Olancha/Cartago Four-Lane Project

On U.S. Highway 395 in Inyo County
from 2.1 miles south of LA Aqueduct Bridge (#48-10)
to 0.2 mile south of Ash Creek Bridge (#48-11)
09-INY-395-PM 29.2/PM 41.8
Project ID 09-0000-0030
SCH# 2010091023

Draft Environmental Impact Report/ Environmental Assessment and Section 4(f) Evaluation

Prepared by the
U.S. Department of Transportation
Federal Highway Administration
and the
State of California Department of Transportation

July 2015

General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) have prepared this Draft Environmental Impact Report/Environmental Assessment (DEIR/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project in Inyo County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The Federal Highway Administration (FHWA) is the lead agency under the National Environmental Policy Act (NEPA). Caltrans and FHWA circulated an Initial Study/Environmental Assessment from September 2, 2010 to October 22, 2010, but have subsequently determined that an Environmental Impact Report is warranted for the project. This Draft Environmental Impact Report explains why the project is being proposed, the alternatives being considered for the project, the existing environment that could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read the document.
- Additional copies of the document and the related technical studies are available for review at the following locations: Caltrans District Office, District 9, 500 South Main Street, Bishop, CA 93514; the Lone Pine Library at 127 West Bush Street, Lone Pine, CA 93545; the Eastern Sierra Interagency Visitor Center at the junction of U.S. Highway 395 and State Route 136 (1 mile south of Lone Pine); Olancha Post Office 100 South Highway 395, Olancha, CA 93549, and electronically at http://www.dot.ca.gov/dist9/projects/olancha/
- Attend the public hearing.
- We'd like to hear what you think. If you have any comments regarding the proposed project, please attend the public hearing, and/or send your written comments to Caltrans by the deadline.
- Submit comments via U.S. mail to: Kirsten Helton, Senior Environmental Planner, California Department of Transportation, 855 M Street, Suite 200, Fresno, CA 93721.
- Submit comments via email to: kirsten.helton@dot.ca.gov.
- Submit comments by the deadline: October 10, 2015.

What happens next:

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

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Kirsten Helton, Senior Environmental Planner, 855 M Street, Suite 200, Fresno, CA 93721; (559) 445-6461 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice), or 711.

SCH# 2010091023
09-INY-395-PM 29.2/41.8
Project ID: 0900000030

Widen and realign U.S. Highway 395 to four lanes from post miles 29.2 to 41.8 in Inyo County

DRAFT ENVIRONMENTAL IMPACT REPORT /ENVIRONMENTAL ASSESSMENT and Section 4(f) Evaluation

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C) and 49 USC 303

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

and

THE STATE OF CALIFORNIA
Department of Transportation

July 8, 2015
Date of Approval

Brent L. Green
District 9 Director
California Department of Transportation
CEQA Lead Agency

July 9, 2015
Date of Approval

Vincent P. Mammano
Division Administrator
Federal Highway Administration
NEPA Lead Agency

The following person(s) may be contacted for additional information about this document:

Kirsten Helton, Senior Environmental Planner
855 M Street, Suite 200
Fresno, CA 93721
(559) 445-6461

Summary

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

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

After receiving comments from the public and reviewing agencies, a Final EIR/EA will be prepared. Caltrans may prepare additional environmental and/or engineering studies to address comments. The Final EIR/EA will include responses to comments received on the Draft EIR/EA and will identify the preferred alternative. If the decision is made to approve the project, a Notice of Determination will be published for compliance with CEQA, and FHWA will decide whether to issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) for compliance with NEPA. A Notice of Availability (NOA) of the FONSI will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with Executive Order 12372.

The California Department of Transportation (Caltrans), as CEQA lead agency, and the Federal Highway Administration, as NEPA lead agency, propose to convert approximately 12.6 miles of the existing U.S. Highway 395 from a two-lane conventional highway into a four-lane expressway or partial conventional four-lane highway from post mile 29.2 to post mile 41.8 in Inyo County. The project proposes six alternatives with varying amounts of construction on new alignments. The new facility will have four 12-foot lanes with a median of variable width. There will be paved shoulders throughout the project. This project also proposes constructing new concrete bridges to cross the Los Angeles Aqueduct and installing concrete box culverts and smaller pipe culverts throughout the project limits to promote drainage. Under some of the proposed alternatives, this project may extend State Route 190 to intersect with the proposed improvements. A material site at the end of Fall Road and south of Olancha Creek would be available for use to provide soil and road materials for the project.

Caltrans and the Federal Highway Administration also propose a route adoption for U.S. Highway 395 from approximately post mile 30.0 to post mile 40.0. The route adoption is necessary to adopt the constructed alignment into the State Highway System and also to accommodate the change from a conventional highway to a controlled-access expressway on a new alignment. State Route 190 would need a

route adoption to accommodate the extension to the new alignment or a route re-designation to use portions of the existing U.S. Highway 395 as State Route 190.

The purpose of the project is to accommodate increased traffic demands by improving level of service, enhancing safety by allowing faster-moving traffic to pass slower vehicles, and providing route continuity. Increasing traffic demand on U.S. Highway 395 requires that the existing two-lane conventional highway be improved and upgraded to current highway design standards. Unlike the rest of U.S. Highway 395 in Inyo County, which is four lanes, this portion of the highway is a mostly two-lane conventional highway that consists of a 24-foot-wide traveled way with 8-foot paved shoulders. Through more than half the project limits, barrier striping prohibits drivers from passing slower-moving vehicles. In areas without barrier striping, the high traffic volumes further restrict passing opportunities. It is possible that the resulting longer travel time could create frustrated drivers who are willing to attempt unsafe maneuvers. These factors have led to a traffic accident fatality rate higher than the statewide average.

In addition, as mentioned above, this section of U.S. Highway 395 is the only part of the highway that is mostly a two-lane conventional highway. Thus, the north and south ends of the project limits currently connect to four-lane divided expressways, creating an inconsistent travel way, resulting in a lack of route continuity.

A draft environmental document (Initial Study with Proposed Mitigated Negative Declaration and Environmental Assessment) was circulated for public review from September 2, 2010, to October 22, 2010. Written comments received on the draft document were collected and reviewed. Selection of a preferred alternative was to be made after fully evaluating the environmental impacts and considering all public and agency comments. Before determining the preferred alternative, Caltrans District 9 Director Tom Hallenbeck reviewed the recommendation of the Project Development Team, the Initial Study/Environmental Assessment, other project studies, comments received, survey results, and information received at the public meeting and the public hearing. Ultimately, the director combined portions of Alternatives 3 and 4 to create an alternative that minimized impacts and maximized benefits of the project. The director's decision was publicized via a press release on June 29, 2011, and was also publicized in the September 17, 2011, issue of *The Inyo Register* in an article titled "Caltrans' Olancha/Cartago decision a balancing act."

Following the director's decision, Caltrans performed additional studies to further identify the impacts of the project. Based on the results of these studies, as well as review of the public and agency comments received during circulation of the draft environmental document, Caltrans decided that the potential exists that impacts to cultural resources may not be mitigated to a point where they are not significant under CEQA. Therefore, a decision was made to elevate the CEQA document level to a Draft Environmental Impact Report and to circulate the findings of this new document to the public.

The final environmental document will respond to the comments received during the original public circulation period in 2010 as well as comments received during circulation of this draft environmental document.

Under consideration for the project are six proposed build alternatives and one No-Build Alternative (see Figures 1.5 through 1.10). The Caltrans Preferred Alternative is a combination of Alternatives 3 and 4.

Alternative 1 proposes constructing segments of conventional all-paved, conventional divided and controlled-access four-lane divided highway along the existing U.S. Highway 395 alignment.

Alternative 2 proposes construction of a controlled-access four-lane divided expressway with the northbound and southbound lanes separated by at least a 100-foot-wide unpaved median throughout the project along the existing U.S. Highway 395 alignment.

Alternative 2A is a variation of Alternative 2 and proposes that the controlled-access divided four-lane expressway be constructed west of the community of Cartago with the northbound and southbound lanes separated by at least a 100-foot-wide unpaved median throughout.

Alternative 3 proposes construction of a controlled-access divided four-lane expressway to the west of the community of Olancha with the northbound and southbound lanes separated by at least a 100-foot-wide unpaved median throughout the project.

Alternative 4 proposes construction of a controlled-access divided four-lane expressway to the west of the communities of Olancha and Cartago with northbound and southbound lanes separated by a variable-width median throughout the project to avoid utilities.

The Caltrans Preferred Alternative is a combination of Alternatives 3 and 4. The combined alternative would construct a controlled-access four-lane divided expressway that would pass west of Olancha and the Los Angeles Aqueduct (Alternative 4). Once the alignment crosses Olancha Creek, this alternative would cross the Los Angeles Aqueduct and continue north through Cartago along the existing highway to meet up with the four-lane section of U.S. Highway 395 to the north (Alternative 3). The northbound and southbound lanes would be separated by a 100-foot-wide unpaved median.

The No-Build Alternative would leave the facility as it currently exists.

Table S-1, Summary of Major Potential Impacts from Alternatives, compares the potential impacts of each build alternative and the No-Build Alternative.

S-1 Summary of Major Potential Impacts from Alternatives

Potential Impact		Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	Caltrans Preferred Alternative	No-Build Alternative
Land Use	**Consistent with the Inyo County General Plan and BLM Resource Management Plans**	Yes	Yes	Yes	Yes	Yes	Yes	No
Relocation	**Business displacements**	4	8	8	2	0	0	0
	Housing displacements	0	6	7	3	1	0	0
	Utility service relocation	195 wood poles, fiber optics, and telephone lines would need to be moved	162 wood poles, 12 steel poles, 3 steel towers, fiber optics, and telephone lines would need to be moved	92 wood poles, fiber optics, and telephone lines would need to be moved	12 wood poles, and fiber optic lines would need to be moved	9 wood poles, 4 H-poles, 2 steel towers, fiber optics, and telephone lines would need to be moved	59 wood poles, 12 H-poles, 2 steel towers, and underground fiber optics and telephone lines would need to be moved	No impact
Right-of-way acres needed for roadway		130	257	320	271	517	492	0
Right-of-way acres needed for material site		49	49	49	49	49	49	0
Visual/Aesthetics		Native vegetation and cottonwood trees would be disturbed and removed during construction	Native vegetation and cottonwood trees would be disturbed and removed during construction	Native vegetation and cottonwood trees would be disturbed and removed during construction	Native vegetation would be disturbed and removed during construction	Native vegetation would be disturbed and removed during construction	Native vegetation would be disturbed and removed during construction	No Impact
Cultural Resources		Adverse Effect - 7 known eligible sites could be affected. Possibility of uncovering unknown sites	Adverse Effect - 8 known eligible sites could be affected. Possibility of uncovering unknown sites	Adverse Effect - 4 known eligible sites could be affected. Possibility of uncovering unknown sites	Adverse Effect - 8 known eligible could be affected. Possibility of uncovering unknown sites	Adverse Effect - 6 known eligible sites could be affected. Possibility of uncovering unknown sites	Adverse Effect -6 known eligible sites could be affected. Possibility of uncovering unknown sites	No impact
Water Quality		Short term (temporary) impacts during construction. No permanent impacts.	Short term (temporary) impacts during construction. No permanent impacts.	Short term (temporary) impacts during construction. No permanent impacts.	Short term (temporary) impacts during construction. No permanent impacts.	Short term (temporary) impacts during construction. No permanent impacts.	Short term (temporary) impacts during construction. No permanent impacts.	No Impact
Paleontology		Excavations for structures and the borrow site may have a paleontological impact.	Excavations for structures and the borrow site may have a paleontological impact.	Excavations for structures and the borrow site may have a paleontological impact.	Excavations for structures and the borrow site may have a paleontological impact.	Excavations for structures and the borrow site may have a paleontological impact.	Excavations for structures and the borrow site may have a paleontological impact.	No impact
Hazardous Waste/Materials		7 locations may contain hazardous waste/ materials	7 locations may contain hazardous waste/ materials	6 locations may contain hazardous waste/ materials	2 locations may contain hazardous waste/ materials	1 location may contain hazardous waste/ materials	1 location may contain hazardous waste/ materials	No impact
Noise and Vibration		No substantial permanent noise impacts	No substantial permanent noise impacts	No substantial permanent noise impacts	Noise would increase by 12 dBA or more at 5 locations	No impact	No substantial permanent noise impacts	No impact
Natural Communities		0.26 acre of Fremont cottonwood habitat would be affected	1.87 acres of Fremont cottonwood habitat would be affected	2.5 acres of Fremont cottonwood habitat would be affected	2.5 acres of Fremont cottonwood habitat would be affected	2.4 acres of Fremont cottonwood habitat would be affected	0.51 acre of Fremont cottonwood habitat would be affected	No impact

Potential Impact	Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	Caltrans Preferred Alternative	No-Build Alternative
Wetlands	0.72 acre of wetlands would be affected	0.53 acre of wetlands would be affected	0.53 acre of wetlands would be affected	0.53 acre of wetlands would be affected	0.53 acre of wetlands would be affected	0.12 acre of wetlands would be affected	No impact
Other Waters of U.S.	0.66 acre of other waters of the U.S. would be affected	0.63 acre of other waters of the U.S. would be affected	0.26 acre of other waters of the U.S. would be affected	0.69 acre of other waters of the U.S. would be affected	1.49 acres of other waters of the U.S. would be affected	1.27 acre of other waters of the U.S.	No impact
Plant Species	No impact	No impact	5.6 acres of white pygmy poppy habitat would be affected	No impact	Crowned muilla would be affected	5.46 acres of white pygmy poppy habitat would be affected	No impact
Animal Species	Bats, migratory birds, burrowing owl, golden eagle, and Owens Valley vole may be affected	Bats, migratory birds, burrowing owl, golden eagle, and Owens Valley vole may be affected	Bats, migratory birds, burrowing owl, golden eagle, and Owens Valley vole may be affected	Bats, migratory birds, and Owens Valley vole may be affected	Mule deer, bats, migratory birds, burrowing owl, golden eagle, and Owens Valley vole may be affected	Bats, migratory birds, burrowing owl, golden eagle, and Owens Valley vole may be affected	No impact
Threatened and Endangered Species	Southwestern willow flycatcher may be affected but is not likely to be adversely affected. Desert tortoise may be affected and is likely to be adversely affected.	Southwestern willow flycatcher may be affected but is not likely to be adversely affected. Desert tortoise may be affected and is likely to be adversely affected.	Southwestern willow flycatcher may be affected but is not likely to be adversely affected. Desert tortoise may be affected and is likely to be adversely affected.	Southwestern willow flycatcher may be affected but is not likely to be adversely affected. Desert tortoise and Mohave ground squirrel may be affected and are likely to be adversely affected.	Southwestern willow flycatcher may be affected but is not likely to be adversely affected. Desert tortoise and Mohave ground squirrel may be affected and are likely to be adversely affected.	Southwestern willow flycatcher may be affected but is not likely to be adversely affected. Desert tortoise and Mohave ground squirrel may be affected and are likely to be adversely affected.	No Effect

Table of Contents

List of Figures

List of Tables

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), as CEQA lead agency, and the Federal Highway Administration, as NEPA lead agency, are proposing to widen U.S. Highway 395 from two lanes to four lanes near the communities of Olancha and Cartago in Inyo County. The project extends from the existing four-lane highway segment just south of the Los Angeles Aqueduct Bridge No. 48-10 at post mile 29.2 north to the four-lane segment at the Ash Creek Bridge No. 48-11, post mile 41.8. The project is approximately 12.6 miles long. See Figures 1.1 and 1.2. The project is funded with State Transportation Improvement Program (STIP) funds.

A draft environmental document (Initial Study with Proposed Mitigated Negative Declaration and Environmental Assessment) was circulated for public review from September 2, 2010, to October 22, 2010. Written comments received on the draft document were collected and reviewed. Selection of a preferred alternative was to be made after fully evaluating the environmental impacts and considering public and agency comments. Before determining the preferred alternative, Caltrans District 9 Director Tom Hallenbeck reviewed the recommendation of the Project Development Team, the Initial Study/Environmental Assessment, other project studies, comments received, survey results, and information received at the public meeting and the public hearing. Ultimately, the director combined portions of Alternatives 3 and 4 to create an alternative that minimized impacts and maximized benefits of the project. This alternative is called the "Caltrans Preferred Alternative." The director's decision was publicized via a press release on June 29, 2011, and was also publicized in the September 17, 2011, issue of *The Inyo Register* in an article titled "Caltrans' Olancha/Cartago decision a balancing act."

Following the director's decision, Caltrans performed additional studies to further identify the impacts of the project. Based on the results of these studies, as well as review of the public and agency comments received during the circulation of the draft environmental document, Caltrans decided that the potential exists that impacts to cultural resources may not be mitigated to a point where they are not significant under CEQA. Therefore, a decision was made to elevate the CEQA document level to a Draft Environmental Impact Report and to circulate the findings of this new document to the public.

