was denied by Environmental Protection Agency in December 2007 and

efforts to overturn the decision had been unsuccessful. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011.

On January 26, 2009, it was announced that the Environmental Protection Agency would reconsider its decision regarding the denial of California's waiver. On May 18, 2009, President Barack Obama announced the enactment of a 35.5-miles-per-gallon fuel economy standard for automobiles and light-duty trucks which will take effect in 2012. On June 30, 2009, the Environmental Protection Agency granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, then-Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the California Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, then-Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency to regulate greenhouse gas as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.*, 549 U.S. 497 (2007)). The court ruled that greenhouse gases do fit within the Clean Air Act's definition of a pollutant, and that the Environmental

Protection Agency does have the authority to regulate greenhouse gases. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

On December 7, 2009, the Environmental Protection Agency's Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

**Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>)--in the atmosphere threaten the public health and welfare of current and future generations.

**Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. Environmental Protection Agency's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009<sup>1</sup>. On May 7, 2010, the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register<sup>2</sup>.

The final combined U.S. Environmental Protection Agency and National Highway Traffic Safety Administration standards that make up the first phase of this National Program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet

---

<sup>1</sup> <http://www.epa.gov/climatechange/endangerment.html>

<sup>2</sup>

<http://www.regulations.gov/search/Regs/contentStreamer?objectId=0900006480a5e7f1&disposition=attachment&contentType=pdf>

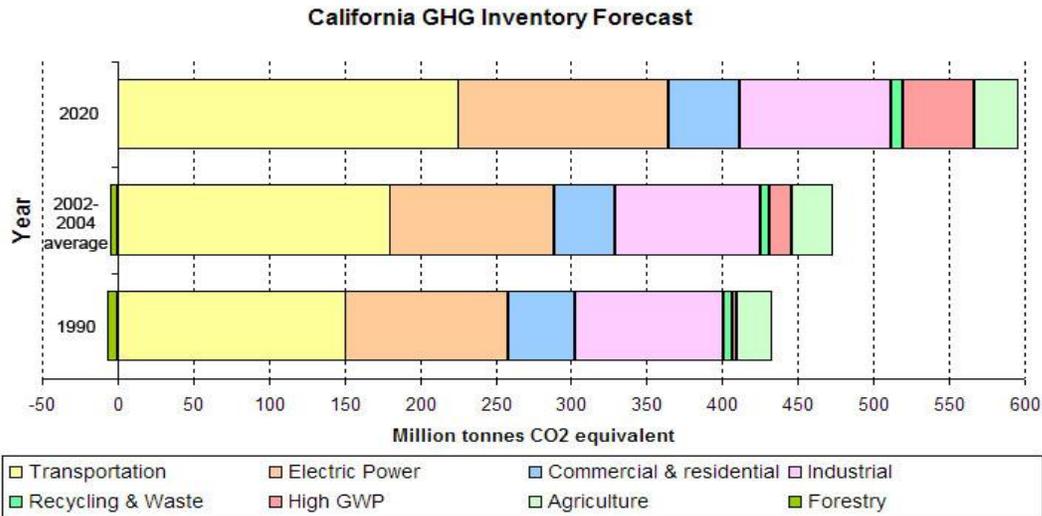
this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

According to Recommendations by the Association of Environmental Professionals on *How to Analyze Greenhouse Gas Emissions and Global Climate change in CEQA Documents* (March 5, 2007), 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 participate in a potential impact through its incremental contribution combined with the contributions of all other sources of greenhouse gases.

In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act Guidelines sections 15064(i)(1) and 15130. To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, California Air Resources Board released an updated version of the greenhouse gas inventory for California (June 26, 2008). Figure 2-2 is a graph from that update showing the total greenhouse gas emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

**Figure 2-2 California Greenhouse Gas Inventory**



Taken from: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California’s greenhouse gas emissions are from burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation, Caltrans has created and is implementing the guidance document, *Climate Action Program at Caltrans* which was published in December 2006. *Climate Action Program at Caltrans* (December 2006) can be found at: <http://www.dot.ca.gov/docs/ClimateReport.pdf>

### *Project Analysis*

One of the main strategies in the Department’s Climate Action Program to reduce greenhouse gas emissions is to make California’s transportation system more efficient. Transportation’s contribution to greenhouse gas emissions depends on three factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0 to 25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0 to 25 mph. Optimum speeds are between 45 and 50 miles per hour. Generally, enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in greenhouse gas emissions.

**Quantitative Analysis**

The Build Alternative, constructing symmetrical passing lanes and 8-foot outside shoulders, would relieve traffic congestion and improve traffic flow. Gasoline and diesel-powered vehicles operate less efficiently at low speeds. The road surface improvements and increased Level of Service would be improved if the project is built.

Estimated annual carbon dioxide emissions were modeled using CT-EMFAC 2007. The average daily traffic was the same for the No-Build and Build Alternatives. The assumptions used in the model assume a peak hour (two hours per day) prevailing speeds of 5-45 miles per hour and a non-peak hour prevailing free-flow speed of 35-60 miles per hour for the No-Build Alternative. For the Build Alternative, the peak hour speed assumption was 40-45 and the non-peak hour speed assumption was 35-55. The total vehicle miles traveled were allotted 2 hours for peak and 22 hours for off-peak for all scenarios. Annual average daily traffic includes 8 percent truck traffic.

The results indicate only a rough estimate of emissions based on projected annual average daily traffic data. Table 2-5 compares carbon dioxide emissions in tons per year for the Build Alternative and the No-Build Alternative.

CO<sub>2</sub> emissions results from modeling are useful only for a comparison between alternatives. The numbers are not necessarily an accurate reflection of what the true CO<sub>2</sub> emissions will be because CO<sub>2</sub> emissions depend on other factors that are not part of the model, such as the fuel mix (EMFAC model emission rates are only for direct engine-out CO<sub>2</sub> emission not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components), rate of acceleration and the aerodynamics and the fuel efficiency of the vehicles.

**Table 2-5 Estimated Carbon Dioxide Emissions in Tons per Year for Build and No-Build Alternatives**

Volume	2008	2016 Build	2016 No-Build	2030 Build	2030 No-Build
CO <sub>2</sub>	450.83	600.63	584.22	947.29	960.56

Source: Caltrans Central Region Environmental Engineering

According to EMFAC modeling results, both the Build and No-Build alternatives would result in more greenhouse gases than the existing condition in 2008. This is primarily because of EMFAC's focus on predicted traffic volumes and speeds, which would increase with the additional two lanes the project adds to the highway.

The 2016 Build Alternative is predicted to produce greater greenhouse gas emissions than the no-build conditions. However, the 2030 build conditions show a reduction. The Build Alternative for 2030 is predicted to cause about 13 tons less carbon dioxide than the No-Build Alternative. Based on the limited modeling tools and guidelines available for greenhouse gases, the Build Alternative would improve mobility.

### **Greenhouse Gas Construction Emissions**

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced because of material processing, emissions produced by onsite construction equipment, and emissions arising from 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/stronger pavement, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

### **CEQA Conclusion**

As discussed above, the modeling for the project shows that greenhouse gas emissions would increase when comparing the existing conditions to the future no-build conditions. However, the emissions would be less over the lifetime of the project when comparing the future Build Alternative to the future No-Build Alternative. It is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination regarding the project's direct impact and its contribution on the cumulative scale to climate change.

Caltrans is taking further measures to help reduce energy consumption and greenhouse gas emissions. These measures are outlined in the following section.

### **Assembly Bill 32 Compliance**

Caltrans continues to be actively involved on the Governor's Climate Action Team as the California Air Resources Board works to implement the governor's executive orders and help achieve the targets set forth in Assembly Bill 32. Many of the strategies Caltrans is using to help meet the targets in Assembly Bill 32 come from the California Strategic Growth Plan, which is updated each year.

Then-Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including \$100.7 billion in transportation funding during the next decade.

As shown on Figure 2-3, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A combination of investment options has been created that together would yield the promised reduction in congestion.

The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

Figure 2-3 Outcome of Strategic Growth Plan



As part of the *Climate Action Program at Caltrans* (December 2006, <http://www.dot.ca.gov/docs/ClimateReport.pdf>), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority.

Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars and light and heavy-duty trucks. Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislation efforts to increase fuel economy, and by its participation on the Climate Action Team. However, the control of the fuel economy standards is held by the U.S. Environmental Protection Agency and California Air

Resource Board. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California at Davis.

Table 2-6 summarizes the Department and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. For more detailed information about each strategy, please see *Climate Action Program at Caltrans* (December 2006), available at <http://www.dot.ca.gov/docs/ClimateReport.pdf>.

**Table 2-6 Climate Change Strategies**

Strategy	Program	Partnership		Method/Process	Estimated CO2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.007	2.17
Mainstream Energy & Greenhouse Gas into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
<b>Total</b>					<b>2.72</b>	<b>18.67</b>

### *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. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires.

These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by 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. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor 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.

The California Resources Agency [now the Natural Resources Agency, (Resources Agency)], through the interagency Climate Action Team, was directed to coordinate with local, regional, state and federal public and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts to California, assess California’s vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, Resources Agency was directed to request the National Academy of Science to prepare a *Sea Level Rise Assessment Report* by December 2010 to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- Range of uncertainty in selected sea level rise projections.
- 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.
- Discussion of future research needs regarding sea level rise for California.

Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Prior to the release of the final *Sea Level Rise Assessment Report*, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines.

Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.) This project is mandated to consider sea level rise under this executive order. However, the proposed project is programmed for construction funding in 2014/2015 and does not meet the above criteria.

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 an active participant in the efforts being conducted as part of then-Governor Schwarzenegger's

Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on *Sea Level Rise Assessment*, which was due for release by December 2010.

On August 3, 2009, the Natural Resources Agency, in cooperation and partnership with multiple state agencies, released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best-known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of discussion draft, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture.

The discussion draft focuses on sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to then-Governor Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

A revised version of the report was posted on the Natural Resource Agency website on December 2, 2009; it can be viewed at:  
<http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.pdf>.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change impacts, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities.

Once statewide planning scenarios become available, the Department will be able to review its current design standards to determine what changes, if any, may be warranted to protect the transportation system from sea level rise.

## **Chapter 3**      **Comments and Coordination**

---

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation, the level of analysis required, and to identify potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings and interagency coordination meetings.

This chapter summarizes the results of Caltrans' efforts to identify, address and resolve project-related issues through early and continuing coordination.

### ***Biological Resource Consultation***

August 16, 2007, December 1, 2009, June 28, 2010 – Caltrans received a sensitive species list from U.S. Fish and Wildlife Service, the California Natural Diversity Database, and the California Native Plant Society.

February 11, 2009 and October 20, 2009 – The U.S. Fish and Wildlife Service authorized Caltrans biologists to conduct wet-season surveys for the federally listed vernal pool fairy shrimp.

October 21, 2009 – Caltrans consulted with California Department of Fish and Game regarding a possible hybrid plant species in the project area and how it should be treated in terms of impacts.

January 21, 2011 – A Caltrans representative contacted the California Department of Fish and Game regarding mitigation ratios for the removal of oak trees. Laura Peterson-Diaz with the Department of Fish and Game indicated that mitigation ratios for oak trees vary and are based on the diameter at breast height. A mitigation ratio of 3:1 is used for trees with a diameter at breast height between 4-24 inches and a 10:1 ratio is used for trees with a diameter at breast height greater than 24 inches.

April 2011 – A Biological Assessment will be submitted to the U.S. Fish and Wildlife Service for a Formal Section 7 Consultation.

June 2011 – A Wetlands Verification will be submitted to the Army Corps of Engineers to begin the Section 404 permit process.

August 2011 – An application for a 2080.1 Permit will be submitted to the California Department of Fish and Game for a Consistency Determination for impacts to the California tiger salamander.

**Cultural Resource Consultation**

April 30, 2009 – Caltrans sent a letter to the Native American Heritage Commission requesting a review of Native American cultural resources and sacred sites within or adjacent to the project area, as well as a list of Native American individuals or organizations with knowledge of these resources and sites.

May 13, 2009 – Katy Sanchez of the Native American Heritage Commission responded that sacred lands were not present in the project area and provided a list of local contacts.

December 7, 2009 - Caltrans supplied a copy of the Historic Property Survey Report to the following consulting parties for a 30-day comment period:

- Kenneth Woodrow, Chairperson, Eshom Valley Band of Indians
- Neil Peyron, Chairman, Tule River Reservation
- Karin Wilson Kirkendal, Chairperson, Dumna Tribal Government
- Lawrence Bill, Interim Chairperson, Sierra Nevada Native American Coalition
- Jim Redmoon, Cultural Resources Representative, Dumna Tribal Government
- Jerry Brown, Chairperson, Chaushilha Tribe
- Elaine Fink, North Fork Rancheria, Western Mono
- Morris Reid, Picayune Rancheria, Chukchansi Tribe
- Lee Ann Walker Grant, Table Mountain Rancheria
- Katherine Perez, Northern Valley Yokuts

October 26 – 27, 2009 - Representatives from the North Fork Rancheria Tribe and Picayune Rancheria of Chukchansi Indians were present during subsurface studies for the Extended Phase I conducted by Caltrans cultural staff. Additional observers for the Dumna Tribe and Table Mountain Rancheria were unable to attend fieldwork activities.

January 20, 2010 – Caltrans sent a letter and a copy of the Area of Potential Effects mapping to Robert Mansfield with the County of Madera Planning Department for a

30-day comment period. The letter was regarding Caltrans' efforts in identifying historic properties and consulting with local Native American groups and individuals. As a result, a Finding of No Historic Properties Affected was determined for the National Environmental Policy Act and a Finding of No Impact for the California Environmental Quality Act.

***Other Consultation***

January 12, 2011 – Caltrans sent a letter and the Farmland Conversion Impact Rating Form to Natural Resources Conservation Service, Madera Office, to determine impacts to farmland in the project area.

February 9, 2011 – Jenny Johnson of the Natural Resources Conservation Service responded that the project area does not contain prime, unique statewide or local important farmland.



## **Chapter 4**      **List of Preparers**

---

This Initial Study/Environmental Assessment was prepared by the following Caltrans Central Region staff:

Sherry Alexander, Associate Landscape Architect. Masters in Landscape Architecture, California State Polytechnic University, Pomona; 4 years of landscape architecture experience and 17 years of planning experience  
Contribution: Prepared Visual Impact Assessment document.

Rebecca Bakhoud, Transportation Engineering Technician. B.A., Liberal Studies/Education, Minor in Mathematics, California State University, San Bernardino; 7 years of CADD/Microstation support and visual design experience. Contribution: Prepared design map.

Lori Bono, Biologist, URS Corporation. M.S., Biology, California State University, Fresno; 7 years of experience. Contribution: Prepared the Natural Environment Study and the Biological Assessment.

Abdulrahim Chafi, Transportation Engineer. Ph.D., Environmental Engineering, California Coast University, Santa Ana; B.S., M.S., Chemistry, and M.S., Civil/Environmental Engineering, California State University, Fresno; 12 years of environmental technical studies experience. Contribution: Prepared the Air Quality Study Report.

Rajeev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 16 years of environmental technical studies experience. Contribution: Prepared Water Quality Assessment.

Tom Fisher, Senior Hydraulic Engineer. B.S., Civil Engineering, San Jose State University, San Jose; 21 years of hydraulics experience. Contribution: Prepared the Floodplain/Hydrology memo.