The final environmental document will respond to the comments received during the original public circulation period in 2010 as well as comments received during the circulation of this draft environmental document.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to:

- Accommodate increased traffic demands by improving level of service
- Improve safety by allowing faster-moving traffic to pass slower vehicles
- Provide route continuity

1.2.2 Need

Increasing traffic demand on U.S. Highway 395 requires that the existing two-lane conventional highway be improved and upgraded to current highway design standards. Unlike the rest of U.S. Highway 395 in Inyo County, which is four lanes, this portion of the highway is a mostly two-lane conventional highway that consists of a 24-foot-wide traveled way with 8-foot paved shoulders. Through more than half the project limits, barrier striping prohibits drivers from passing slower-moving vehicles. In areas without barrier striping, the high traffic volumes further restrict passing opportunities. It is possible that the resulting longer travel time could create frustrated drivers who are willing to attempt unsafe maneuvers. These factors have led to a traffic accident fatality rate higher than the statewide average.

In addition, as mentioned above, this section of U.S. Highway 395 is the only part of the highway that is mostly a two-lane conventional highway. Thus, the north and south ends of the project limits currently connect to four-lane divided expressways, creating an inconsistent travel way, resulting in a lack of route continuity.

Traffic volume data, level of service projections and numerous safety issues support the improvement of U.S. Highway 395.

1.2.3 Traffic Volumes

U.S. Highway 395 is the main link in the transportation corridor connecting the eastern Sierra region (Inyo and Mono counties) and western-central Nevada to the Southern California region. This transportation corridor is vital to the economy of the eastern Sierra region for the shipment of goods and materials because the region imports so much of its food, clothing, and other goods.

In addition, this corridor has major recreational use. An Origination and Destination Travel Study conducted in 2000 for U.S. Highway 395 through Inyo and Mono counties indicated that 55 percent of the traffic on U.S. Highway 395 was recreation oriented and that recreation vehicles composed 3.2 percent of the vehicle mix. The study also found that 36 percent of the traffic originated in Southern California.

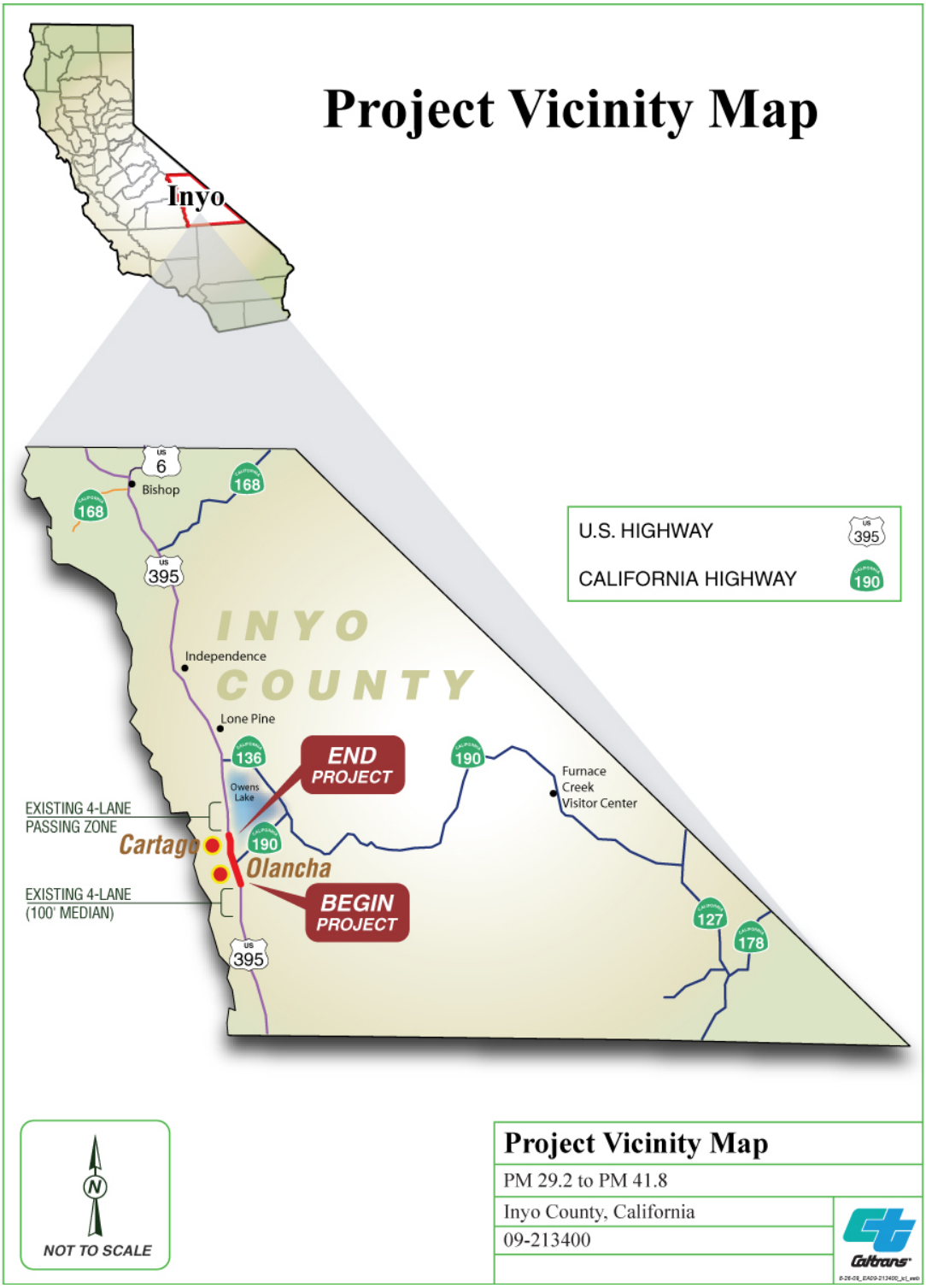


Figure 1.1 Project Vicinity Map

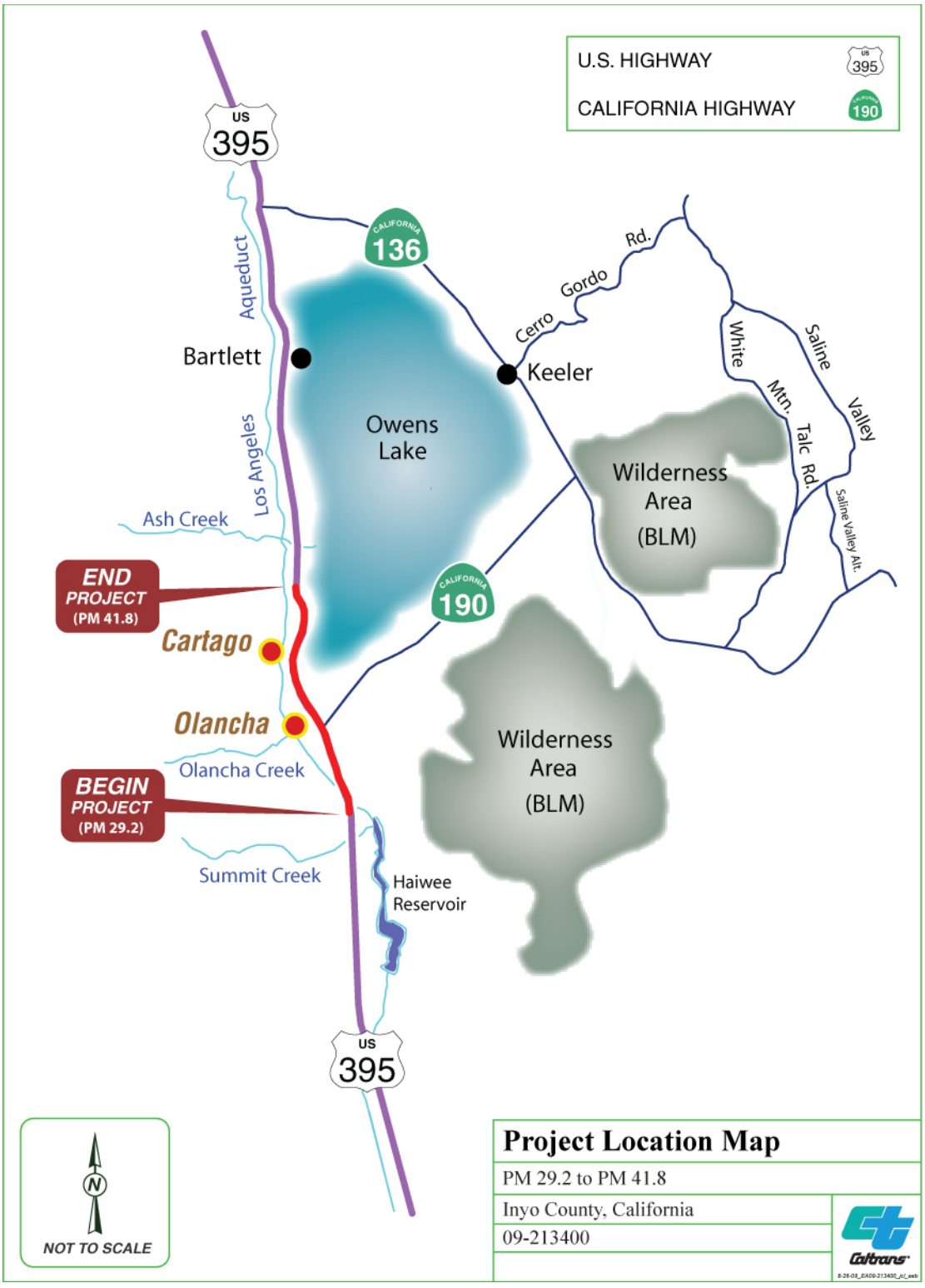


Figure 1.2 Project Location Map

Current and projected traffic data are shown in Table 1-1, based on 2012 traffic volume counts. The future traffic volumes are based on a growth rate of 0.5 percent per year.

Table 1-1 Traffic Data

Traffic Data	2012	2019	2024	2029
Average Annual Daily Traffic	5,300	5,490	5,630	5,770
Percent Trucks	20.3	20.3	20.3	20.3
20-Year Growth Rate (percent)	-	0.5	0.5	0.5

Source: 2010 and 2013 Caltrans Traffic Studies

According to the data in Table 1-1, increasing traffic volumes can be expected on U.S. Highway 395 well into the future.

1.2.4 Level of Service

Level of service is a measure of how free or constrained traffic is traveling along a road segment or through an intersection. Levels of service are expressed as report-card-type grades, ranging from A, which indicates free-flowing traffic, to F, which indicates extremely congested traffic. A level of service rating of F equates to substantial congestion with traffic demand exceeding roadway capacity. For two-lane rural highways, level of service is defined in terms of the percentage of time spent following and the average travel speed. A four-lane determination is based on a combination of factors including maximum density, average speed, maximum volume-to-capacity ratio and maximum service flow rate. See Figures 1.3 and 1.4 for Level of Service illustrations.

The existing facility is currently operating at a level of service D (see Table 1-2). This is especially evident on weekends and holidays when traffic volumes are extremely heavy. Complicating the situation is the relatively high volume of slower-moving vehicles using the route, with trucks and recreational vehicles making up more than a quarter of the traffic. Long lines of cars collect behind these slower vehicles, creating longer driver delays, which become a major factor when determining level of service. By 2039, the level of service is expected to drop to E.

Table 1-2 Level of Service within Project Limits

	2012	2019	2039
Level of service without improvements	D	D	E

Source: 2010 and 2013 Caltrans Traffic Studies

LEVELS OF SERVICE

for Two-Lane Highways

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

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1

Figure 1.3 Level of Service Chart for Two-Lane Highways

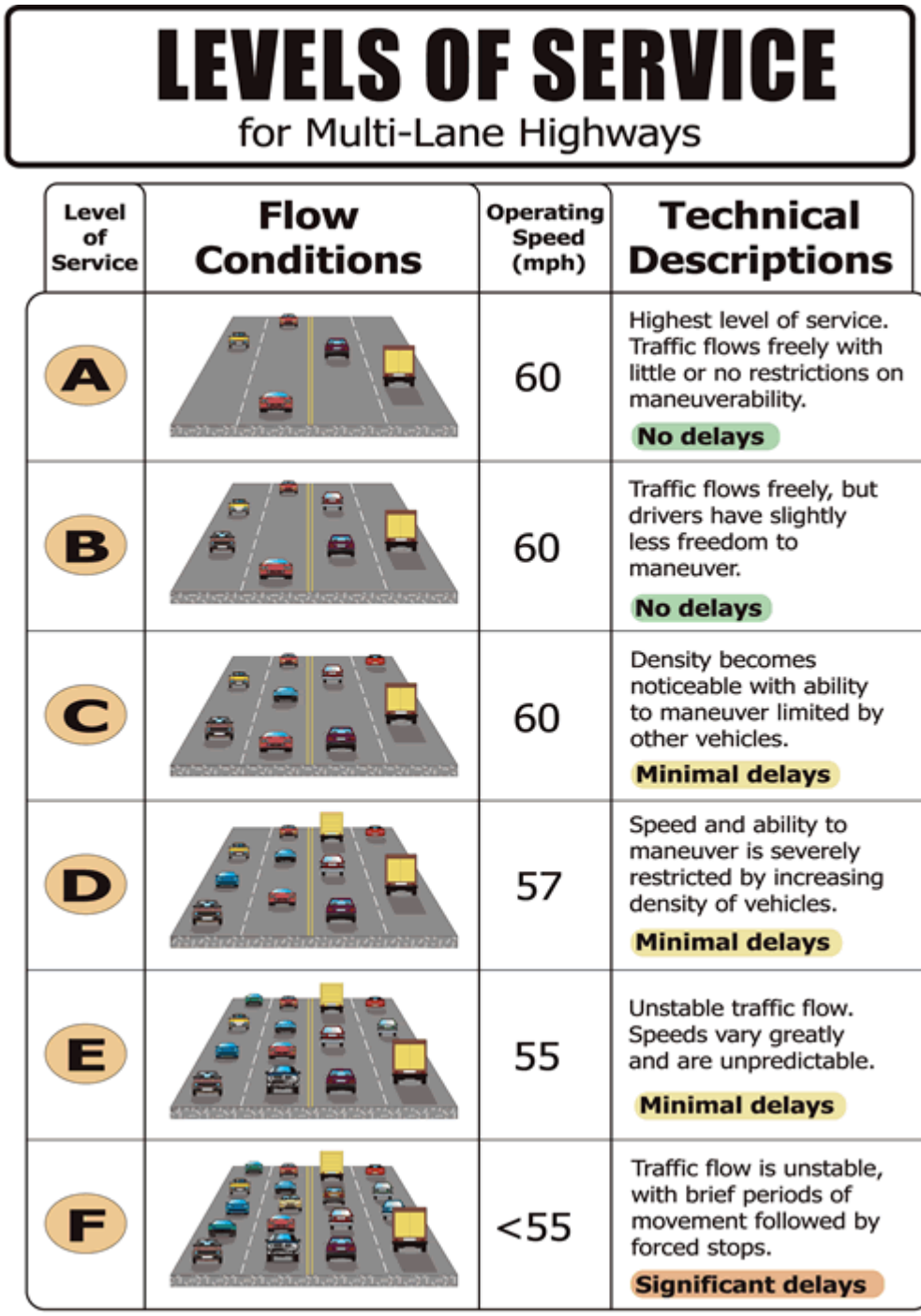


Figure 1.4 Level of Service Chart for Multi-Lane Highways

1.2.5 Safety Issues

Because there is sometimes more traffic using the existing roadway than the road is designed to carry, the highway often operates at a reduced level of service. This is especially evident on weekends and holidays when traffic volumes are extremely heavy. Because the study area is mostly rural, drivers of passenger cars tend to travel at a high rate of speed along the route. But trucks and recreational vehicles usually travel slower, so traffic starts to "queue" (line up) behind the larger, slower-moving vehicles. As slow-moving vehicles form longer queues, drivers can become frustrated and may attempt to pass, often unsafely. In addition, through more than half of the project limits, barrier striping prohibits passing by those drivers who would prefer to travel faster. In areas without barrier striping, passing opportunities are further restricted by the high traffic volumes.

These factors have led to a traffic accident fatality rate higher than the statewide average (see Table 1-3). Between 2002 and 2011, 130 accidents were reported. Of these, 27 percent of the collisions involved hit objects, while almost 34 percent involved overturned vehicles (rollovers), and 14 percent involved sideswipes. Main collision factors were speeding (23 percent) and improper turns (30 percent).

Table 1-3 Ten-Year (2002-2011) Traffic Accidents

Type of Accidents	Accident Rate/Million Vehicle Miles	
	Study Area Average	Statewide Average
Fatal	0.029	0.017
Injury	0.23	0.29
Total	0.48	0.67*

**Total Accident Rate/Million Vehicle Miles includes property damage accidents not shown.*
Source: December 2013 Caltrans Traffic Studies

All of the build alternatives would reduce the accident rate for this segment of U.S. Highway 395. With two lanes for each direction of travel, fast-moving traffic could safely pass slower-moving vehicles. Building a new roadway with a median separating the northbound from the southbound lanes would drastically reduce head-on collisions. Flattening embankment slopes and creating a wider roadside environment would reduce rollover-type accidents.

1.2.6 Route Continuity

U.S. Highway 395 in California is classified functionally as a Rural Principal Arterial and is included in the California Freeway and Expressway System. It is also included in the National Highway System as classified by the U.S. Department of Transportation (23 USC 103).

This project is the last section of U.S. Highway 395 in Inyo County that is not four lanes. With the completion of this project, a continuous four-lane section would be

achieved on U.S. Highway 395 from the junction of U.S. Highway 395 and State Route 14 in Kern County to north of Lee Vining in Mono County.