Susan Greenwood, Associate Environmental Planner. B.S., Environmental Health Science, California State University, Fresno; 17 years of environmental health, hazardous waste, and hazardous material management experience. Contribution: Prepared the Hazardous Waste Scoping document.

Kelly Hobbs, Senior Environmental Planner. B.A., History, California State University, Fresno; 10 years of experience in California history; 2 years of experience in environmental planning management. Contribution: Senior Environmental Planner.

Anand Kapoor, Project Manager, Senior Transportation Engineer. B.E., Institute of Technology BHU, India, M.S., Environmental Engineering, Johns Hopkins University, Maryland, M.S., Transportation Management, Mineta Transportation Institute, San Jose State University; 7 years of experience in Project Development and 5 years in Project Management. Contribution: Project Manager.

David Lanner, Associate Environmental Planner. B.F.A., Art, Utah State University; 17 years of cultural resources experience. Contribution: Prepared the Historic Property Survey Report and Archaeology Survey Report.

Lea Spann, Associate Environmental Planner. B.A., Environmental Studies, University of California, Santa Barbara; 12 years of hazardous waste/materials experience and 3 ½ years of environmental planning experience. Contribution: Prepared the environmental document.

Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; 19 years of hazardous waste and water quality experience; 5 years of paleontology/geology experience. Contribution: Prepared the Paleontological Scoping document.

Vladimir Timofei, Transportation Engineer. M.S., Civil Engineering, California State University, Fullerton; 8 years of environmental technical studies experience. Contribution: Prepared the Noise Study document.

# **Appendix A California Environmental Quality Act Checklist**

---

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Initial Study/Environmental Assessment. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2.

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

**I. AESTHETICS:** Would the project:

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

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

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in the loss of forest land or conversion of forest land to non-forest use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

- |  |                          |                          |                                     |                                     |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Expose sensitive receptors to substantial pollutant concentrations?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**IV. BIOLOGICAL RESOURCES:** Would the project:

- |  |                          |                                     |                                     |                                     |
|--|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**V. CULTURAL RESOURCES:** Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

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

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

**VI. GEOLOGY AND SOILS:** Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

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

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

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

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

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

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

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

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans' determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

**VIII. HAZARDS AND HAZARDOUS MATERIALS:** Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**IX. HYDROLOGY AND WATER QUALITY:** Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Violate any water quality standards or waste discharge requirements?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- f) Otherwise substantially degrade water quality?
- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- j) Result in inundation by seiche, tsunami, or mudflow?

**X. LAND USE AND PLANNING:** Would the project:

- a) Physically divide an established community?
- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?
- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

**XI. MINERAL RESOURCES:** Would the project:

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
- b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

**XII. NOISE:** Would the project result in:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

**XIII. POPULATION AND HOUSING:** Would the project:

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

**XIV. PUBLIC SERVICES:**

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Fire protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Police protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Schools?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Parks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Other public facilities?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

**XV. RECREATION:**

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

**XVI. TRANSPORTATION/TRAFFIC:** Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in inadequate emergency access?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

**XVIII. MANDATORY FINDINGS OF SIGNIFICANCE**

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <p>a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>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)?</p>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |



# Appendix B Title VI Policy Statement

---

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION  
OFFICE OF THE DIRECTOR  
P.O. Box 942873, MS-49  
SACRAMENTO, CA 94273-0001  
PHONE (916) 654-5266  
FAX (916) 654-6608  
TTY 711



*Flex your power!  
Be energy efficient!*

July 20, 2010

## TITLE VI POLICY STATEMENT

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

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, or age, please visit the following web page:  
[http://www.dot.ca.gov/hq/bep/title\\_vi/t6\\_violated.htm](http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm).

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Charles Wahnnon, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14<sup>th</sup> Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353 or toll free 1-866-810-6346 (voice), TTY 711, fax (916) 324-1869, or via email: [charles\\_wahnnon@dot.ca.gov](mailto:charles_wahnnon@dot.ca.gov).

  
CINDY MCKIM  
Director

*"Caltrans improves mobility across California"*



# **Appendix C** Minimization and/or Mitigation Summary

---

## ***Human Environment***

### *Visual/Aesthetics*

All areas disturbed during construction would receive erosion control.

Mature vegetation would be preserved where possible by minimizing disturbance and protecting the existing vegetation.

Any disturbed areas that would not be paved as part of the proposed project, would receive erosion control and storm water runoff control measures.

The maximum recommended side slopes are 1:2 with transitions to 1:4 side slopes as needed. The newly built slopes should be designed to aesthetically blend with the surrounding landscape. To comply with the Highway Design Manual and the National Pollutants Discharge Elimination System Storm Water Permit, the slope design would require coordination and written approval from the appropriate qualified staff.

Due to minimal changes in the visual resources, mitigation is not required for visual impacts. Refer to Natural Communities below for biological mitigation and minimization measures for affected native oaks.

## ***Physical Environment***

### *Air Quality*

Caltrans Standard Specifications pertaining to dust control requirements are a required part of all construction contracts and should effectively reduce and control construction effects on air quality. The provisions of Caltrans Standard Specification, Section 7-1.01F “Air Pollution Control” and Section 10 “Dust Control,” require the contractor to comply with the San Joaquin Unified Air Pollution Control District’s rules, ordinances, and regulations. Additional dust control measures are discussed in Construction Impacts.

## **Biological Environment**

### *Natural Communities*

Although there is no established guideline that describes mitigation for impacts to native oak trees, Senate Concurrent Resolution No. 17 directs all state agencies to preserve and protect native oak woodlands to the greatest extent possible. Blue oak woodland habitat would be replaced through mitigation developed in cooperation with the California Department of Fish and Game.

Mitigation for blue oak woodland habitat would be accomplished by purchasing a conservation easement on nearby land with the appropriate blue oak woodland habitat and/or planting new blue oak trees in the area at a minimum of a 3:1 ratio. For those oak trees not affected by project-related activities, various avoidance and protection measures (for example, installation of protective fencing) would be implemented to the maximum extent feasible.

### *Wetlands and Other Waters of the U.S.*

Wetlands and other waters of the United States in the biological study area would be avoided to the maximum extent feasible. Construction would be limited to the areas within the project impact area and protection measures, such as protective fencing, storm water pollution prevention plan, would be implemented. Terms, conditions, and provisions provided in the Streambed Alteration Agreement, Clean Water Act Section 404 permit, and Clean Water Act Section 401 permit, which would be included in the contractor bid information, are designed to minimize and avoid impacts to waterways and wetlands.

Compensatory mitigation for permanent impacts to wetlands would be at a 1:1 ratio and would be fulfilled through the purchase of credits at an Army Corps of Engineers-approved conservation bank during the Clean Water Act Section 404 permit process. Compensatory mitigation would not be required for temporary impacts, because temporary impacts would not be from fill placement but from disturbance due to equipment access, which the Army Corps of Engineers and Regional Water Quality Control Boards do not regulate.

All temporary impacts to wetlands and waters of the United States would be restored to pre-project conditions and revegetated with native species. Additional wetland credits would be purchased for ephemeral pool habitat for the vernal pool fairy shrimp and California tiger salamander that would also compensate for wetland impacts.

### *Plant Species*

#### *Spiny-Sepaled Button-Celery*

All spiny-sepaled button-celery areas that can be avoided during construction would be established as an Environmental Sensitive Area by installing orange mesh fencing and/or new right-of-way fencing to avoid unplanned, accidental, or construction-related impacts.

In areas where avoidance is not possible, the following minimization measures would be implemented to minimize impacts during construction activities:

- Under the direction of a Caltrans biologist, topsoil would be collected and salvaged from areas where spiny-sepaled button-celery is to be disturbed.
- Salvaged topsoil would be stored at an appropriate site within the project area.
- Topsoil would be replaced in areas where temporary disturbance to spiny-sepaled button-celery occurred.

Compensatory mitigation is not proposed for impacts to spiny-sepaled button-celery; however, mitigation credits would be purchased for impacts to vernal pool fairy shrimp and California tiger salamander habitat that would also benefit this plant species.

### *Animal Species*

#### *Western Spadefoot Toad*

The avoidance and minimization measures implemented for the vernal pool fairy shrimp and California tiger salamander, as discussed in Section 2.3.5, would benefit the western spadefoot toad. Compensatory mitigation is not proposed due to compensatory mitigation for the vernal pool fairy shrimp and California tiger salamander.

#### *Burrowing Owl*

Pre-construction surveys would be performed by a qualified biologist. All pre-construction surveys and minimization efforts would be done in accordance with the California Department of Fish and Game's protocol.

If burrowing owls are present on the construction site during the breeding season (April 15 through July 15) and appear to be engaged in nesting behavior, a fenced 500-foot buffer would be installed between the nest site or active burrow and any earth-moving activity or other disturbance. This 500-foot buffer would remain until a qualified biologist determines that the young have fledged, typically by August 31.

If burrowing owls are present in the non-breeding season, they must be moved from the project site. Relocation would not begin until October 1 and must be completed by February 1. After relocation, the area where owls occurred and its immediate vicinity (500 feet) would be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document that owls are not reoccupying the site.

Avoidance and/or relocation requires that a minimum of 6.5 acres of foraging habitat be permanently preserved as close to the occupied burrow sites for each pair of breeding owls or single unpaired resident bird. When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.

Compensatory mitigation is not proposed for the burrowing owl.

*Pallid Bat, Western Mastiff Bat, and American Badger*

Pre-construction surveys would be performed by a qualified biologist within the biological study area before the start of construction due to the potential that these species could inhabit the area.

If an active roost or den is detected, the Department of Fish and Game would be consulted on avoidance and minimization efforts, such as establishing an Environmentally Sensitive Area around the site to prevent any disturbance. Work may be temporarily stopped if roosting bats or denning badgers are found in the project impact area.

Compensatory mitigation is not proposed for these species.

*Migratory Birds*

Caltrans Standard Specification, Section 14 “Bird Protection” would be included in the construction contract which would require the contractor to notify the project engineer prior to beginning any construction-related activity during the nesting season (February 15 through September 1). The provision would also require a pre-construction survey for migratory birds within the proposed project area and adjacent habitat no more than 14 days prior to project construction and tree removal.

### *Threatened and Endangered Species*

Pending completion of the Biological Assessment and formal consultation with the resource agencies, the following measures would minimize the potential for impacts to threatened and endangered species:

#### *Vernal Pool Fairy Shrimp*

For ephemeral pools that can be avoided during construction, Environmentally Sensitive Area fencing and/or new right-of-way fencing would be installed to avoid unplanned, accidental, or construction-related impacts.

In areas where avoidance is not possible, the following minimization measures would be implemented to minimize impacts to this species during construction activities:

- Chemicals, lubricants and petroleum products would be closely monitored and precautions would be used to avoid spills. Any spills would be cleaned up immediately.
- Habitat temporarily affected would be restored to pre-project conditions.

All potential impacts to vernal pool fairy shrimp habitat (with concurrent compensation for California tiger salamander habitat) would be compensated by preserving habitat in areas that are important for the recovery of the vernal pool fairy shrimp population. Each acre of lost vernal pool fairy shrimp habitat, due to project related impacts, would be replaced with 3 acres of quality habitat at a U.S. Fish and Wildlife Service- and California Department of Fish and Game-approved mitigation bank. The project would potentially affect 0.15 acre of vernal pool fairy shrimp habitat. Therefore, at a 3:1 compensation ratio, 0.45 acre of quality vernal pool fairy shrimp habitat would be acquired and preserved in perpetuity.

#### *Valley Elderberry Longhorn Beetle*

Environmentally Sensitive Area fencing or right-of-way fencing would be installed with a buffer zone of approximately 130 feet from the elderberry shrub, to avoid unplanned, accidental, or construction-related impacts to the elderberry shrub.

#### *California Tiger Salamander*

For breeding and upland habitat that can be avoided during construction, Environmentally Sensitive Area fencing and/or new right-of-way fencing would be installed to avoid unplanned, accidental, or construction-related impacts.

In areas where avoidance is not possible, the following minimization measures would be implemented to minimize impacts to this species during construction activities:

- Chemicals, lubricants and petroleum products would be closely monitored and precautions would be used to avoid spills. Any spills would be cleaned up immediately.
- Habitat temporarily affected would be restored to pre-project conditions.

Caltrans would compensate for all potential impacts to California tiger salamander habitat (with concurrent compensation for vernal pool fairy shrimp habitat) by preserving habitat in areas that are important for the recovery of the California tiger salamander population. Each acre of lost California tiger salamander habitat, due to project related impacts, would be replaced with 3 acres for permanent impacts and 1.1 acres for temporary impacts of quality habitat at a U.S. Fish and Wildlife Service- and California Department of Fish and Game-approved mitigation bank.

The project would permanently affect 21.75 acres and temporarily affect 18.51 acres of upland habitat. Therefore, at a 3:1 compensation ratio for permanent impacts and 1.1:1 compensation ratio for temporary impacts, a total of 85.61 acres of quality California tiger salamander upland habitat would be acquired and preserved in perpetuity.

An added 0.15 acre of California tiger salamander breeding habitat would be permanently affected. At a 3:1 compensation ratio for permanent impacts, an additional 0.45 acre of quality California tiger salamander breeding habitat would be acquired (during concurrent compensation for vernal pool fairy shrimp habitat) and preserved in perpetuity for the recovery of the California tiger salamander.

### Swainson's Hawk

Pre-construction surveys would be performed by a qualified biologist within the biological study area and within a half-mile radius around the biological study area before the start of construction due to the potential that a hawk could build a nest within the area.

If an active nest is detected, the Department of Fish and Game would be consulted on avoidance and minimization efforts, such as establishing an Environmentally Sensitive Area around the nest site to prevent disturbance and/or monitoring the active nest site during construction. Work may be temporarily stopped if nesting birds are found within the biological study area.

Compensatory mitigation is not proposed for the Swainson's hawk.

### *Invasive Species*

Clean fill would be imported to the project site. Any excess soil that cannot remain on site would be disposed of in a manner that would not spread invasive plants and their seeds. If there is an extensive amount of fill, it can be modified to only include the top six inches of soil. Care would be taken to avoid including any species that occur on the California Invasive Plant Council's *Invasive Plant Inventory* in the Caltrans erosion control seed mix or landscaping plans for the project.

### **Construction Impacts**

#### *Dust Control*

Caltrans provisions/specifications pertaining to dust and dust palliative are a required part of all construction contracts. The following management measures are standard avoidance and minimization steps to prevent construction effects on air quality:

- The project would be subject to a Dust Control Permit from the San Joaquin Unified Air Pollution Control District. Following the District's Regulation VIII requirements and the Caltrans Non-Standard Special Provisions for dust should minimize dust during construction.
- The provisions of Caltrans Standard Specification, Section 7-1.01F "Air Pollution Control" and Section 10 "Dust Control" require the contractor to comply with the San Joaquin Unified Air Pollution Control District's rules, ordinances, and regulations.

#### *Aerially Deposited Lead*

A standard special provision requiring a Lead Compliance Plan for worker safety would also be a part of the project construction package to protect construction workers and the public from potential exposure to lead in the soil. Statistical analysis of soil samples taken in the area indicates that although aerially deposited lead is present, levels are well below regulatory requirements for special handling or disposal (Hazardous Waste Scoping Document, October 2007).