1.3 Project Alternatives

The project is located on U.S. Highway 395 in Inyo County near the communities of Olancha and Cartago. The project extends from the existing four-lane highway segment just south of the Los Angeles Aqueduct Bridge No. 48-10 at post mile 29.2 north to the four-lane segment at the Ash Creek Bridge No. 48-11, post mile 41.8. The project is approximately 12.6 miles long. The proposed project would upgrade the existing two-lane conventional highway to a four-lane expressway, or to a partial conventional four-lane highway, partial four-lane expressway mix. A route adoption is necessary for all build alternatives to adopt the constructed alignment into the State Highway System and also to accommodate the change from conventional highway to controlled-access expressway. State Route 190 will also need a route adoption to accommodate the route re-designation to use portions of the existing U.S. Highway 395 as State Route 190.

This section describes the design alternatives that were identified in the planning and environmental analysis phases. In the August 2010 draft Initial Study/Environmental Assessment, five build alternatives and the no-build alternative were presented. After reviewing the recommendation of the Project Development Team, the draft Initial Study/Environmental Assessment, other project studies, comments received, survey results, and information received at the public meeting and the public hearing, former Caltrans District 9 Director Tom Hallenbeck combined portions of Alternatives 3 and 4 to create a sixth alternative known as the Caltrans Preferred Alternative. Following the director's decision, Caltrans performed additional studies to further identify the impacts of the project. Based on the results of these studies, as well as review of public and agency comments, Caltrans has determined that it is possible that mitigation for impacts to cultural resources may not be sufficient to enable the impacts less than significant under CEQA. Therefore, a decision was made to elevate the CEQA document level to a Draft Environmental Impact Report, to create a new document with more expansive analysis, and to circulate the findings of this new document to the public. This new document includes the new Caltrans Preferred Alternative; however, final identification of a preferred alternative will occur after the public review and comment period.

The proposed alignments can be found in Figures 1.5 through 1.10 and typical cross sections of the build alternatives are in Appendix G.

1.3.1 Build Alternatives

Common Design Features of the Build Alternatives

All the build alternatives would have at least one new bridge built to cross the Los Angeles Aqueduct.

Material Borrow Site

Because of the rural location of the project, Caltrans decided to study the possibility of including a material borrow site within the project area. A 49-acre expanded right-of-way would be made available to contractors as an optional source of material for production of aggregates for road base, asphalt concrete, rock slope protection, and embankment. The expanded right-of-way is bisected by Alternative 4 and next to the Caltrans Preferred Alternative, but would be available for all build alternatives. It is located approximately equidistant from the beginning and end of the project, and would minimize haul distances, costs, and disruption to local traffic patterns. The material source is expected to yield an estimated 765,000 tons of in-situ material. This would satisfy the aggregate needs for any of the build alternatives. Equipment to be set up in the site for production of road base and asphalt concrete would include a portable hot plant, mixing drums, and rock crushers.

Use of the expanded right-of-way as a source of materials could result in an estimated $7 million in savings. The savings would come primarily from reduced production costs, trucking costs, and sales tax. If roadway materials are not produced onsite, the road base and asphalt concrete would likely be hauled from Ridgecrest, Bishop, or farther.

Additional benefits of providing an expanded right-of-way for material production would include:

- Reduced trucking-related greenhouse gasses by an estimated 2,550 tons
- Reduced trucking-related diesel fuel consumption by an estimated 230,000 gallons
- Enhanced safety and reduced wear and tear on the existing highway by reduced truck hauling distance of nearly 1.4 million miles
- Reduced project cost due to more competitive bidding on aggregate base and asphalt concrete
- Shorter construction period due to higher production rates

The extended right-of-way was included in the study area for this project and impacts from the possible operation of the material area are addressed in Chapters 2 and 3. Any disturbed areas would be restored by contour grading, replacing topsoil and revegetating the site with native plant or seeds. The material area would then be closed after the project is complete and a decision will be made determining if Caltrans retains or relinquishes the site.

Unique Features of the Build Alternatives

Alternative 1

This alternative proposes constructing segments of conventional four-lane highway with paved two-way left-turn lanes along the existing U.S. Highway 395 alignment through the communities of Olancha and Cartago, with a four-lane divided highway

on either side of the communities. The four-lane divided highway would have a 100-foot unpaved median (see Figure 1.5).

Driveways and private roads that currently enter the highway would continue to be allowed along the portions that remain conventional highway, but access would be controlled throughout the divided highway portions of U.S. Highway 395. Posted traffic speeds in the divided highway portion of the project would be set at 65 miles per hour, and 55 miles per hour through the communities.

There are two structures associated with this alternative. A new reinforced concrete bridge near post mile 31.3 would carry the southbound lanes across the Los Angeles Aqueduct. A new reinforced concrete box culvert may also be required near post mile 37.30 and would carry the north fork of Cartago Creek under the new all-paved facility. There are no multi-purpose undercrossings proposed as part of this alternative.

Alternative 1 would cost $90.9 million.

Alternative 2

This alternative proposes constructing a controlled-access, four-lane divided expressway along the existing U.S. Highway 395 alignment, with the northbound and southbound lanes separated by a 100-foot-wide unpaved median through the project area. The existing U.S. Highway 395 would become a frontage road through the communities of Olancha and Cartago (see Figure 1.6).

Access to the new expressway would be provided at existing intersections with State Route 190 and several Inyo County roads: Cactus Flats Road, Walker Creek Road, Fall Road, School Street, Lake Street, and Whitney Street. The intersections would be realigned and built to conform to the new facility. Access to parcels abutting the existing highway would be provided from the proposed frontage road, existing dirt roads, and other significant access points. Posted traffic speeds in the divided highway portion of the project would be set at 65 miles per hour.

There are several structures associated with this alternative. A reinforced concrete bridge would be built near post mile 31.30 to carry the new southbound lanes over the Los Angeles Aqueduct. Two reinforced concrete box culverts may also be required near post mile 37.30 to carry the north fork of Cartago Creek under the new expressway. Two reinforced concrete box culverts are also proposed near post mile 38.30 and would serve as multi-purpose undercrossings under the new expressway. The relocated undercrossings would require additional grading to restore access to the existing dirt roads in the area.

Alternative 2 would cost $108.6 million.

Alternative 2A

This alternative is a variation of Alternative 2 that would construct a bypass to the west of the community of Cartago, and would consist of a controlled-access, four-

lane divided expressway with a 100-foot unpaved median through the project area (see Figure 1.7).

Due to the diversion around Cartago, this alternative would move closer to the mountains, resulting in a gentle climb, bringing the new roadway higher than the existing U.S. Highway 395. The diversion also makes this alternative 0.3 mile longer.

The existing highway would be converted to a frontage road, but would extend farther to the north of Cartago to join the new alignment, which would preserve the existing uses and access through the community as well. The length of frontage road relinquished to Inyo County would increase to 6.2 miles. The number of access points to the new expressway would be reduced by one as the intersections at Lake Street and Whitney Street would now connect to the frontage road. An additional access point would be provided south of the Crystal Geyser Bottling Plant to improve the plant's access to the new expressway. Posted traffic speeds in the divided highway portion of the project would be set at 65 miles per hour.

The number of structures required with this alternative would be the same as Alternative 2. However, the western alignment would change the location of the proposed reinforced concrete box culverts. The box culverts necessary for the north fork of Cartago Creek would be moved west as would the box culverts required for the proposed multi-purpose undercrossings at post mile 38.30. The relocated undercrossings would require additional grading to restore access to the existing dirt roads in the area. There would also be an alternative location available for the multi-purpose undercrossings just south of Owens Street.

Alternative 2A would cost $102.2 million.

Alternative 3

This alternative proposes construction of a controlled-access, four-lane divided expressway to the west of the community of Olancha with the northbound and southbound lanes separated by a 100-foot-wide unpaved median through the project area (see Figure 1.8). The existing State Route 190 may be extended from the intersection of State Route 190 and U.S. Highway 395 to connect with the new U.S. Highway 395 alignment. State Route 190 would remain a two-lane highway in this area. Another option would be to re-designate a portion of the existing U.S. Highway 395 north or south of the State Route 190/U.S. Highway 395 intersection as State Route 190.

The diversion around Olancha would move this alternative closer to the mountains, resulting in a gentle climb that would bring the roadway higher than the existing U.S. Highway 395. The diversion also makes this alternative 0.3 mile longer.

The existing highway would be converted to a frontage road, but the frontage road would begin near post mile 37.3 and extend south of Olancha to join the proposed alignment near post mile 32.4. The length of frontage road that would be relinquished

to Inyo County would be 4.8 miles. Standard signage would be posted at the south end of the project and in Cartago to inform motorists of services available.

The number of access points to the new expressway would be reduced by five as several of the access points in the Olancha area would now connect to the frontage road. Access would still be provided at the existing intersections with Lake Street and Whitney Street in Cartago. Posted traffic speeds in the divided highway portion of the project would be set at 65 miles per hour.

Alternative 3 would require a number of structures. Rather than being distributed through several irrigation channels, the crossing of Olancha Creek would occur at one location in an incised channel and could require reinforced concrete box culverts. Box culverts would be required for the crossing of the north fork of Cartago Creek and the proposed multi-purpose undercrossings north of Cartago at post mile 38.30. An alternative or additional location for multi-purpose undercrossings would also be available near Olancha Creek.

Alternative 3 would cost $92.1 million.

Alternative 4

This alternative proposes construction of a controlled-access, four-lane divided expressway to the west of both Olancha and Cartago, with northbound and southbound lanes separated by a variable width unpaved median throughout the project area (see Figure 1.9). The existing State Route 190 may be extended from the intersection of State Route 190 and U.S. Highway 395 to connect with the new U.S. Highway 395 alignment. State Route 190 would remain a two-lane highway in this area. Another option would be to re-designate a portion of the existing U.S. Highway 395 north or south of the State Route 190/U.S. Highway 395 intersection as State Route 190. Standard signage would be posted at the north and south end of the project to inform motorists of services available.

This alternative would move even closer to the mountains, resulting in the roadway following a gentle climb greater than what would be necessary for any of the other alternatives. The diversion also makes this alternative 0.6 mile longer than the existing highway.

This alternative would require substantially more structures. Two bridges would be necessary to carry the southbound and northbound lanes across the Los Angeles Aqueduct west of Cartago. An additional bridge would be required to carry the extension of State Route 190 across the Los Angeles Aqueduct. There would also be a substantial increase in the number of box culverts. Two box culverts would be built for the proposed multi-purpose undercrossings at post miles 38.5 and 34.7. The proposed multi-purpose undercrossings that would be built would meet an added need of providing access under the new facility for migrating deer. Posted traffic speeds in the divided highway portion of the project would be set at 65 miles per hour.

Alternative 4 would cost $123.0 million.

Combined Alternatives 3 and 4 (Caltrans Preferred Alternative)

The Caltrans Preferred Alternative is a combination of Alternatives 3 and 4 (see Figure 1.10). This alternative would construct a controlled-access, four-lane divided expressway for the entire length of the project. It would begin in the existing four-lane section of U.S. Highway 395 south of Olancha and travel west of Olancha and the Los Angeles Aqueduct (as seen in Alternative 4). After crossing Olancha Creek, the alignment would cross the Los Angeles Aqueduct and continue north through Cartago along the existing highway to join the four-lane section of U.S. Highway 395 to the north (as seen in Alternative 3). The northbound and southbound lanes would be separated by a 100-foot-wide unpaved median. Posted traffic speeds on the divided highway will be set at 65 miles per hour.

The existing highway south of the intersection with State Route 190 East would be re-designated as State Route 190. The existing highway north of the intersection with State Route 190 East would be relinquished to Inyo County and would remain as a local route through Cartago. The terms and conditions of relinquishment would be determined through discussions with Inyo County. Standard signage would be posted at the north and south end of the project to inform motorists of services available.

Access from the existing highway to the new alignment is currently proposed at the south end of the project where the new alignment branches off, at Walker Creek Road, near the Crystal Geyser bottling plant, and at Lake Street and Inyo Street in Cartago. Additional access points may be included during project design pending discussions with Inyo County and other local agencies. A multi-purpose (livestock, recreation, etc.) undercrossing that will span under both north and southbound lanes is proposed in the Olancha area south of Olancha Creek to restore access to lands west of the new alignment.

The Caltrans Preferred Alternative would cost $84.9 million.