#### *Storm Water Runoff*

It is Caltrans policy to incorporate management measures and best management practices pertaining to storm water and the National Discharge Elimination System for a statewide permit to prevent impacts to water quality during the planning, design,

construction, and operational and maintenance stages. Some management measures include, but are not limited to the following:

- Prepare and implement an approved Storm Water Pollution Prevention Plan, incorporating applicable Temporary Construction Site best management practices within the project limits.
- Limit disturbance of natural drainage features and vegetation. Where feasible, vegetated strips and swales would be used to remove sediments from storm water runoff prior to reaching any natural drainage courses.
- Limit soil disturbances such as clearing and grubbing/grading. Cut and fill slopes would be limited and made as flat as possible to reduce erosion and sediment loss.
- Develop and implement runoff pollution controls to reduce pollutant concentrations and volumes.
- Erosion control measures, such as slope vegetation, flared end sections and rock slope protection at inlets and outlets, would also be used to minimize or eliminate increased sediment loading to surface runoff.
- Ensure proper storage and disposal of toxic material.

The project would disturb about 40 acres of soil. Caltrans' National Pollutant Discharge Elimination System Permit requires coordination with the Regional Water Quality Control Board when more than 1 acre is disturbed. The following is required:

- A Notification of Construction will be submitted to the Regional Water Quality Control Board at least 30 days prior to the start of construction activities.
- A Storm Water Pollution Prevention Plan will be developed by the contractor and submitted to the Caltrans Resident Engineer for approval prior to the start of construction.
- A Notice of Completion of Construction will be submitted to the Regional Water Quality Control Board upon completion of the construction and stabilization of the site.

# Appendix D USFWS Official Species List

Sacramento Fish & Wildlife Office Species List

Page 1 of 1



**United States Department of the Interior  
FISH AND WILDLIFE SERVICE**

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825



June 28, 2010

Document Number: 100628033525

Frank Meraz  
California Department of Transportation  
2015 E. Shields Ave, Suite 100  
Fresno, CA 93726

Subject: Species List for Madera 41 Passing Lane Project

Dear: Mr. Meraz

We are sending this official species list in response to your June 28, 2010 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be September 26, 2010.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at [www.fws.gov/sacramento/es/branches.htm](http://www.fws.gov/sacramento/es/branches.htm).

Endangered Species Division



[http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_letter.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_letter.cfm)

6/28/2010

**U.S. Fish & Wildlife Service  
Sacramento Fish & Wildlife Office**  
**Federal Endangered and Threatened Species that Occur in  
or may be Affected by Projects in the Counties and/or  
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 100628033525

Database Last Updated: April 29, 2010

---

Quad Lists

## Listed Species

## Invertebrates

- Branchinecta conservatio*  
Conservancy fairy shrimp (E)
- Branchinecta lynchi*  
Critical habitat, vernal pool fairy shrimp (X)  
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*  
valley elderberry longhorn beetle (T)

## Fish

- Hypomesus transpacificus*  
delta smelt (T)
- Oncorhynchus mykiss*  
Central Valley steelhead (T) (NMFS)

## Amphibians

- Ambystoma californiense*  
California tiger salamander, central population (T)  
Critical habitat, CA tiger salamander, central population (X)
- Rana draytonii*  
California red-legged frog (T)

## Reptiles

- Gambelia (=Crotaphytus) sila*  
blunt-nosed leopard lizard (E)
- Thamnophis gigas*  
giant garter snake (T)

## Mammals

- Dipodomys nitratoides exilis*  
Fresno kangaroo rat (E)
- Vulpes macrotis mutica*  
San Joaquin kit fox (E)

## Plants

- Calyptridium pulchellum*  
Mariposa pussy-paws (T)
- Castilleja campestris ssp. succulenta*

Critical habitat, succulent (=fleshy) owl's-clover (X)  
succulent (=fleshy) owl's-clover (T)

*Orcuttia inaequalis*

Critical habitat, San Joaquin Valley Orcutt grass (X)  
San Joaquin Valley Orcutt grass (T)

*Orcuttia pilosa*

Critical habitat, hairy Orcutt grass (X)  
hairy Orcutt grass (E)

*Pseudobahia bahiifolia*

Hartweg's golden sunburst (E)

*Tuctoria greenei*

Critical habitat, Greene's tuctoria (=Orcutt grass) (X)

Quads Containing Listed, Proposed or Candidate Species:

- FRIANT (378B)
- LANES BRIDGE (379A)
- GREGG (379B)
- O'NEALS (398B)
- MILLERTON LAKE WEST (398C)
- KNOWLES (399A)
- RAYMOND (399B)
- DAULTON (399C)
- LITTLE TABLE MTN. (399D)

---

**County Lists**

**Madera County**

**Listed Species**

**Invertebrates**

*Branchinecta longiantenna*  
longhorn fairy shrimp (E)

*Branchinecta lynchi*  
Critical habitat, vernal pool fairy shrimp (X)  
vernal pool fairy shrimp (T)

*Desmocerus californicus dimorphus*  
valley elderberry longhorn beetle (T)

*Lepidurus packardii*  
Critical habitat, vernal pool tadpole shrimp (X)  
vernal pool tadpole shrimp (E)

**Fish**

*Oncorhynchus (=Salmo) clarki henshawi*  
Lahontan cutthroat trout (T)

## Sacramento Fish &amp; Wildlife Office Species List

Page 3 of 6

*Oncorhynchus (=Salmo) clarki seleniris*  
Paiute cutthroat trout (T)

*Oncorhynchus mykiss*  
Central Valley steelhead (T) (NMFS)

## Amphibians

*Ambystoma californiense*  
California tiger salamander, central population (T)  
Critical habitat, CA tiger salamander, central population (X)

*Rana draytonii*  
California red-legged frog (T)

## Reptiles

*Gambelia (=Crotaphytus) sila*  
blunt-nosed leopard lizard (E)

*Thamnophis gigas*  
giant garter snake (T)

## Mammals

*Dipodomys nitratooides exilis*  
Fresno kangaroo rat (E)

*Vulpes macrotis mutica*  
San Joaquin kit fox (E)

## Plants

*Calyptridium pulchellum*  
Mariposa pussy-paws (T)

*Castilleja campestris ssp. succulenta*  
Critical habitat, succulent (=fleshy) owl's-clover (X)  
succulent (=fleshy) owl's-clover (T)

*Cordylanthus palmatus*  
palmate-bracted bird's-beak (E)

*Orcuttia inaequalis*  
Critical habitat, San Joaquin Valley Orcutt grass (X)  
San Joaquin Valley Orcutt grass (T)

*Orcuttia pilosa*

## Sacramento Fish &amp; Wildlife Office Species List

Page 4 of 6

Critical habitat, hairy Orcutt grass (X)  
hairy Orcutt grass (E)

*Pseudobahia bahiifolia*  
Hartweg's golden sunburst (E)

*Tuctoria greenei*  
Critical habitat, Greene's tuctoria (=Orcutt grass) (X)

**Candidate Species****Amphibians**

*Bufo canorus*  
Yosemite toad (C)

*Rana muscosa*  
mountain yellow-legged frog (C)

**Mammals**

*Martes pennanti*  
fisher (C)

**Key:**

- (E) *Endangered* - Listed as being in danger of extinction.  
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.  
(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.  
(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.  
*Critical Habitat* - Area essential to the conservation of a species.  
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.  
(C) *Candidate* - Candidate to become a proposed species.  
(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.  
(X) *Critical Habitat* designated for this species

**Important Information About Your Species List****How We Make Species Lists**

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be

[http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_list.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_list.cfm)

6/28/2010

carried to their habitat by air currents.

- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

### Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

### Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

### Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

### Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special

management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

#### Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

#### Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

#### Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

#### Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be September 26, 2010.



# Appendix E CNDDDB Species List

California Department of Fish and Game Natural Diversity Database Selected Elements by Common Name - Portrait						
Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 American badger <i>Taxidea taxus</i>	AMAJF04010			G5	S4	SC
2 An andrenid bee <i>Andrena macswaini</i>	IIHYM35040			G1G3	S1S3	
3 California horned lark <i>Eremophila alpestris actia</i>	ABPAT02011			G5T3Q	S3	
4 California linderiella <i>Linderiella occidentalis</i>	ICBRA06010			G3	S2S3	
5 California tiger salamander <i>Ambystoma californiense</i>	AAAAA01180	Threatened	unknown code...	G2G3	S2S3	SC
6 Great Valley Mixed Riparian Forest	CTT61420CA			G2	S2.2	
7 Hartweg's golden sunburst <i>Pseudobahia bahiifolia</i>	PDAST7P010	Endangered	Endangered	G2	S2.1	1B.1
8 Hoover's calycadenia <i>Calycadenia hooveri</i>	PDAST1P040			G2	S2.2	1B.3
9 Madera leptosiphon <i>Leptosiphon serrulatus</i>	PDPLM09130			G1?	S1?	1B.2
10 Mariposa pussypaws <i>Calyptridium pulchellum</i>	PDPOR09060	Threatened		G1	S1.1	1B.1
11 Northern Claypan Vernal Pool	CTT44120CA			G1	S1.1	
12 Northern Hardpan Vernal Pool	CTT44110CA			G3	S3.1	
13 San Joaquin Valley Orcutt grass <i>Orcuttia inaequalis</i>	PMPOA4G060	Threatened	Endangered	G2	S2.1	1B.1
14 San Joaquin kit fox <i>Vulpes macrotis mutica</i>	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3	
15 San Joaquin pocket mouse <i>Perognathus inornatus inornatus</i>	AMAFD01061			G4T2T3	S2S3	
16 Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070		Threatened	G5	S2	
17 Sycamore Alluvial Woodland	CTT62100CA			G1	S1.1	
18 Table Mountain harvestman <i>Calicina mesaensis</i>	ILARAU8070			G1	S1	
19 bald eagle <i>Haliaeetus leucocephalus</i>	ABNKC10010	Delisted	Endangered	G5	S2	
20 beaked clarkia <i>Clarkia rostrata</i>	PDONA050Y0			G2	S2.1	1B.3
21 burrowing owl <i>Athene cucularia</i>	ABNSB10010			G4	S2	SC
22 double-crested cormorant <i>Phalacrocorax auritus</i>	ABNFD01020			G5	S3	
23 dwarf downingia <i>Downingia pusilla</i>	PDCAM060C0			G3	S3.1	2.2
24 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
25 golden eagle <i>Aquila chrysaetos</i>	ABNKC22010			G5	S3	

Appendix E • CNDDDB Species List

California Department of Fish and Game Natural Diversity Database Selected Elements by Common Name - Portrait							
Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS	
26 hairy Orcutt grass <i>Orcuttia pilosa</i>	PMPOA4G040	Endangered	Endangered	G2	S2.1	1B.1	
27 hardhead <i>Mylopharodon conocephalus</i>	AFCJB25010			G3	S3	SC	
28 hoary bat <i>Lasiurus cinereus</i>	AMACC05030			G5	S4?		
29 midvalley fairy shrimp <i>Branchinecta mesovallensis</i>	ICBRA03150			G2	S2		
30 moestan blister beetle <i>Lytta moesta</i>	IICOL4C020			G2	S2		
31 molestan blister beetle <i>Lytta molesta</i>	IICOL4C030			G2	S2		
32 orange lupine <i>Lupinus citrinus var. citrinus</i>	PDFAB2B103			G2T2	S2.2	1B.2	
33 pallid bat <i>Antrozous pallidus</i>	AMACC10010			G5	S3	SC	
34 spiny-sepaled button-celery <i>Eryngium spinosepalum</i>	PDAP10Z0Y0			G2	S2.2	1B.2	
35 spotted bat <i>Euderma maculatum</i>	AMACC07010			G4	S2S3	SC	
36 succulent owl's-clover <i>Castilleja campestris ssp. succulenta</i>	PDSCR0D3Z1	Threatened	Endangered	G4?T2	S2.2	1B.2	
37 valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened		G3T2	S2		
38 vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened		G3	S2S3		
39 western mastiff bat <i>Eumops perotis californicus</i>	AMACD02011			G5T4	S3?	SC	
40 western pond turtle <i>Actinemys marmorata</i>	ARAAD02030			G3G4	S3	SC	
41 western spadefoot <i>Spea hammondi</i>	AAABF02020			G3	S3	SC	

# Appendix F CNPS Species List

CNPS Inventory: search results

Page 1 of 1



**CNPS**  
*California Native Plant Society*

**Inventory of Rare and Endangered Plants**

v7-10b 4-21-10

**Status:** search results - Mon, Jun. 28, 2010 17:25 c

{QUADS\_123} = " m/399D|379A|379B|398B|398C|378B|399A|399B"

Tip: CNPS\_LIST: "List 3" (note the field name) returns only taxa on List 3. "List 3" by itself, matches the phrase wherever found. Browse the list of field names.[all tips and help.]  
[search history]

**Your Quad Selection:** Little Table Mountain (399D) 3711917, Lanes Bridge (379A) 3611987, Gregg (379B) 3611988, O'neals (398B) 3711926, Millerton Lake West (398C) 3711916, Friant (378B) 3611986, Knowles (399A) 3711927, Raymond (399B) 3711928, Daulton (399C) 3711918

**Hits 1 to 9 of 9**  
Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	<input type="checkbox"/>	1	<u><a href="#">Calyptridium pulchellum</a></u>	Mariposa pussypaws	Portulacaceae	List 1B.1
	<input type="checkbox"/>	1	<u><a href="#">Castilleja campestris ssp. succulenta</a></u>	succulent owl's-clover	Scrophulariaceae	List 1B.2
	<input type="checkbox"/>	1	<u><a href="#">Downingia pusilla</a></u>	dwarf downingia	Campanulaceae	List 2.2
	<input type="checkbox"/>	1	<u><a href="#">Eryngium spinosepalum</a></u>	spiny-sepaled button-celery	Apiaceae	List 1B.2
	<input type="checkbox"/>	1	<u><a href="#">Leptosiphon serrulatus</a></u>	Madera leptosiphon	Polemoniaceae	List 1B.2
	<input type="checkbox"/>	1	<u><a href="#">Lupinus citrinus</a></u> var. <u><a href="#">citrinus</a></u>	orange lupine	Fabaceae	List 1B.2
	<input type="checkbox"/>	1	<u><a href="#">Orcuttia inaequalis</a></u>	San Joaquin Valley Orcutt grass	Poaceae	List 1B.1
	<input type="checkbox"/>	1	<u><a href="#">Orcuttia pilosa</a></u>	hairy Orcutt grass	Poaceae	List 1B.1
	<input type="checkbox"/>	1	<u><a href="#">Pseudobahia bahifolia</a></u>	Hartweg's golden sunburst	Asteraceae	List 1B.1

To save selected records for later study, click the ADD button.

Selections will appear in a new window.