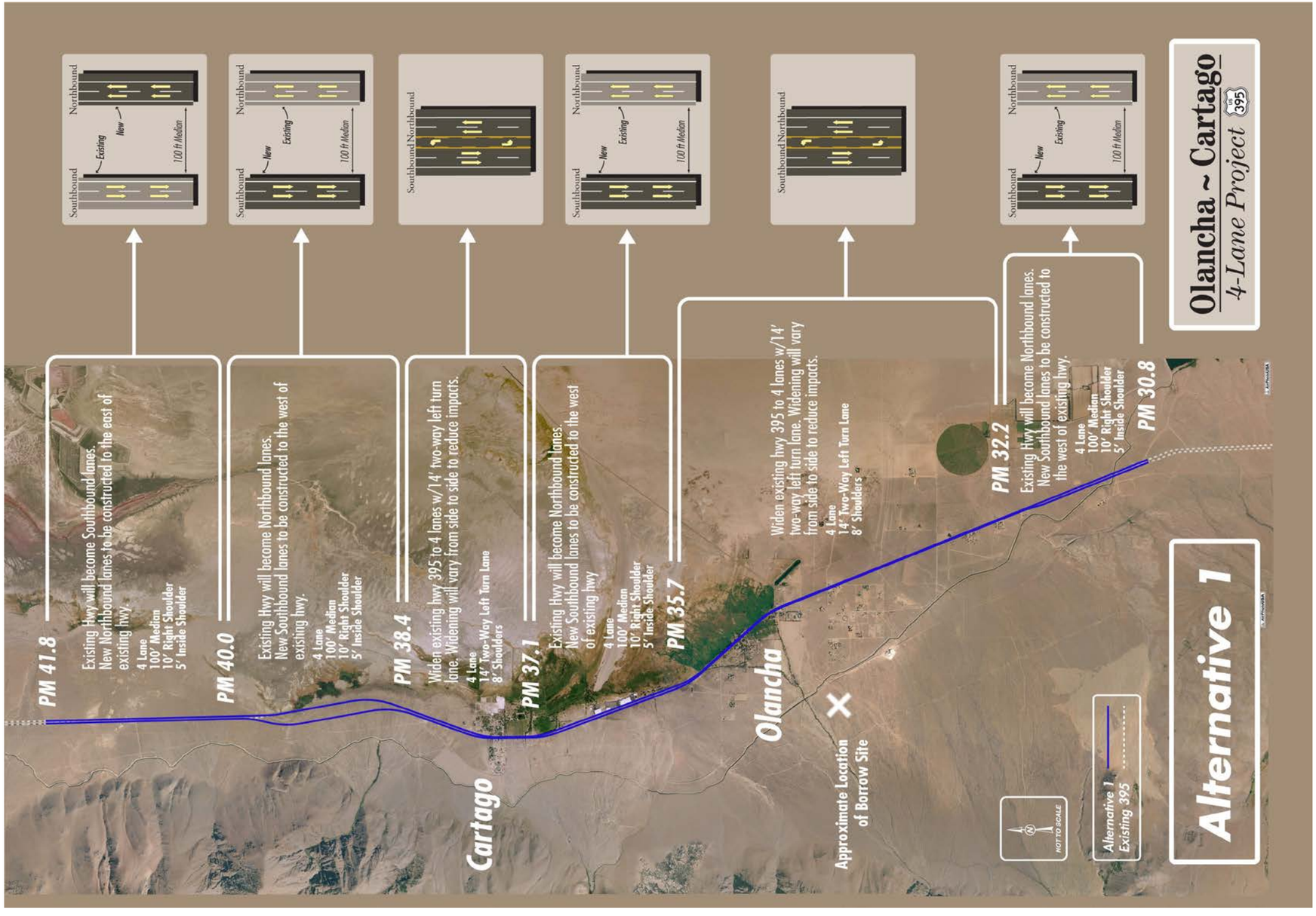


Figure 1.5 Alternative 1 Map

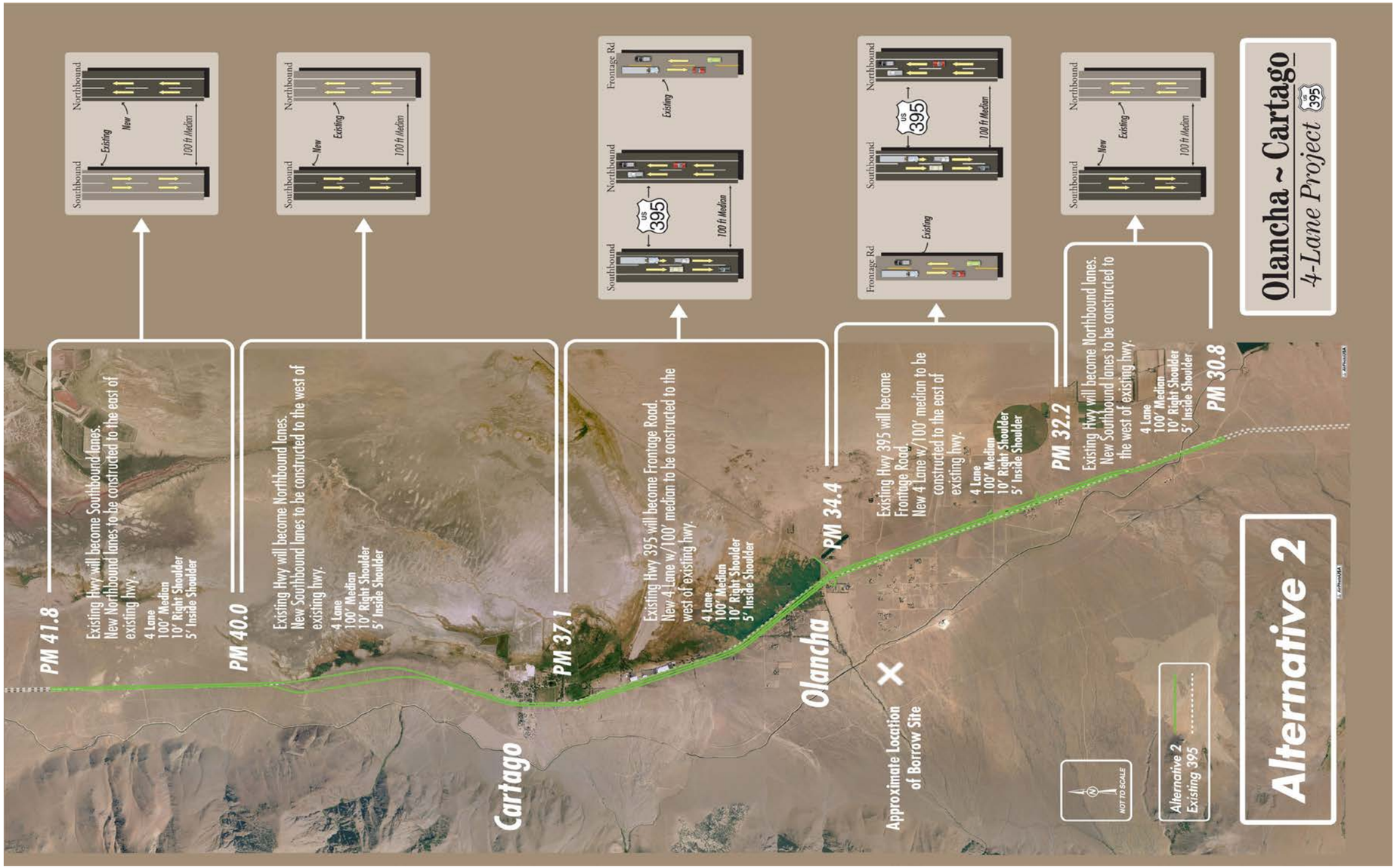


Figure 1.6 Alternative 2 Map

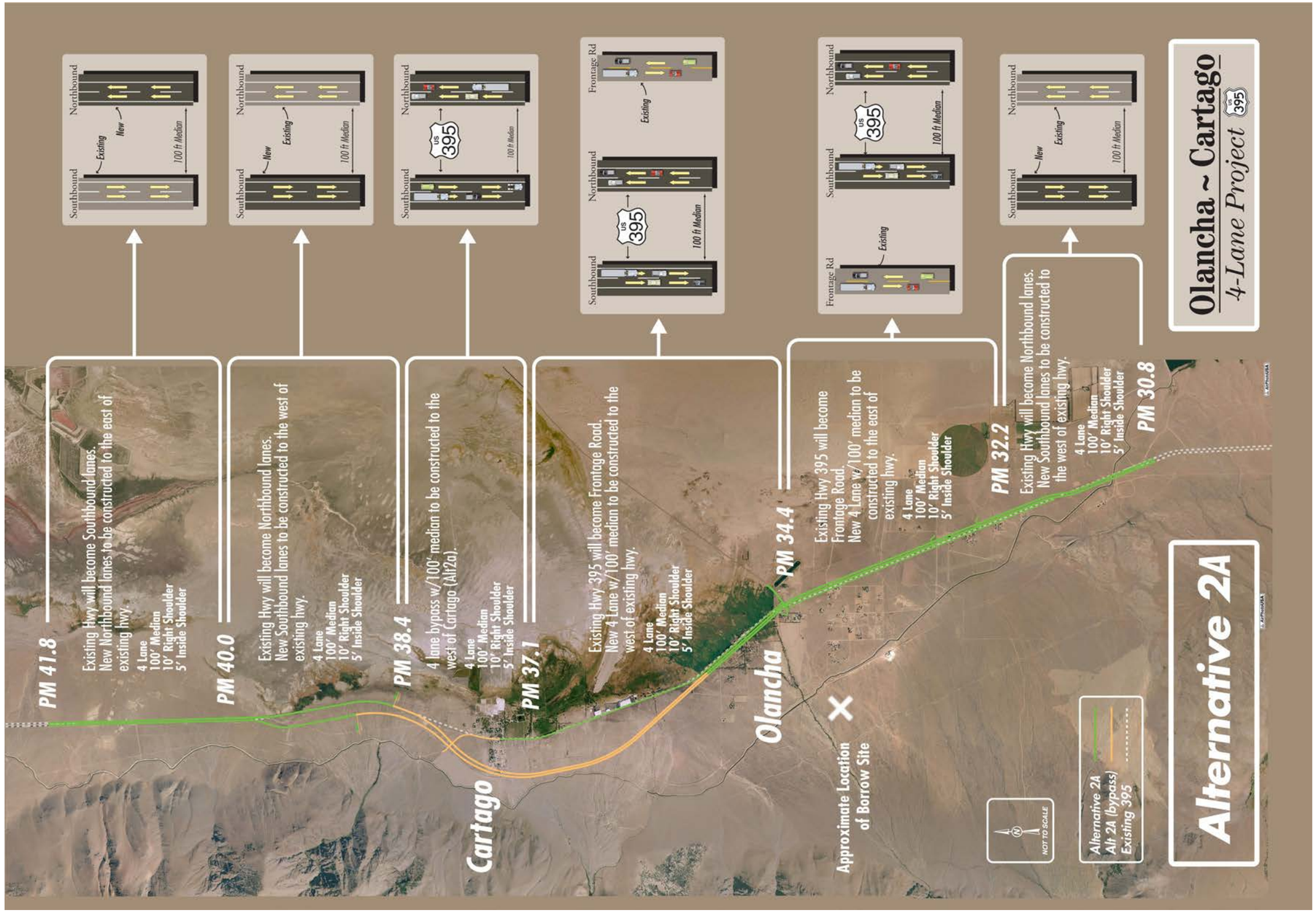


Figure 1.7 Alternative 2A Map

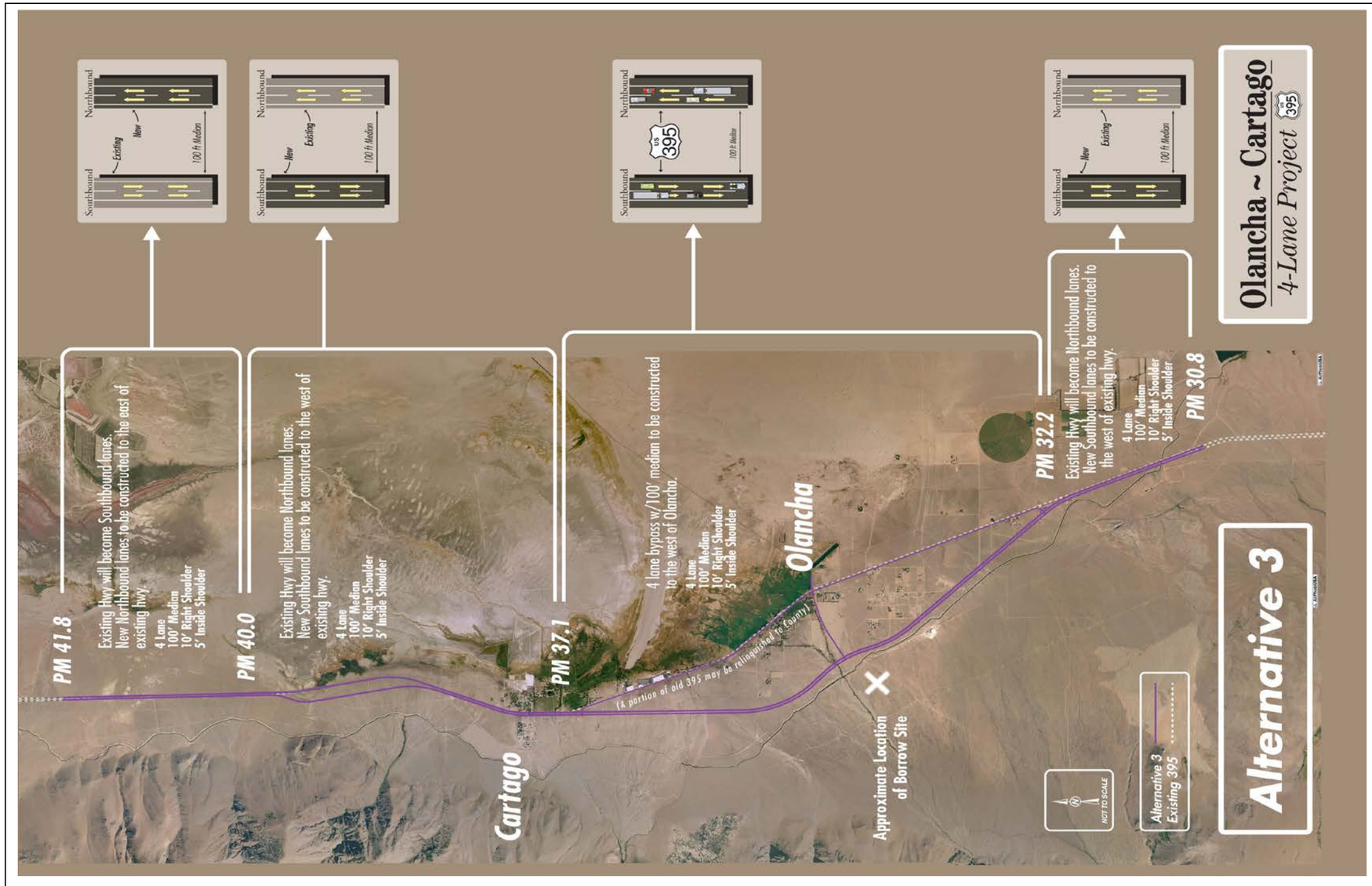


Figure 1.8 Alternative 3 Map

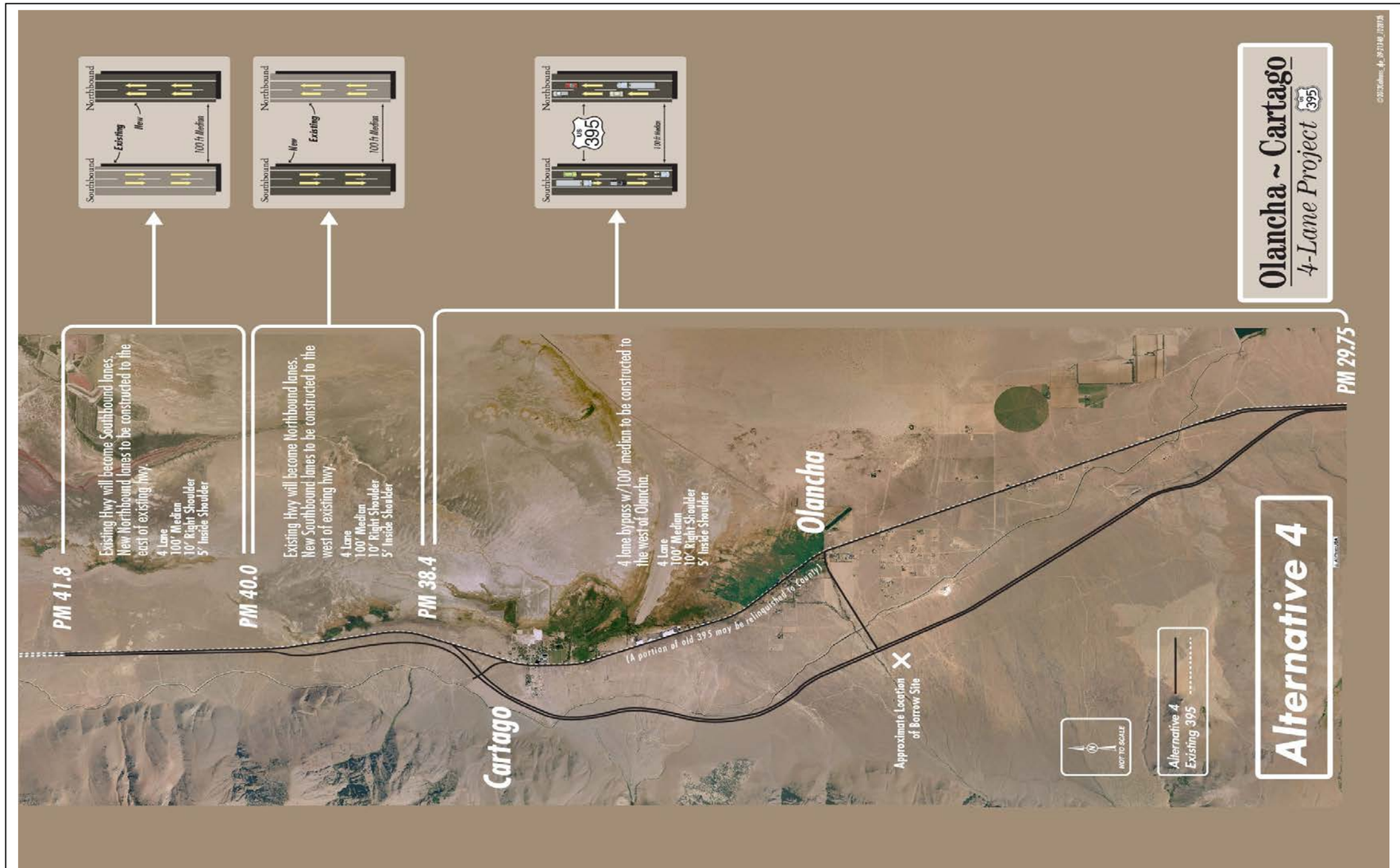


Figure 1.9 Alternative 4 Map

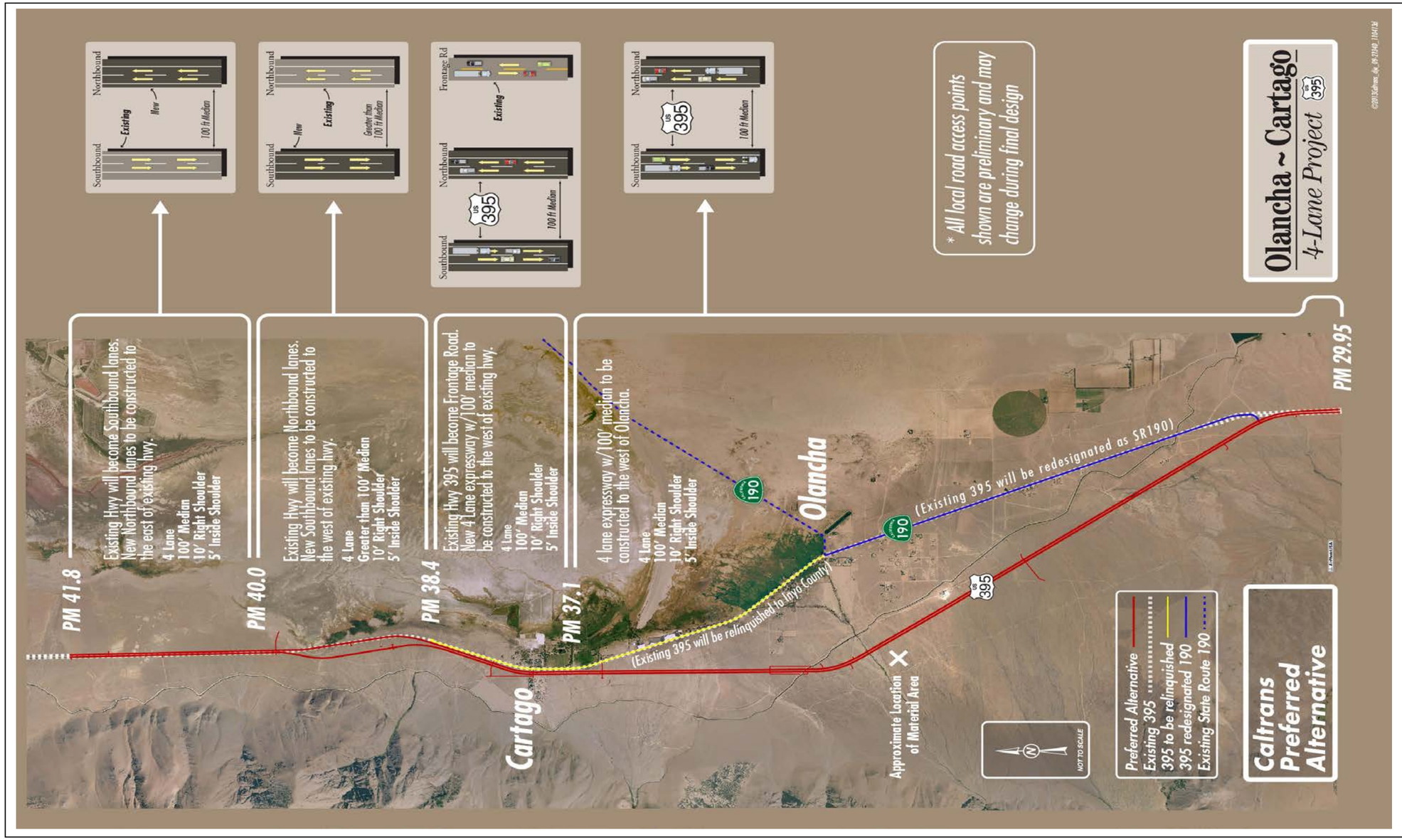


Figure 1.10 Caltrans Preferred Alternative Map

1.3.2 No-Build (No-Action) Alternative

The No-Build Alternative would not upgrade this segment of U.S. Highway 395 to four lanes instead of two, and would instead keep it in its current condition. The No-Build Alternative does not meet the purpose and need for the project as it would not accommodate increased traffic demand, would not improve safety and would not provide route continuity.