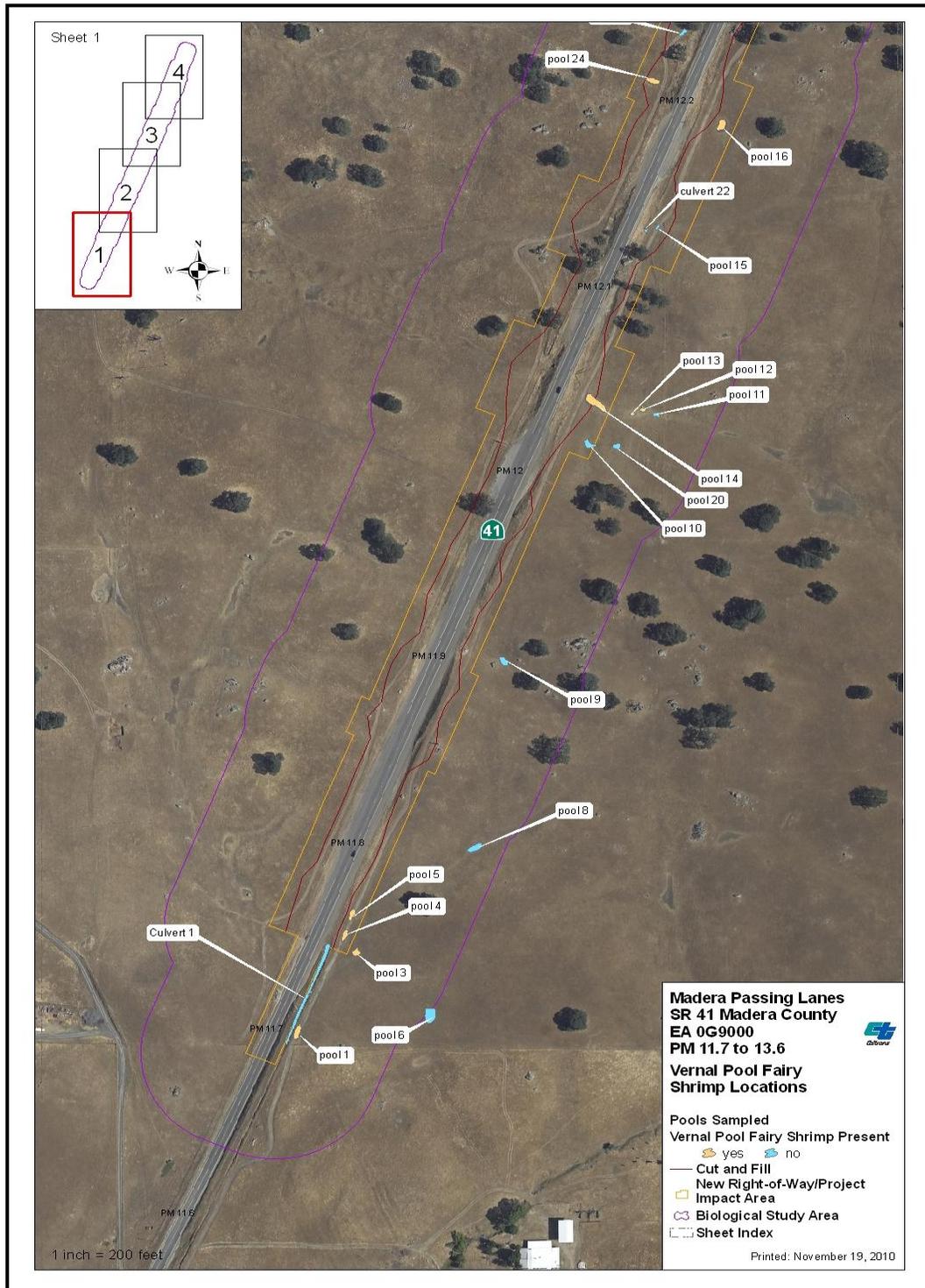
No more hits.