1.4 Comparison of Alternatives

An analysis of the project alternatives indicated that the build alternatives would satisfy the project's purpose and need regarding safety, traffic demands, and route continuity.

All of the alternatives would improve the level of service compared to the existing highway. It is also anticipated that safety improvements associated with Alternatives 2, 2A, 3, 4, and the Caltrans Preferred Alternative would be greater than those provided by Alternative 1. Alternatives 2, 2A, 3, 4, and the Caltrans Preferred Alternative would provide a divided four-lane facility with controlled access. As a result, these alternatives would all provide greater safety improvements than Alternative 1 would.

The cost of the build alternatives ranges from $84.9 million (Caltrans Preferred Alternative) to $123 million (Alternative 4). Alternatives 2, 2A, and 3 would cost $108.6 million, $102.2 million, and $92.1 million, respectively. All of the construction estimates are escalated to 2014 costs.

All of the build alternatives except for the Caltrans Preferred Alternative would result in relocations of businesses and/or homes. All of the alternatives would result in relocating utilities.

Each of the build alternatives would have impacts to cultural resources. However, all impacts would be mitigated prior to construction.

All of the build alternatives have the potential to encounter hazardous waste, but any potential impact would be avoided prior to groundbreaking or dealt with during construction.

None of the build alternatives except for Alternative 3 would have substantial permanent noise impacts to local residences.

All of the build alternatives would affect habitat of the federally and state-threatened desert tortoise. Alternatives 3, 4, and the Caltrans Preferred Alternative would affect the Mohave ground squirrel. All of the build alternatives may affect potentially suitable migratory habitat for the federally and state-endangered southwestern willow flycatcher.

Caltrans Preferred Alternative

After comparing and weighing the benefits and impacts of all feasible alternatives (see Table S-1 for a summary of impacts by alternative), Caltrans identified a combination of Alternatives 3 and 4 as the Caltrans Preferred Alternative, subject to public review. Final identification of a preferred alternative will occur after the public review and comment period.

The Caltrans Preferred Alternative is one of the safest alternatives because it would establish a divided expressway with controlled access and minimal access points. The Caltrans Preferred Alternative also does not relocate any residences or active businesses and minimizes the number of private properties that will need to be acquired for the right-of-way.

After the public circulation period, all comments will be considered, and Caltrans will select a preferred alternative and make the final determination of the project's effect on the environment. Under the California Environmental Quality Act (CEQA), Caltrans will certify that the project complies with CEQA, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that will not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to project approval. Caltrans will then file a Notice of Determination with the State Clearinghouse that will identify whether the project will have significant impacts, whether mitigation measures were included as conditions of project approval, that findings were made, and that a Statement of Overriding Considerations was adopted. Similarly, if the Federal Highway Administration (FHWA) determines the National Environmental Policy Act action does not significantly impact the environment, FHWA will issue a Finding of No Significant Impact.

1.5 Alternatives Considered but Eliminated from Further Discussion

Alternative 2R

This alternative would have followed the same alignment as Alternative 2, except that the alignment would have continued past State Route 190 (post mile 34.4) on the east side of the existing highway up to about post mile 35.75, where it would have crossed over to the west of the existing highway and back to the proposed alignment for Alternative 2. This alignment would have substantially reduced right-of-way impacts, cost of construction, and some natural and physical environmental impacts. However, Alternative 2R would affect 25.24 acres of wetlands, while the other alternatives would affect approximately 0.72 acre or less of wetlands. The Clean Water Act Section 404(b)(1) requires that Caltrans must consider the practicable alternatives that are least environmentally damaging to the aquatic environment before selecting this alternative, so Alternative 2R was removed from further consideration.

Alternative 3A

Alternative 3A is identical to Alternative 3 except it does not intersect with the existing alignment in Cartago at post mile 37.6. Like Alternative 2A, Alternative 3A bypasses Cartago by following an existing railroad grade around and west of the community. It would transition back to the existing alignment of U.S. Highway 395 where Alternative 2A would, north of Cartago near post mile 38.5. From this point north, Alternative 3A is identical to Alternative 3. This alternative was withdrawn from further consideration because of its proximity to recent development and its similarity to Alternative 4.

Transportation System Management (TSM) and Transportation Demand Management (TDM) Alternatives

TSM strategies are those that increase the efficiency of existing facilities. They are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of TSM strategies include ramp metering, auxiliary lanes, turning lanes, reversible lanes and traffic signal coordination. TSM also encourages automobile, public and private transit, ridesharing programs, and bicycle and pedestrian improvements as elements of a unified urban transportation system. Modal alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and mass transit.

This alternative was withdrawn from further consideration because a stand-alone TSM alternative would not satisfy the purpose and need of the project. The project is located in a rural area and the primary use of U.S. Highway 395 within the project is recreational-based travel. Inter-regional travel would not be served by TSM strategies. For example, U.S. Highway 395 currently has no sidewalks or designated pedestrian crossings in the project area. Because the project area is rural, few, if any, pedestrians are to be expected along the corridor. U.S. Highway 395 is recognized as a Class III Bike Route in the Inyo County Bikeways Master Plan. This would not change, as the expressway designation would still allow bicycle use. Also, no passenger or freight rail service currently exists in Inyo County, and commercial air travel is non-existent. Eastern Sierra Transit Authority offers deviated fixed route and dial-a-ride bus service in and between the populated areas of Inyo and Mono counties in addition to an inter-regional route between Reno, Nevada, and Palmdale, California. Most visitors arrive or pass through the county via the highway system.

1.6 Permits and Approvals Needed

Table 1-4 lists the permits, reviews and approvals that would be required for project construction:

Table 1-4 Summary of Permits, Reviews, and Approvals

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species	A Biological Opinion was received on June 13, 2014. See Appendix J.
California Department of Fish and Wildlife	1602 Agreement for Streambed Alteration. Section 2081(b) permit for Threatened and Endangered Species	Application for 1602 agreement and Section 2081 permit anticipated after the final environmental document and before construction.
State Historic Preservation Officer	Section 106 Finding of Adverse Effect and Programmatic Agreement	The State Historic Preservation Officer concurred with the Finding of Adverse Effects in May 2014. See Appendix L. A project-specific Programmatic Agreement has been signed by the Federal Highway Administration, State Historic Preservation Officer, Advisory Council on Historic Preservation, Caltrans and U.S. Bureau of Land Management in July 2014. See Appendix K.
U.S. Army Corps of Engineers	Section 404 of the Clean Water Act	Permit will be acquired after the final environmental document and prior to construction.
Lahontan Regional Water Quality Control Board	Section 401 and Section 402 of the Clean Water Act	Permits will be acquired after the final environmental document and prior to construction.
Inyo County	Encroachment permits Relinquishment Agreement	Encroachment permits will be obtained prior to construction as needed. A relinquishment agreement will be completed by the end of project construction.
Various property owners	Permission to collect fossils found during construction.	As needed.
U.S. Bureau of Land Management	Archaeological Resources Protection Act permit for cultural resource investigation. Paleontological Resources use permits: Survey Permit, Limited Surface Collection Permit, and Excavation Permit.	Caltrans will obtain these use permits prior to cultural resource investigation and/or construction.

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

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

- Coastal Zone – The proposed project is not located in a coastal zone. Inyo County is on the east side of the Sierra Nevada range.

- Wild and Scenic Rivers – No rivers were identified in the proposed project area that were classified as part of the National Wild and Scenic River System, classified as a National Study River, classified as part of the California Wild and Scenic River System, or classified as a Special River (California).

- Parks and Recreation – Based on field surveys and research into the local, county, and state park and recreation systems, no parks or recreation facilities were identified in the proposed project area. In addition, there were no designated equestrian trails, recreational bikeways, or any other designated recreational trails identified within the study area.

- Farmland/Timberlands – Based on field surveys, no timberlands sit in the proposed project area. Based on consultation with the U.S. Natural Resources Conservation Service (NRCS), no farmland was identified within the project area.

- Fisheries – No fish species of concern were identified in the perennial streams within the project area. The project would not impede the flow of any perennial streams, so it is not expected to affect any species of fish.

- Hydrology and Floodplain – Based on the Floodplain Evaluation Report, this project does not encroach on or impact a floodplain.

2.1 Human Environment

2.1.1 Existing and Future Land Use

Affected Environment

The 2010 U.S. Census, the Inyo County Planning Department website (http://www.inyoplanning.org), and the 2001 Inyo County General Plan were used to gather research for this section. In size, Inyo County is the second largest county in California, with a total land area of about 10,140 square miles (6.5 million acres), but the proportion of land that is privately owned is very small, representing only 1.9 percent of the total. Lands held by the county or other local agencies or occupied by Indian Reservations represent 0.3 percent of the total. Various federal agencies and the State of California, as well as the Los Angeles Department of Water and Power, are the largest landowners in the county (see Table 2-1).

Table 2-1 Inyo County Land Ownership

Land Owners (Inyo County Total Area = 10,140 square miles)	Percent Owned
Federal agencies	91.6
State of California	3.5
Los Angeles Department of Water and Power	2.7
County/other local agencies/Indian reservation lands	0.3
Private Holders	1.9

Within Inyo County, a wide range of planning documents is currently used to guide land use decisions. Private, county, and the Los Angeles Department of Water and Power lands fall under the guidance of the Inyo County General Plan. In addition, the County has adopted specific plans for the Darwin and Starlight Estates areas, and has an adopted community plan for the unincorporated areas surrounding Bishop. Further, each of the major federal land management agencies has an adopted management plan for federal lands under its jurisdiction. Federal agencies involved in the county include the National Park Service (Death Valley National Park and Manzanar National Historic Site), U.S. Bureau of Land Management, U.S. Forest Service, U.S. Department of Defense (China Lake Naval Weapons Center), and U.S. Bureau of Indian Affairs.

Given the limited amounts of private land available within the county, the transfer of land from private ownership to agency management can have a sizable impact, and planning for these transfers is complex and important.

The Inyo County General Land Use map (Figure 2.1) illustrates that a variety of land use designations set the scale, pattern, and types of development for each area of the county. To clearly provide a range of opportunities for various lifestyles and economic opportunities, these designations have been grouped into four general categories: Residential, Commercial, Industrial, and Other. The Other land type

includes the following sub-categories: Open Space and Recreation, Public Service Facilities, Agriculture, Natural Resources, Natural Hazards, State and Federal Lands, Tribal Lands and Bureau of Indian Affairs. The proposed project alternatives would pass through several privately owned land segments, as well as lands owned and administered by the U.S. Bureau of Land Management, the State of California, the U.S. Forest Service, and Inyo County.

U.S. Highway 395 travels through a variety of land use designations within the project area; most of the land is vacant and undeveloped except within the communities of Olancha and Cartago.

Most of the land in and around Olancha is designated as residential or open space, whereas the land in and around Cartago is designated as residential, agricultural, or open space. Commercial properties are scattered along either side of U.S. Highway 395 through both communities.

At the beginning of the project area, the highway runs through a large portion of land owned by the U.S. Bureau of Land Management. Except for a few residential parcels and one agricultural parcel along the highway, most of the land is vacant. As the highway corridor travels through Olancha and Cartago, parcels designated as residential, agricultural, commercial, and industrial lie along the highway. Once past Cartago, most of the land is vacant, undeveloped, or owned by the U.S. Bureau of Land Management, except for a large strip of land classified as commercial located along Owens Lake.

According to the Inyo County General Plan, most of the new growth in Inyo County over the last few decades has been concentrated within and alongside the incorporated city of Bishop and larger communities, such as Big Pine, Independence, and Lone Pine, rather than in or near unincorporated rural residential communities such as Olancha and Cartago. Currently, there are no residential developments planned in the project area. However, a commercial development – Crystal Geyser Roxane Cabin Bar Ranch bottling facility expansion – is being planned, and a solar demonstration project on Owens Lake has been proposed by the Los Angeles Department of Water and Power. The percentage of the vacant housing units in Olancha (19.6 percent) and Cartago (20 percent) is higher than the county (15.1 percent) and state average (8.1 percent). Consequently, the demand for housing and the production of housing stock has been slow in both communities.

Environmental Consequences

Alternative 1 would require acquisition of the least amount of property because it uses the existing U.S. Highway 395 alignment. Alternatives 2, 2A, and 3 are partially on the existing U.S. Highway 395 alignment, requiring the acquisition of more acres. Alternative 4 is predominantly on a new alignment and would require the acquisition of the greatest number of acres (see Table 2-2). All of the alternatives would require an additional 49.24 acres for a proposed material area that would be used to provide

soil and road materials for the project. The Caltrans Preferred Alternative would require less acreage than Alternative 4, but more than Alternative 3.

Table 2-2 Right-of-Way Impacts

Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	Caltrans Preferred Alternative	No-Build Alternative
130 acres	257 acres	320 acres	271 acres	517 acres	492 acres	0 acres

Alternatives 1 and 2 would require acquisition of strips of land along the existing highway.

Alternative 2A would affect the same land designations south of State Route 190 as Alternatives 1 and 2; however, this alternative would use undeveloped, open space land strips designated as county lands, other lands administered by U.S. Bureau of Land Management through Cartago, one large private parcel on the west side of Cartago, and property owned by Los Angeles Department of Water and Power.

Alternative 3 would avoid passing through Olancha by constructing a new facility west of the existing highway. Land along this segment is mostly undeveloped open space and some residential in the vicinity of Olancha, and scattered residential, commercial, and industrial land types near Cartago.

Alternative 4 would bear west of the current U.S. Highway 395. This proposed expressway would avoid running through both Olancha and Cartago communities. Although the land all along this proposed alignment is mostly undeveloped open space, the new alignment has the potential to eliminate a small number of cottonwood trees and divert a spring. The undeveloped land is almost entirely administered by the U.S. Bureau of Land Management, the U.S. Forest Service, and the Los Angeles Department of Water and Power.

Build alternatives 1, 2, 2A, 3 and 4 would result in the displacement of residential single-family homes, mobile homes, and/or businesses (see Section 2.1.5, Relocations and Real Property Acquisition). The Caltrans Preferred Alternative would avoid passing through Olancha by constructing a new facility west of the existing facility. Unlike the other build alternatives, the Caltrans Preferred Alternative would not displace any residents or operating businesses. It is unlikely that the proposed project would open a new area for development or lead to changes in land use because access would be controlled and the county would have jurisdiction to approve future development within or adjacent to the project. In addition, most lands adjacent to the Caltrans Preferred Alternative would be constrained by the jurisdiction of the public agencies that own them: the U.S. Bureau of Land Management and the Los Angeles Department of Water and Power.

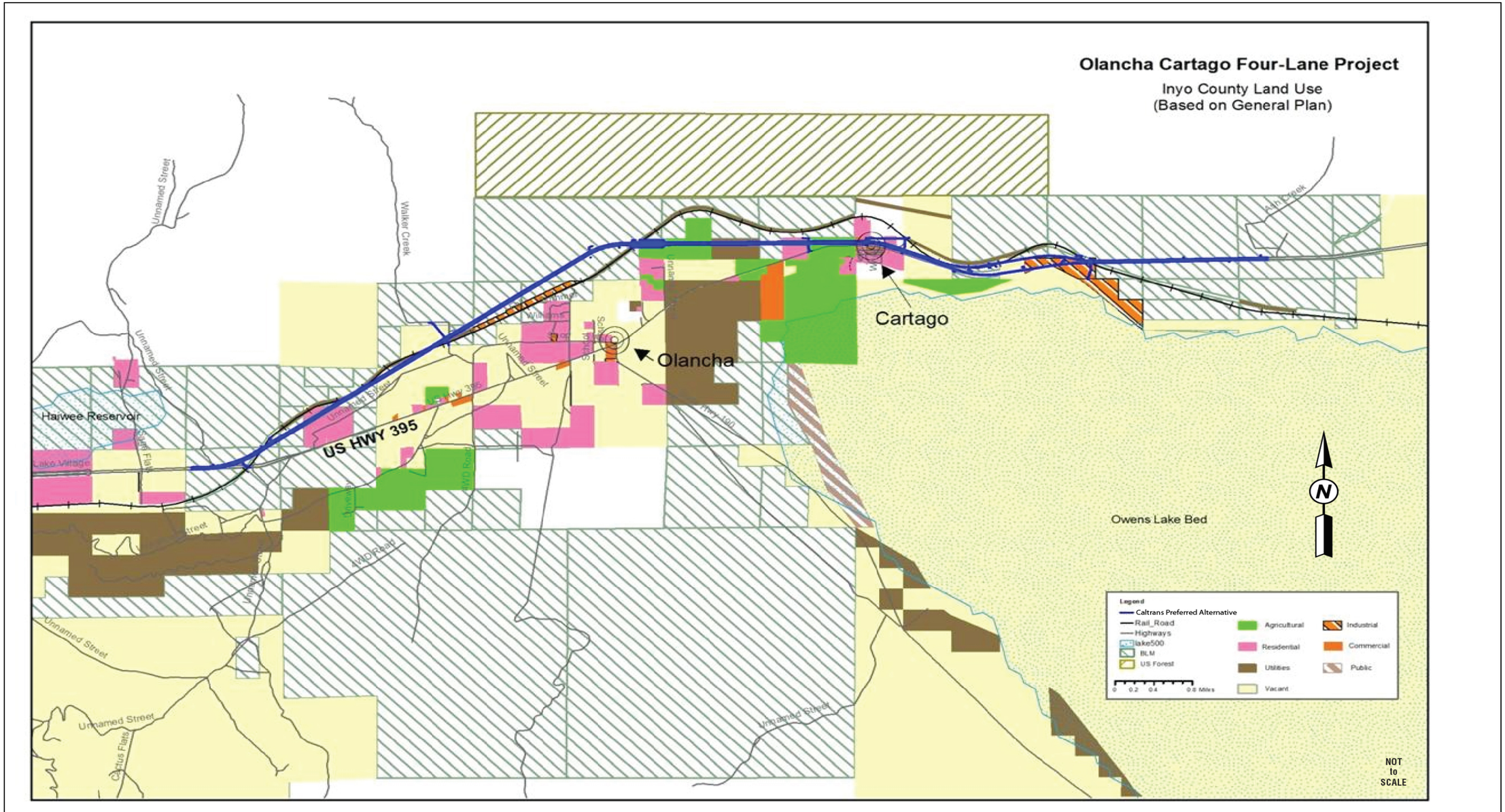


Figure 2.1 Land Use Map

The U.S. Bureau of Land Management administers 211 of the 443 acres required for the Caltrans Preferred Alternative. Under 23 U.S. Code 317, if any part of public lands or interests owned by the United States is reasonably necessary for right-of-way for a highway, such lands may be appropriated and transferred to the State transportation department for such purposes. This also applies to sources of material for the construction or maintenance of any such highway. Caltrans will request a federal land transfer via a highway easement deed to obtain needed lands from the U.S. Bureau of Land Management.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are needed.

2.1.2 Consistency with State, Regional and Local Plans and Programs

Affected Environment

The 2009 Inyo County Regional Transportation Plan, the 2001 Inyo County General Plan, the 1991 Bureau of Land Management Resource Management Plan for the Bishop Field Office, the 1980 California Desert Conservation Area Plan, and the 2006 West Mohave Plan Amendment were used to gather research for this section. U.S. Highway 395 is the major north-south corridor through Inyo County. It is designated as a rural principal arterial, and the highway is part of the National Highway System and is included in the Subsystem of Highways for the Movement of Extra Legal Permit Loads systems. It is a federal Surface Transportation Assistance Act route, authorized for use by larger trucks.

The proposed Olancha/Cartago Four-Lane Project is included in the Inyo County Regional Transportation Plan and in the 2001 Inyo County General Plan. Federal land (U.S. Bureau of Land Management) is within the project area. Two U.S. Bureau of Land Management field offices have jurisdiction of this land – Bishop and Ridgecrest. Each field office has a Resource Management Plan to administer the public land.

Inyo County Regional Transportation Plan

The Inyo County Regional Transportation Plan is a planning document developed in cooperation with Caltrans and other stakeholders to address long-range transportation planning within the county. The goal of this plan is to identify the transportation needs of Inyo County and define a course of action that the county should take to achieve a balanced and coordinated system to transport both people and goods. The 2007/2008 Regional Transportation Plan has a short-term planning horizon of 0-10 years and a long-term planning horizon of 11-20 years. The document serves as the policy guide for local, state, and federal agencies charged with providing quality transportation services to Inyo County.

Inyo County General Plan

The 2001 Inyo County General Plan was approved and completely updated by the Inyo County Board of Supervisors in 2002. The General Plan includes the goals and policies that would guide future development within the county. It also identifies a full set of implementation measures designed to ensure that the policies of the plan are carried out.

The County General Plan identifies two goals it characterizes as critical issues: the expansion of U.S. Highway 395 to four lanes throughout the county and avoiding the bypass of communities within the Owens Valley. However, the County General Plan does not preclude the use of bypasses to meet the regional transportation goals. Inyo County has been involved and supportive in the development of the alternatives, which include bypasses.

U.S. Bureau of Land Management – Bishop Field Office

The Resource Management Plan for the Bishop Field office was last updated in October 1991. The plan focuses on four major issues:

- Recreation – how to provide for a variety of recreational uses, meet increasing demand for recreation opportunities and reduce potential conflicts with other uses
- Wildlife – where and what management prescriptions are needed to enhance or maintain important wildlife habitats and populations.
- Minerals – how to meet the demand for mineral uses and reduce potential conflicts with other uses
- Land ownership and authorizations – where the Bureau of Land Management should acquire or dispose of land, how and where public lands should be available for special or private uses, and how land use authorizations can be managed to reduce potential conflicts with other uses.

U.S. Bureau of Land Management – Ridgecrest Field Office

The Ridgecrest Field Office manages its public lands under the California Desert Conservation Area Plan of 1980, which includes lands from several field offices in the Mojave Desert. The goal of this plan is to provide for the use of the public lands, and resources of the California Desert Conservation Area, including economic, educational, scientific, and recreational uses, in a manner which enhances wherever possible the environmental, cultural, and aesthetic values of the desert and its productivity.

Several amendments have been made to the 1980 plan including the West Mojave Plan Amendment in March 2006. The West Mojave Plan is a habitat conservation plan that presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel, and nearly 100 other sensitive plants and animals and the natural communities of which they are a part.

Environmental Consequences

The proposed project shows consistency and compatibility with the Inyo County General Plan and Inyo County Regional Transportation Plan. The proposed project is identified under the short-range (0-10 years) transportation improvements category in the Regional Transportation Plan. The development components of the project have been programmed previously in the State Transportation Improvement Program and the Regional Transportation Plan recognizes the continuing need to program the construction components of the project. As a result, the construction components of the project were included in the 2014 Inyo County Regional Transportation Improvement Program and are proposed for funding in the 2014 State Transportation Improvement Program.

Alternatives 3, 4, and the Caltrans Preferred Alternative will change the terminus (end point) of State Route 190. Also, all the build alternatives would require that some land be obtained from the U.S. Bureau of Land Management for the project right-of-way.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans will seek approval from the California Transportation Commission for a route re-designation of State Route 190. Recreational access to the mountains to the west of the project would be maintained. All impacts to wildlife would be addressed and mitigated as appropriate (see Section 2.3, Biological Environment). Caltrans will request a federal land transfer via a highway easement deed to obtain needed lands from the U.S. Bureau of Land Management. The minimization and mitigation measures included throughout this document will mitigate any conflicts with the U.S. Bureau of Land Management Resource Management Plan.

2.1.3 Growth

Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act (NEPA) of 1969, requires evaluation of the potential environmental effects of all proposed federal activities and programs. This includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations (40 Code of Federal Regulations 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. The CEQA Guidelines (Section 15126.2[d]), require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…

Affected Environment

The 2001 Inyo County General Plan was used to gather research for this section. Historically, population growth in Inyo County has been slow because the area is very rural with a limited stock of private lands and few employment opportunities. Also, the Inyo County General Plan's growth policies encourage logical and orderly community expansion. The county's primary objective is to concentrate new growth within and close to the existing major communities, which include Bishop, Big Pine, Independence and Lone Pine, with a secondary objective of accommodating growth in the existing rural residential communities such as Olancha, Charleston View, Mustang Mesa and Starlite Estates and ensuring the expansion of existing infrastructure as needed to serve these areas.

Environmental Consequences

In light of the slow growth rate in Inyo County and the fact that most of the traffic using U.S. Highway 395 is either commercial or recreational, it is not anticipated that the proposed project would induce growth or influence future growth. The possibility of project-related growth is remote and not reasonably foreseeable as a result of this project.

Expressway portions of the proposed project would reduce the number of intersections with U.S. Highway 395. Alternative 1 would not affect access points through the communities of Olancha and Cartago. Alternatives 2, 2A, 3, 4, and the Caltrans Preferred Alternative would either include frontage roads to serve existing driveways and local roads or would relinquish part of existing U.S. Highway 395 to the County to maintain access to businesses and residents. Future business or residential development around new intersections would be constrained because most of the land surrounding the project is owned and administered by public agencies. Some growth could occur on leased land and on the limited private lands adjacent to the proposed project or along frontage roads.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and mitigation measures are required.

2.1.4 Community Character and Cohesion

Regulatory Setting

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

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

Affected Environment

The 2000 and 2010 U.S. Census and various interviews discussed in the text below were used to research this section. After first starting out as a mining town toward the late 1800s, Olancha historically has been mainly a ranching community with residential lots and some tourist retail operations. Businesses that serve through traffic, such as restaurants, retail stores, and motels have come and gone in the two communities. After the 1960s, Olancha and Cartago began to develop more as residential communities with the availability of private residential land. Today, while there are three ranching operations within the two communities, there has been a gradual increase in light industrial businesses like the Crystal Geyser Plant.

A few miles north of Olancha is the former town of Cartago. The town began in 1872 as a steamship landing on the southwest shore of Owens Lake to handle shipments of silver bullion from the Cerro Gordo mine in the Inyo Mountains. Today, Cartago is a small community of residential properties for people seeking a quiet, rural lifestyle.

Population

According to the 2000 Census, the population of Olancha was 134 people and the population of Cartago was 109 people. The 2010 Census lists the population of Olancha at 192 and Cartago at 92. The population of Olancha increased 30 percent, while the population of Cartago decreased almost16 percent. The U.S. Census Bureau data shows that between 2000 and 2010 the population of Inyo County increased by 3.2 percent. However, the 2012 population estimate for Inyo County shows a decline of 0.3 percent from 2010. The population of Inyo County is small and shrinking due mainly to a limited stock of privately owned land and few sources of employment.

Race/Ethnicity

Most of the population in the project area is white (80 percent in the year 2000, declining to 69 percent in 2010). This is similar to the population of Inyo County (80 percent white in 2000 declining to 74 percent in 2010). The percentages of all minority populations within the project area are below the averages of Inyo County, except for the Hispanic or Latino population. The percentages of Hispanic or Latino residents within the study area sat at about 38 percent in 2000 declining to 22 percent in 2010. The percentages of other minorities within the project limits are below the averages of Inyo County for American Indians, but above averages for Asians.

Age of Population

The population of Olancha and Cartago has aged over the last 10 years. The 2000 Census showed the median age of Olancha was 37. The 2010 Census data shows the median age in Olancha is now 47 years, with a little over a quarter of the population under age 25, less than 20 percent between 25 and 44 years old, and more than half over age 45.

The age profiles of Cartago are similar. In 2000, the median age was 28, while in 2010 the median age was 45. A quarter of the population is under age 25, while less than 20 percent of the population is between ages 25 and 44, and about half the population is over age 44.

Countywide, in the year 2000, the median age was 43, while in 2010 the median age was 45 years. Thirty percent of the population is under age 25, a little over 20 percent is 25 to 44 years old, and more than 50 percent of the population is over age 45 (19 percent of which is over age 65).

Family Households

Though the numbers are declining, households in Olancha and Cartago are more likely to include minor children and are slightly larger than those in the county in general. In 2000, 40 percent of households in Olancha and 37.5 percent in Cartago included children under 18 years old, while the percentage of family households in Inyo County was 27.9. In 2010, only 22 percent of households in Olancha and 25 percent of households in Cartago included children, while the percentage of family households in Inyo County was 22.9.

According to the 2000 Census, Olancha had an average family size of 3.13 and Cartago had an average family size of 3.36. For that same year, Inyo County had an average family size of 2.88. The 2010 Census shows that the average family size in Olancha and Cartago has decreased, while the average family size in Inyo County has stayed the same (see Table 2-3).

Table 2-3 Total Family Households

	Olancha		Cartago		Inyo County	
Census Year	2000	2010	2000	2010	2000	2010
Total Households	50	78	40	44	7,703	8,049
Family Households (*percent*)	76.0%	64.1%	62.5%	56.8%	64.1%	60.0%
Average Family Size	3.13	3.10	3.36	2.88	2.88	2.88

Source: U.S. Census Bureau, Census 2000 Summary File 1 and Census 2010 Summary File 1

Neighborhoods/Communities

As indicators of community cohesion, family and neighborly ties, gathering places, long-term residency, home ownership, and single-family housing were evaluated.

U.S. Highway 395 travels through the unincorporated communities of Olancha and Cartago. Neither of the communities has established city limits or boundaries; both were determined "defined communities" based on the obvious residential and business facilities clustered on both sides of the existing highway corridor. Cartago is more of a residential community with homes located on both sides of the highway; Olancha has a mix of homes and businesses on both sides of the highway.

Olancha and Cartago are not self-sustaining communities in terms of essential service businesses and community facilities. There is a gas station, restaurant, post office, a volunteer fire station, and a fire station operated by the U.S. Bureau of Land Management. No other essential business services or community facilities such as schools (open), churches, childcare centers, community health care facilities, parks, banks, or grocery stores were identified. To meet most of their needs for supplies and services, residents currently commute to other communities in the region.

Based on interviews, the Ranch House Café Restaurant on the west side of U.S. Highway 395, while not meeting the definition of a "conventional" gathering place due to the remote nature of the project study area, is a common gathering place for local residents. It is reasonable to include the post office as a community-gathering place as well.

The former owners of the Ranch House Café Restaurant and local residents have stated in interviews that the residents of Olancha and the neighboring communities, as well as commuters traveling to and from the eastern Sierra, use the Ranch House Café Restaurant as a favorite gathering place.

Caltrans staff conducted a phone interview (June 12, 2009) with Ms. Claudine Meylemans, the former owner of the Ranch House Café Restaurant at that time. She affirmed that this restaurant was founded in Olancha in the early 1920s. Ms. Meylemans said, "This restaurant serves as a little oasis for people driving through the long way of Road 395." Ms. Meylemans owned the café for more than 20 years, but the restaurant has recently been sold to a new owner.

Olancha Elementary School at 123 School Street in Olancha is occasionally used as a gathering and meeting place. Currently, there are no regular education activities going on at the school; however, it has been used by a small independent church for activities, and recently the school has been used for several afternoon educational programs, such as tutoring and adult education classes.

Based on feedback received during the public information meetings, the open space west of the two communities has long been a popular area for hunting, cattle drives, horseback and other sport activities by residents and visitors. Raising and riding horses have long been popular parts of the communities' rural lifestyle (see Section 2.1.1– Land Use).

Opinions obtained from the public information meeting held in August 2008, and personal communications, indicate that residents of Olancha and Cartago appear to

have a strong sense of community based on family and neighborly ties. One resident commented, "We are all friends and work together as much as possible with each other." Another commented, "Olancha and Cartago is [sic] like a small community, all [the] people know each other." A Cartago resident noted, "Olancha has 100-plus-year-old cottonwood trees and wetlands from Olancha Creek. [Do] not take it away. It is the only beautiful area on 395."

The people in these two communities appear to like and want to maintain their unique rural lifestyle. One resident stated, "As a young family who [has] lived here for 15 years, our lifestyle was our choice." Public participation is discussed in further detail in Chapter 4, Comments and Coordination.

Long-term Residency

According to the 2000 Census, the percentage of homeowners and renters in Olancha and Cartago living in the same house since 1995 was comparable with Inyo County. The 2010 Census shows that the percentage of residents in the same house for more than five years (since 2004) has increased overall (see Table 2-4).

Table 2-4 Long-term Residency

	Olancha	Cartago	Inyo County
Same house since 1995[1]	56.0%	50.0%	52.9%
Same house since 2004[2]	75.9%	58.2%	64.5%

Source: [1] U.S. Census Bureau, Census 2000, [2] U.S. Census Bureau, Census 2010

Home Ownership

According to the 2000 U.S. Census, owner-occupied households in Olancha and Cartago were on average with Inyo County. In 2010, the number of owner-occupied households had decreased the most in Olancha, compared to Cartago and Inyo County, which had only slightly decreased (see Table 2-5).

Table 2-5 Owner-Occupied Households

	Olancha	Cartago	Inyo County
Owner-occupied in 2000	64.0%	65.0%	65.9%
Owner-occupied in 2010	56.4%	63.6%	63.6%

Source: U.S. Census Bureau, Census 2000 Summary File 1 and Census 2010 Summary File 1

Single-family Housing

Residences within the communities consist of single-family homes and mobile homes. There are no duplexes, apartments, condominiums, or other high-density housing within the communities.

Employment and Income

Employment centers for the residents of the project study area are located mostly outside of Olancha and Cartago: in Ridgecrest to the south and Lone Pine to the north. Table 2-6 shows the types of occupations for the employed residents within the project study area as of 2000 and 2010.