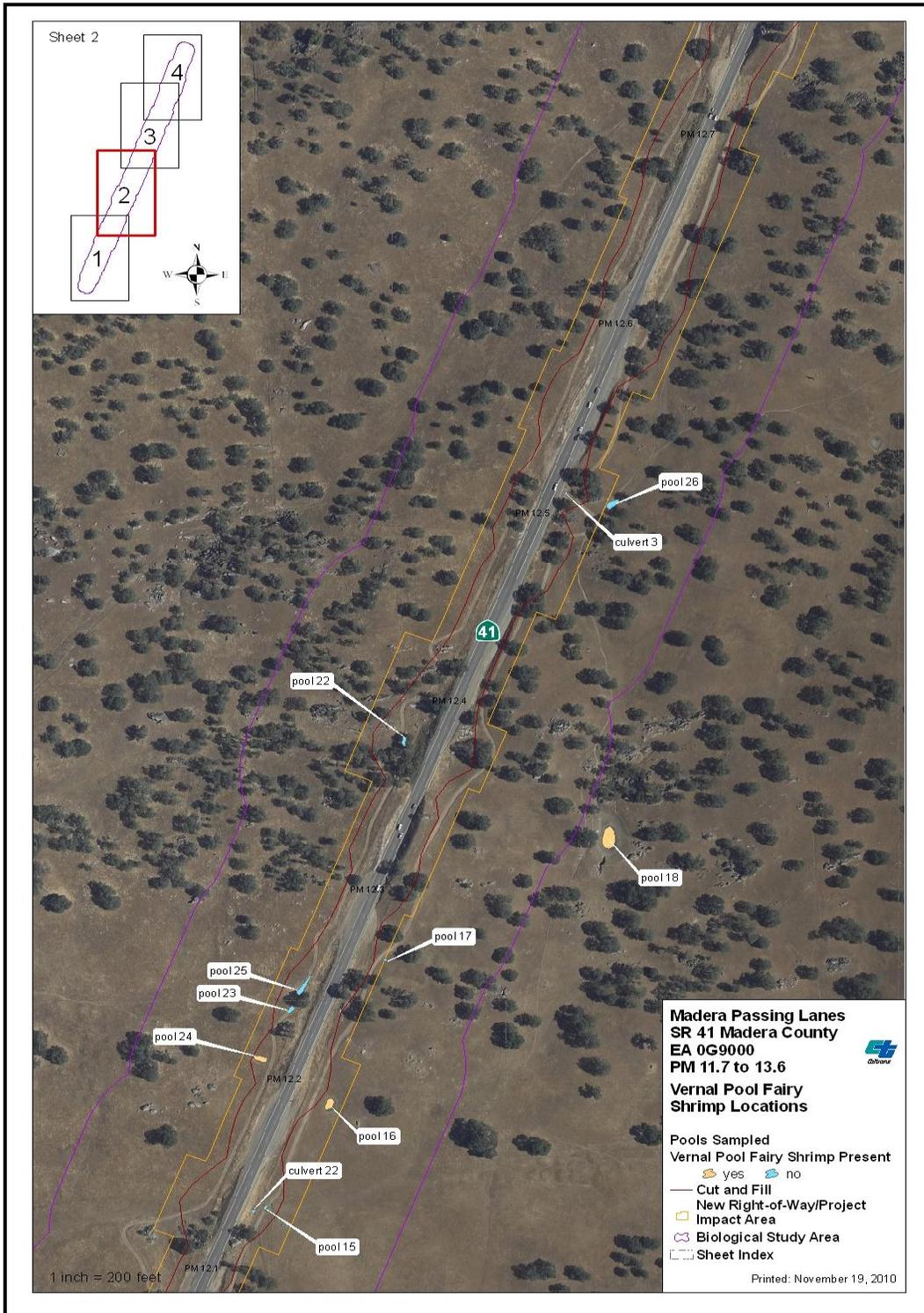
powered by

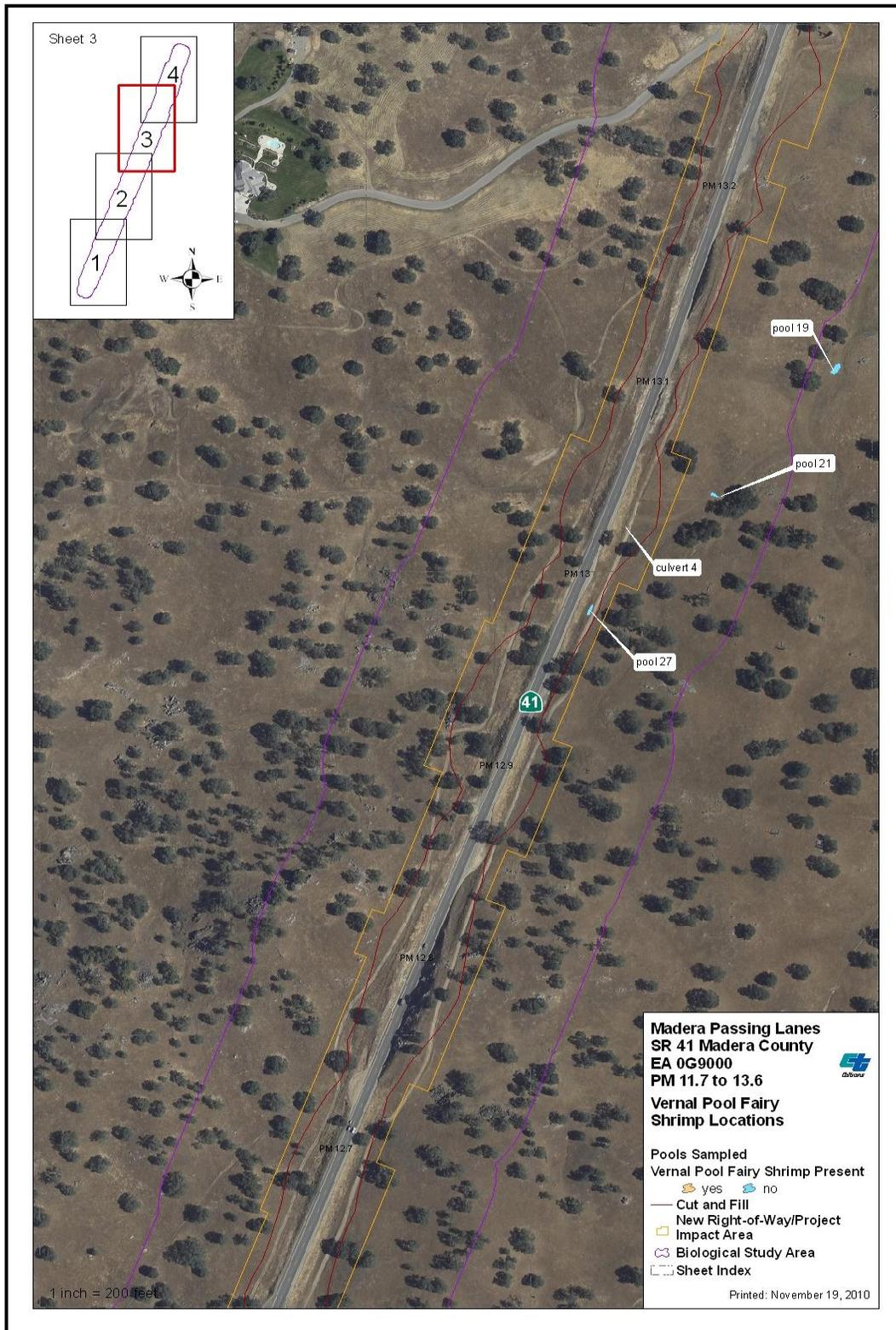
http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi/Search?f%3A1=COUNTIES&e%3A1=... 6/28/2010

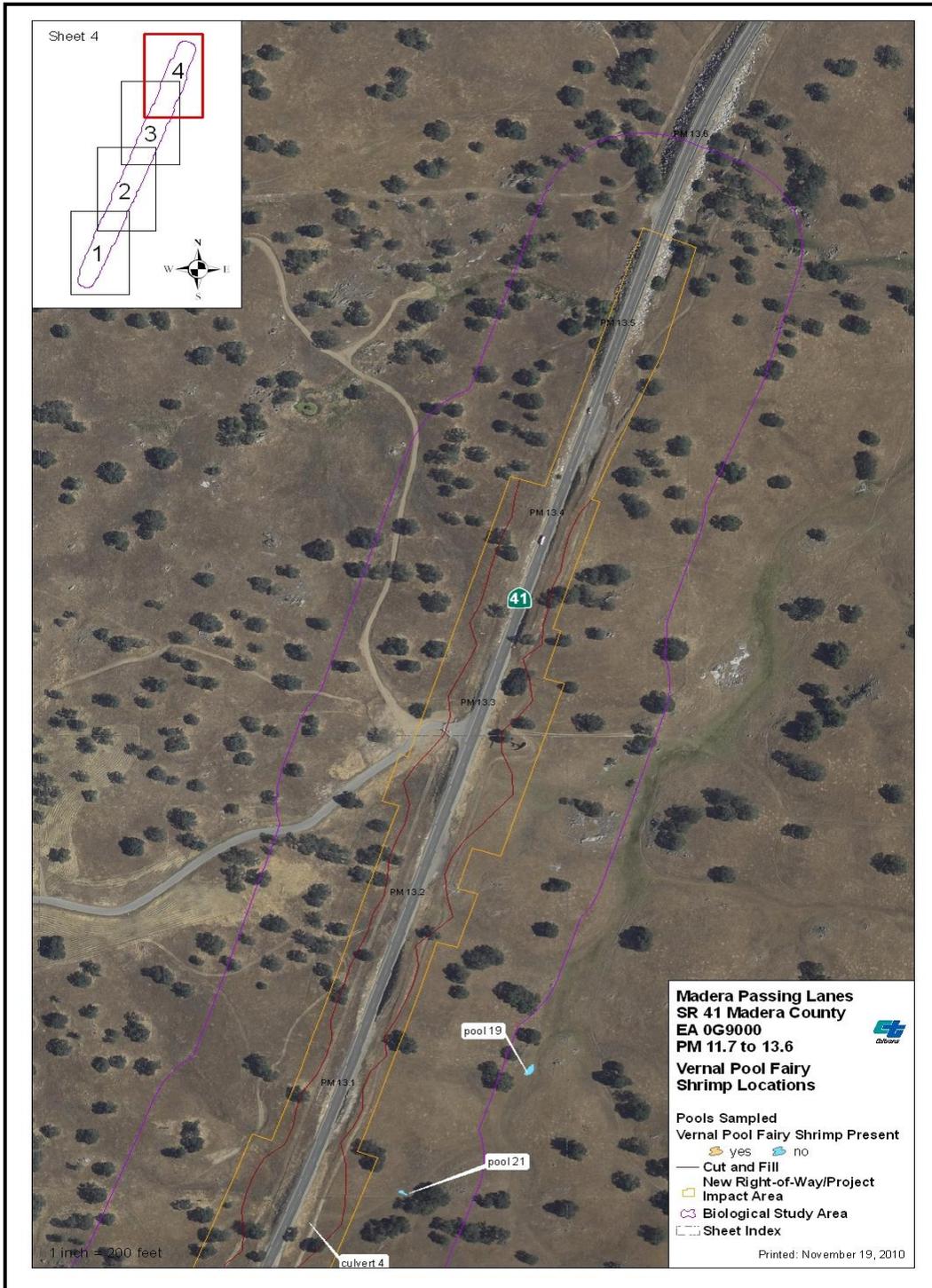


# Appendix G Vernal Pool Fairy Shrimp Sampling Location Map









## **List of Technical Studies that are Bound Separately**

Air Quality Report

Noise Memo

Water Quality Assessment Memo

Floodplain/Hydrology Memo

Farmland Conversion Impact Rating Form

Natural Environment Study

Historical Property Survey Report

- Archaeological Survey Report

Hazardous Waste Scoping Document

Visual Impact Assessment

Initial Paleontology Scoping Document