Table 2-6 Occupation Types

Occupation		Olancha		Cartago		Inyo County	
		Number	Percent	Number	Percent	Number	Percent
Management, professional, and related occupations	2000	10	14.3	7	13.7	2,212	27.6
	2010	35	43.2	30	68.2	2,593	29.8
Service occupations	2000	12	17.1	10	19.6	1,865	23.3
	2010	15	18.5	0	0	1,940	22.2
Sales and office occupations	2000	25	35.7	5	9.8	1,994	24.9
	2010	21	25.9	0	0	2,783	31.8
Farming, fishing, and forestry occupations[1]	2000	7	10.0	0	0	117	1.5
Construction, extraction, and maintenance occupations[1]	2000	4	5.7	10	19.6	957	12.0
Natural resources, construction, and maintenance occupations[1]	2010	10	12.3	0	0	930	10.6
Production, transportation, and material moving occupations	2000	12	17.1	19	37.3	862	10.8
	2010	0	0	14	31.8	791	9.1
Total employed residents -16 years and over	2000	70	-	51	-	8,007	-
	2010	81	-	44	-	8,737	-

Source: U.S. Census Bureau, 2000 U.S. Census and 2007-2011 American Community Survey. [1]Occupation categories changed from the 2000 Census to the 2007-2001 ACS.

Based on 2000 Census data, in Cartago 5.6 percent of the population 16 years of age or older is unemployed and 37 percent of the population 16 years of age or older is not considered in the labor force. Likewise, in Olancha 1.9 percent of the population 16 years of age or older is unemployed, and 32 percent is not considered in the labor force. In Inyo County, 3.6 percent of the population 16 years of age or older is unemployed, and 39 percent is not considered in the labor force.

According to the 2007-2011 American Community Survey, the total labor force in Inyo County is reported to be 9,401 persons. Of this number, 8,737 are employed, and 664 are reportedly unemployed. The unemployment rate has decreased from 5.9

percent in 2000 to approximately 4.4 percent in 2011. The total labor force in Olancha is 81 persons, which is only 56 percent of the population 16 years or older (44 percent of the population is not currently in the labor force). The total labor force in Cartago is 44 persons, which is 67 percent of the population 16 years or older (33 percent of the population is not currently in the labor force). The American Community Survey had no documented unemployment in Olancha or Cartago. However, the State of California Employment Development Department shows that the 2013 annual unemployment rate for Cartago was 22.4 percent and for Olancha was 0 percent.

The main industrial business in the project study area is the Crystal Geyser bottled water plant located near State Route 190 and U.S. Highway 395 in Olancha. Other retail or service businesses located along U.S. Highway 395 include the Ranch House Café Restaurant, Gus's Jerky, the Rustic Oasis Motel, the Olancha RV and Mobile Home Park (and General Store), the Olancha Mobil Mart and Gas Station, Forms and Printing, and the Ranch Motel. Other active businesses, such as Excel Bridge Manufacturing, Big Pine Distributors, and Lacey Livestock are also found within the project study area. Table 2-7 includes the major businesses identified within and surrounding the project study area. Further details concerning the directly affected businesses and commercial property can be found in Section 2.1.3.2.

Table 2-7 Businesses in Project Study Area

Name of Business	Business Type	Number of Employees	Address
Ranch House Café	Retail/service	20	W Highway 395, Olancha
Gus's Jerky	Retail/service	5	580 S Highway 395, Olancha
Rustic Oasis Motel	Commercial	2	2055 Highway 395, Olancha
Olancha Mobile Home and RV Park	Commercial	3	2351 Highway 395, Olancha,
Excel Bridge Manufacturing	Industry	20	SR190/Highway 395, Olancha
Olancha Mobil Station	Commercial	6	601 S Highway 395, Olancha
Lacey Livestock	Agriculture	0	M & J Lacey
Forms 'n Printing	Light Industry	2	71 S Highway 395,Olancha
Sportsman's Motel	Commercial	N/A	Highway 395, Olancha
Big Pine Distributors	Industry	1-4	930 W Fall Rd, Olancha
Crystal Geyser bottling plant	Industry	150	SR 190/Highway 395, Olancha
Lake Material Stockpile – State of California	Wetland banking	unknown	Olancha
Ranch Motel	Commercial	1-4	2051 Highway 395, Olancha
U.S. Borax Inc.	Industry	5-9	Olancha
Post Office	Government	1	
Anchor Ranch	Agriculture		

Based on Caltrans Environmental staff observations and data from Caltrans Design

Environmental Consequences

Alternative 1 would construct a five-lane facility on the existing alignment through the communities of Olancha and Cartago. The wider highway would require the removal of mature trees on both sides of the highway north of State Route 190. This would change the aesthetic character of the community. The combination of the wider roadway and faster-moving traffic through town could temporarily or permanently disrupt community cohesion. Businesses adjacent to the highway may be displaced or lose parking due to the wider right-of-way required. This alternative would most likely displace the Ranch House Café, which is known to be a common gathering place, the post office and a few other businesses.

Alternatives 2 and 2A would have the widest footprint and displace the greatest number of residences and businesses along U.S. Highway 395. These alternatives would potentially displace eight businesses including the post office and Forms 'n Printing. Also, tree removal and a wider roadway would change the aesthetic character of the two communities. The combination of the wider roadway and faster-moving traffic through town could temporarily disrupt community cohesion, but it is assumed that the community would adapt with time and no permanent damage would result. Alternative 2A would affect one more residence in Cartago than Alternative 2.

Alternatives 3 and 4 would both go around the community of Olancha. Alternative 3 would potentially displace two businesses, including the Rustic Oasis Motel. The community character is expected to remain relatively intact since the highway will be on a new alignment to the west of Olancha. Residents and visitors will be able to use the existing route as a "Main Street" along which pedestrians and bicyclists will be able to travel more safely. Entering and exiting existing businesses and residential driveways will be less cumbersome with fewer oncoming cars. Because this community is fairly isolated, motorists will most likely stop if they are in need of food, fuel, or lodging. The redesignation of existing U.S. Highway 395 as State Route 190 and relinquishment of 4.15 miles of U.S. Highway 395 between Cartago and State Route 190 East would maintain current access to existing businesses.

Alternative 3 would go through the community of Cartago. The existing U.S. Highway 395 would become the northbound lanes and new southbound lanes would be constructed to the west, separated by a 100-foot unpaved median. This would visually divide the main part of the community of Cartago from a small neighborhood located to the west. The wider roadway would change the aesthetic character of the community.

Alternative 4 would go west of Cartago and would not change the aesthetic character of the community.

The Caltrans Preferred Alternative is a combination of Alternatives 3 and 4. It will go to the west of Olancha and through Cartago. Impacts to the community character of Olancha would be similar to the impacts of Alternative 4. In Cartago, the new four-lane roadway with 100-foot unpaved median would be constructed next to existing

U.S. Highway 395. The northbound and southbound lanes will visually divide the main part of the community of Cartago from a small neighborhood to the west. Including the existing highway, there will be three two-lane corridors separated by 100-foot-wide medians and shoulders. The wider roadway would change the aesthetic character of the community. No residences will be displaced, and there are no direct impacts to businesses. Impacts to the communities during construction are expected to be minimal and temporary, and access to homes will be maintained throughout construction. Because the Caltrans Preferred Alternative is mostly on a new alignment, conflicts with construction equipment and project staging will be minimal.

For alternatives that would displace residents and/or businesses, the Right-of-Way Relocation Impact Statement prepared for the project shows that there would be available housing and business resources.

A potential loss of tax revenue could occur due to displaced businesses (included in Alternatives 1, 2, 2A or 3). A loss of tax revenue could occur also from businesses serving through traffic that would be potentially affected by a bypass; however, any loss of sales tax and revenue could be offset by businesses offering similar services and products elsewhere in Inyo County. So, the potential exists for either redistribution or loss of revenue for the County, depending upon whether displaced businesses choose to relocate within or outside of Inyo County, or cease operation altogether. For those businesses that relocate within the county, the tax loss and revenue should be minor and temporary.

Avoidance, Minimization, and/or Mitigation Measures

Where possible, the build alternatives were designed to avoid and/or minimize the number of businesses and residences that would be displaced. Standard signage of services available would be installed to help minimize any indirect impacts to traffic dependent businesses as a result of Alternatives 3, 4 or the Caltrans Preferred Alternative. Relocation assistance would be available for businesses or residents affected by Alternatives 1, 2, 2A or 3 (see Section 2.1.5, Relocations and Real Property Acquisition).

2.1.5 Relocations and Real Property Acquisition

Regulatory Setting

The Department's Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations Part 24. The purpose of the RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix D for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S.

Code 2000d, et seq.). Please see Appendix C for a copy of the Title VI Policy Statement.

Affected Environment

All of the proposed build alternatives would acquire linear strips or small segments of land along the length of the proposed project.

The population density in the project study area is very low, and the type and size of the houses mainly consist of scattered single-family houses and mobile homes. An estimated 56 percent of residents in Olancha and 64 percent of residents in Cartago own their homes (see Table 2-5). Based on field reviews, many of the various small commercial businesses located within the project study area appear closed-down, inactive, or abandoned. Some of these enterprises resemble storage facilities, with no employees present.

Environmental Consequences

The proposed project would acquire portions of various land types in scattered locations along, adjacent to, or to the west of U.S. Highway 395. The Relocation Impact Statement provides a summary of the estimated number of residential and business relocations for each proposed alternative (see Table 2-8).

Table 2-8 Summary of Relocations

Total Displacements	Alternatives					
	1	**2**	**2A**	**3**	**4**	**Caltrans Preferred**
a. Total Residential Units (Single-family and Mobile Homes)	None	6	7	3	1	None
Estimated Total of Displaced Residents*	None	14	15	7	3	None
b. Total Business Units	4	8	8	2	None	None
Estimated Number of Displaced Employees**	8	24	24	5	None	None
Total Units Relocations (a + b)	4	14	15	5	1	None

Source: Relocation Impact Statement

** The estimate of residential displacements is based on an average of 2.25 residents per household as determined by the Department of Finance Demographic Research Unit.*

*** Estimated number of displaced employees is based on a visual surveys and general assumption about the type of businesses.*

The projected residential displacements are based on an average of three residents per household as determined by the Department of Finance Demographic Research Unit for January 2005 for Kern County, the nearest information found for Inyo County. The estimated number of businesses and employees is based on the Caltrans Relocation Impact Statement.

Alternative 2 and 2A displaces the most residents and greatest number of businesses; the Caltrans Preferred Alternative displaces none. Table 2-9 shows the estimated impacts to businesses and residences based on the preliminary 2013 right-of-way estimates.

Avoidance, Minimization, and/or Mitigation Measures

The Relocation Impact Statement shows the relocation resources that are available for displaced people. Table 2-10 summarizes the relocation resources available for displaced residential and non-residential, and includes the nearest full-services communities of Lone Pine and Ridgecrest. Some displaced homeowners may be able to rebuild on the remainder of their parcel. All those displaced would be treated in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the California Relocation Act.

A thorough investigation of the real estate market was performed for the area surrounding the project limits, which includes not only Olancha and Cartago, but also the nearest full-services communities, Lone Pine to the north and Ridgecrest to the south (Ridgecrest being the largest). There are available housing and business resources for the displaced residents and business owners affected by this project. The project carefully reviewed multiple listings provided by Coldwell Banker Best Realty (Ridgecrest office) and Coldwell Banker Bishop Real Estate, who both specialize in these areas, plus the local newspaper, *The Inyo Register*.

Table 2-9 Estimated Impacts to Businesses and Residences

Business or Residence Location	Type	Estimated Impacts	Alternative Affecting Property
APN: 33-110-25	Abandoned residence	Remove home	Alternative 2, Alternative 2A
APN: 33-110-41	Residence	Remove home	Alternative 2, Alternative 2A
APN: 33-110-41	Abandoned store	Remove store	Alternative 1, Alternative 2, Alternative 2A
APN: 33-110-40	Storage yard	Relocate yard	Alternative 2, Alternative 2A
APN: 33-120-04	Motel and outbuildings	Remove entrance	Alternative 3
APN: 33-410-00	RV and mobile home park	Remove mobile homes and RV sites	Alternative 3
APN: 33-460-19	Retail store restaurant	Remove store and restaurant	Alternative 1, Alternative 2, Alternative 2A
APN: 33-460-19	Residence	Remove home	Alternative 2, Alternative 2A
APN: 33-390-01	Residence and outbuildings	Remove home	Alternative 3
APN: 33-380-05	Residence and outbuildings	Remove outbuildings	Alternative 3
APN: 33-080-03	Printing business and abandoned motel	Remove business and motel	Alternative 2, Alternative 2A
APN: 33-080-15	Post office	Remove building	Alternative 1 Alternative 2 Alternative 2A
APN: 33-080-14	Abandoned gas station	Remove building	Alternative 1 Alternative 2 Alternative 2A
APN: 33-080-36	Bridge business	Relocate assembly yard	Alternative 2 Alternative 2A
APN: 33-080-34	2 residences and ranch pasture	Remove homes and pasture	Alternative 2 Alternative 2A
APN: 33-080-34	Residence	Remove home	Alternative 3 Alternative 4
APN: 33-080-27	Restaurant, corrals	Remove front entrance and relocate corrals	Alternative 1
APN: 33-080-27	Restaurant, 2 residences, barn, and associated outbuildings	Remove restaurant, barn, homes, and outbuildings	Alternative 2 Alternative 2A
APN: 29-200-05	Residence	424 sq. feet of land would be impacted, but residence would not be displaced	Alternative 2A Caltrans Preferred Alternative
APN: 29-200-10	Abandoned warehouse	Remove warehouse	Alternative 2 Alternative 3 Caltrans Preferred Alternative
APN: 20-200-27	Residence and outbuildings	Remove home and outbuildings	Alternative 2A
APN: 29-180-26	Mining operation	Relocate entrance	Caltrans Preferred Alternative

Table 2-10 Available Resources for Displacees

Type of Facility	For Rent	For Sale	Total Units
Multi-Family Residences (Apartments, Duplex, Triplex, and 4-plex's Condos)	5	8	13
One-Bedroom Houses	0	1	1
Two-Bedroom Houses	2	16	18
Three-Bedroom Houses	16	78	94
Four-, Five- and Six-Bedroom Houses	4	57	61
Mobile Homes	1	10	11
Industrial/Commercial Properties	1	13	14
Vacant parcels, both residential and commercial	0	89	89

Source: Relocation Impact Statement

Funding would be available to relocate or reestablish any residents affected by the project. The Relocation Assistance Program would help eligible residents by paying certain costs and expenses necessary for or incidental to the purchase or rental of replacement housing and actual reasonable moving expenses to a new location within 50 miles of the displacement property (see Appendix D).

2.1.6 Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Bill Clinton on February 11, 1994. This order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2015, this was $24,250 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. The Department's commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

Affected Environment

The 2010 United States Census was used to gather research for this section. The proposed build alternatives would pass through several populated blocks in Census Tract 8, within Block Group 2. Figure 2.2 shows the 2010 U.S. Census Tract Map for the proposed alternatives. Analysis of census data shows that most of the affected

blocks within the study area are vacant. The populated blocks have been chosen for further analysis and evaluation. Table 2-11 shows the populated blocks within the study area that may be affected by each build alternative.

Table 2-11 Populated Blocks within the Study Area

Alternatives	Populated Blocks Potentially Affected
1, 2, and 2A	140, 148, 164, 165, 166, 170, 177, 178, 970, and 991
3	140, 148, 176, 177, and 178
4	None
CT Preferred Alternative	140 and 148

Source: U.S. Census Bureau, Census 2010 (Census Block numbering changed between the 2000 Census and 2010 Census. Census 2000 data has been removed from this table because it is not comparable to current block numbering).

Table 2-12 provides the ethnic data of the populated census blocks potentially affected by the build alternatives.

Table 2-12 Race and Ethnicity Data

	Census Tract 8 – Block Group 2 – Inyo County, California												
Blocks (2010)	**140**	**148**	**164**	**165**	**166**	**170**	**176**	**177**	**178**	**970**	**991**	**Total**	**%**
Total population	27	40	2	4	21	4	49	21	27	3	1	199	100
RACE													
White	22	22	1	4	11	4	36	20	15	3	1	139	69.8
African American	0	0	0	0	0	0	0	0	0	0	0	0	0
Asian	0	0	0	0	7	0	1	0	0	0	0	8	4.0
American Indian/ Alaska Native	2	2	0	0	0	0	1	1	0	0	0	6	3.0
Some other Race	0	12	0	0	2	0	10	0	11	0	0	35	17.6
Two or more Races	3	4	1	0	1	0	1	0	1	0	0	11	5.5
ETHNICITY													
Hispanic or Latino	5	13	1	0	2	0	11	2	12	2	0	48	24.1
Not Hispanic or Latino	22	27	1	4	19	4	38	19	15	1	1	151	75.9

Source: U.S. Census Bureau, Census 2010

Based on data from the 2010 Census, there are 199 people living within the determined study boundaries of the project area. Most of the population (69.8 percent) is white, and the percentages of all minorities within the project limits are below the averages of Inyo County except for those identifying as Hispanic or Latino,

which, at 24.1 percent of the total population, is just slightly higher than the Inyo County average (19.4 percent). However, when the available block data is analyzed individually, blocks 148, 178, and 970 have higher-than-average Hispanic or Latino populations within the block.

Block 148 is in Olancha. This block includes the area between U.S. Highway 395 and the Los Angeles Aqueduct north of School Road. The total population of the block is 40 people: 22 white, 2 Native American and 16 are of another race not specified in the census. Additionally, 13 people identify themselves as Hispanic or Latino. This population would be directly affected by alternatives 2 and 2A. Alternative 3 and the Caltrans Preferred Alternative also go through this block. Alternative 3 would displace one residence.

Block 178 is in Olancha on the west side of U.S. Highway 395. This block represents a small housing development bordered by Fall, Williams, and Summer Roads. The total population of this block is 27 people: 15 are white and 12 are of another race not specified in the census. Additionally, 12 people identify themselves as Hispanic or Latino. Alternative 3 is the only build alternative that has a potential to skirt this development but it does not appear that any of these residences would be directly affected.

Block 970 is in Olancha on the west side of U.S. Highway 395 and bordered by Shop Street and the Old State Highway. The total population of this block is 3 people, all of whom are white. Two of the individuals identify themselves as Hispanic or Latino. The proposed build alternatives would not affect this population because all alternatives are designed to the west or east of this block.

Income and Poverty Level

The 2000 Census data reports the median household income of Olancha and Cartago was $30,000 and $34,375, respectively. The median household incomes of the two communities are close to Inyo County's average median household income of $35,006 for the same time period. The 2007-2011 American Community Survey data showed an increase in the median household income for the county and project area: Olancha, $37,250; Cartago, $44,293; and Inyo County, $49,571.

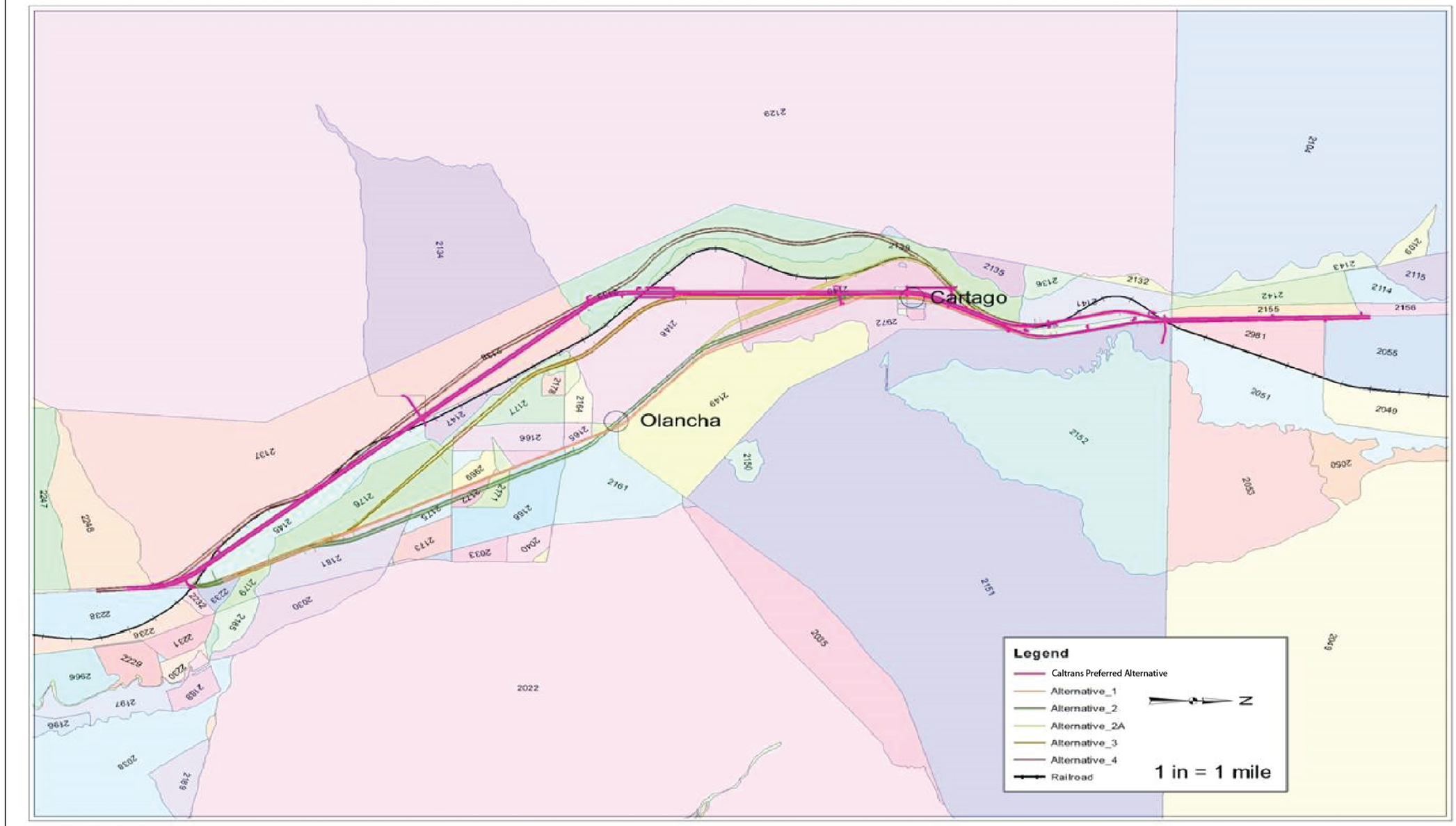


Figure 2.2 Census Block Map

The average number of residents in 2007 living below the federal poverty level in Olancha and Cartago was 7.8 percent and 5.1 percent, respectively. This was well below the county average of 12.6 percent (see Table 2-13). Data from the 2007-2011 American Community Survey showed no residents in Olancha or Cartago living below the federal poverty level.

Table 2-13 Median Household Income and Poverty Level

Income Category	Olancha	Cartago	Inyo County
Median household income in 1999 [1]	$30,000	$34,375	$35,006
Individuals below poverty level in 1999 [1]	9.4%	5.1%	12.6%
Median household income in 2011 [2]	$37,250	$44,293	$49,571
Residents below poverty level in 2011 [2]	n/a	n/a	11.7%

Source: [1]U.S. Census Bureau, Census 2000 Summary File 3;[2] U.S. Census Bureau, 2007-2011 American Community Survey; n/a Indicates that either no sample observations or too few sample observations were available to compute an estimate

When the two communities' median household incomes (2011) are compared to Inyo County's average of $49,186, Cartago's median household income is 11 percent lower and Olancha's median household income is 25 percent lower. Table 2-13 shows the median household income for 1999 and 2011 for Olancha, Cartago, and Inyo County. The two communities have fewer people living below the poverty level than does Inyo County.

Environmental Consequences

Caltrans staff supplemented the 2000 and 2010 U.S. Census data by conducting field analysis and interviewing residents of the project area to identify minority and low-income populations and determine whether the project would have an environmental justice impact.

It is expected that the proposed project would not cause disproportionately high and adverse effects on any minority or low-income populations because the project would avoid all but one of these blocks and would not result in any relocations in the one census block that is affected.

Avoidance, Minimization, and/or Mitigation Measures

No minority or low-income populations would be adversely affected by the proposed project as determined above. Therefore, no specific mitigation measures will be required.

2.1.7 Utilities and Emergency Services

Affected Environment

A Project Report and Right-of-Way Data Sheets were completed for this project in 2014.

Emergency Services

The Inyo County Sheriff's Department, with offices located in Lone Pine, provides law enforcement within the study area. The California Highway Patrol is responsible for traffic enforcement in the unincorporated rural communities on U.S. Highway 395 throughout Inyo County.

The Lone Pine Fire District and the Olancha/Cartago Fire Department provide fire services and protection to the area. The U.S. Bureau of Land Management has a fire station in Olancha that provides mutual aid support to other fire departments when needed.

Utilities

The Los Angeles Department of Water and Power and Southern California Edison provide electricity service in Olancha and Cartago. Residences in Olancha are served by individual water wells, and part of Cartago is served by a water system operated by a mutual water company.

Sierra Disposal serves the Lone Pine area, transporting waste from both the Keeler Transfer Station and the Olancha Transfer Station to the Lone Pine landfill. Sewage disposal in Olancha and Cartago is accomplished in part by a private community septic system and the rest through individual septic systems.

Verizon Fiber Optic lines and Verizon Underground Telephone lines also exists within the study area.

Environmental Consequences

Emergency Services

In providing an upgraded highway through the area, the project will have a beneficial impact on fire protection, law enforcement, emergency, and other public services. In addition, the project will increase access to the project area and facilitate faster fire and medical response times to emergencies in the area by providing additional travel lanes, passing opportunities, and improved intersections. One-way reversing traffic control during certain construction stages may temporarily cause minor delays for emergency services.

The Caltrans Preferred Alternative will have several access points from the existing highway to the new alignment to facilitate emergency and local traffic access, as well as recreational access to the mountains to the west. In addition, re-designation of existing U.S. Highway 395 as State Route 190 and relinquishment of 4.15 miles of U.S. Highway 395 between Cartago and State Route 190 East will allow the existing highway to remain as an alternative route for emergency services.

Utilities

The proposed project would require the relocation of utility facilities. The Caltrans Right-of-Way division prepared a preliminary data sheet for utility relocations for each alternative. The utility relocation table (Table 2-14) summarizes the total

number of electrical poles, fiber optic lines, and underground telephone lines that would have to be relocated by alternative. The table also shows the estimated state share of the cost for utility relocation.

Table 2-14 Utility Relocations

Utility	Alternative					
	1	**2**	**2A**	**3**	**4**	**Caltrans Preferred**
Wood Poles	195	162	92	12	9	59
Wood Poles (H-poles)	0	12	0	0	4	12
Steel Tower	0	3	0	0	2	2
Fiber Optic lines (Feet)	52,800	39,600	23,760	15,840	2,000	8,900
UG Telephone lines (Feet)	28,512	28,512	16,368	0	1,000	2,100
Utility relocation (State Share)	$6,990,600[1]	$7,935,600[1]	$3,416,400[1]	$1,130,400[1]	$1,385,000[1]	$3,135,000[2]

[1] Cost estimate for the utility relocation (State's share) as of the Year 2008
[2] Cost estimate for the utility relocation (State's share) as of the 2013
Source: Caltrans, Right-of-way Data Sheet March 16, 2010 and July 15, 2013

Utilities in conflict with an alternative would be relocated outside of the new right-of-way. The details of this have not yet been decided upon, and involve coordination with private utility companies. However, for each build alternative, the study area for the various natural and physical environmental resources extended beyond the proposed right-of-way. If utilities can be relocated within the study area, mitigation for impacts would be added to the project mitigation. If utilities cannot be relocated within the study area, additional studies to determine impact and required mitigation would be needed.

Avoidance, Minimization, and/or Mitigation Measures

Emergency Services

During construction, a traffic management plan (TMP) would be followed to accommodate local traffic patterns and reduce delay, congestion, and accidents. By incorporating the TMP and constructing the project in stages, disruption to local and regional traffic would be minimized. Caltrans would also coordinate with ambulance, police, sheriff and fire departments prior to any construction to minimize effects on emergency services.

Utilities

Caltrans would coordinate with the Los Angeles Department of Water and Power, Southern California Edison and Verizon companies to relocate utilities. Electric and telephone lines affected would be kept in operation during construction. All of the affected electrical and telephone poles, as well as underground cable lines, would be relocated on new utility easements when necessary.

2.1.8 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

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

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

Affected Environment

A Project Report was completed in 2014 and Traffic Operations/Safety Reports were completed in 2010 and 2013.

Access, Circulation and Parking

U.S. Highway 395 is a major element of the transportation corridor connecting the eastern Sierra region, Inyo and Mono counties, and western central Nevada to Southern California. As a transportation corridor, it serves several purposes. First, it is vital to the economy of the eastern Sierra region for the shipment of goods and materials. The region has very little manufacturing, so it imports food, clothing, and other goods. Second, this corridor has major recreational uses. An Origination and Destination Travel Study conducted by Caltrans in 2011 for U.S. Highway 395 through Inyo and Mono counties indicated that 61 percent of the traffic on U.S. Highway 395 was recreationally oriented and that recreation vehicles composed 1.7 percent of the vehicle mix. It also found that 47 percent of the traffic originated in Southern California.

A summary of the current and projected traffic data is shown in Table 2-15, based on 2012 traffic volume counts. The future traffic volumes are based on a growth rate of 0.5 percent per year.

Table 2-15 Traffic Data within Project Limits

	2012	2019	2024	2029
Average Annual Daily Traffic	5,300	5,490	5,630	5,770
Percent Trucks	20.3	20.3	20.3	20.3
20-Year Growth Rate (percent)	-	0.5	0.5	0.5

Source: December 2013 Caltrans Traffic Studies

According to the data in Table 2-15, increasing traffic volumes can be expected within this segment on U.S. Highway 395 through 2029. The existing facility is currently operating at a level of service D and, without improvement this segment would fall to a level of service E by 2039. Current and projected levels of service are shown in Table 2-16.

Table 2-16 Level of Service within Project Limits

	2012	2019	2039
Level of service with no improvements made	D	D	E
Level of service with project	-	A	A

Source: January 2010 Caltrans Traffic Studies

Low level of service is especially evident on weekends and holidays when traffic volumes are extremely heavy. Because the study area is mostly rural, drivers of passenger cars tend to travel at a high rate of speed along the route. But trucks and recreational vehicles, which make up more than a quarter of the traffic, usually travel slower, so traffic starts to "queue" (line up) behind the larger, slower-moving vehicles. As slow-moving vehicles form larger queues, drivers can become frustrated and may attempt to pass, often unsafely. Through more than half of the project limits, barrier striping prohibits passing by those drivers who would prefer to travel faster. In areas without barrier striping, passing opportunities are further restricted by the high traffic volumes. The congestion and resulting longer travel time may result in driver fatigue.

Accident information is summarized in Table 2-17. The Traffic Data Report indicated that 130 accidents occurred in this portion of U.S. Highway 395 during a 10-year period ending December 31, 2011. The fatal accident rate in this section is higher than the statewide average.

Table 2-17 Traffic Accidents Information
(January 1, 2002 through December 31, 2011)

Type of Accidents	Accident Rate/Million Vehicle Miles	
	Study Area Average	Statewide Average
Fatal	0.029	0.017
Injury	0.23	0.29
Total	0.48	0.67*

**Total Accident Rate/Million Vehicle Miles includes property damage accidents not shown.*
Source: January 2013 Caltrans Traffic Studies

Pedestrian and Bicycle Access

U.S. Highway 395 currently has no sidewalks or designated pedestrian crossings in the project area. Because the project area is rural, few, if any, pedestrians are to be expected along the corridor. U.S. Highway 395 is recognized as a Class III Bike Route in the Inyo County Bikeways Master Plan. This would not change, as the expressway designation would still allow bicycle use.

Public Transportation

No passenger or freight rail service currently exists in Inyo County, and commercial air travel is non-existent. Eastern Sierra Transit Authority offers deviated fixed route and dial-a-ride bus service in and between the populated areas of Inyo and Mono counties in addition to an inter-regional route between Reno, Nevada, and Palmdale, California. Most visitors arrive or pass through the county via the highway system.

Environmental Consequences

Access, Circulation, and Parking

The project would improve the level of service of the roadway by increasing capacity to meet present and future traffic demands. It would also ease peak traffic congestion, remove passing restrictions, separate north and southbound traffic, and provide emergency parking areas. Widening the roadway to four lanes, adding a median, and widening the shoulders would provide added room for emergency maneuvering and errant driver recovery. Flattening embankment slopes and creating a wider roadside environment would reduce rollover type accidents.

U.S. Highway 395 is recognized as a Class III Bike Route in the Inyo County Bikeways Master Plan. This would not change, as the expressway designation would still allow bicycle use. For the alternatives that bypass the communities of Olancha and Cartago, pedestrian and bicycle traffic access would improve on the old U.S. Highway 395 through these communities.

Park and ride facilities are not applicable to this project as most commuter-generated trips originate from communities other than Olancha and Cartago.

Avoidance, Minimization, and/or Mitigation Measures

During construction, a traffic management plan would help reduce traffic delays, congestion, and accidents. Standard Caltrans construction practices include providing information on roadway conditions, as well as using portable changeable messages signs, lane and road closures, advance warning signs, alternate routes, reverse and alternate traffic control, and a traffic contingency plan for unforeseen circumstances and emergencies.

The Caltrans Public Affairs Office would keep the local media informed of construction progress and any delays, closures, and major changes in traffic patterns. The resident engineer would provide this information through both the Caltrans Transportation Management Center and Caltrans District 9's Traffic Branch.

2.1.9 Wilderness Characteristics

Affected Environment

The 1979 California Desert Conservation Area Wilderness Inventory and discussions with U.S. Bureau of Land Management staff were used to gather research for this section. The public land surrounding the proposed action area is administered by two U.S. Bureau of Land Management field offices. The Bishop Field Office manages the land north of State Route 190 and Olancha Creek, while the Ridgecrest Field Office manages the land to the South of State Route 190 and Olancha Creek.

Bishop Field Office

The land surrounding the project area was inventoried for wilderness characteristics in 1979 as part of the Cottonwood wilderness inventory unit (CA-010-053). The Cottonwood unit was determined not to have wilderness characteristics and was removed from further consideration because of the influences of U.S. Highway 395, multiple distribution and transmission power lines, maintenance roads for power lines, other existing dirt access roads, the Los Angeles Department of Water and Power aqueduct, and the Cottonwood power plant. These structural and surface features have not changed since the 1979 inventory. The area was, however, re-reviewed in March 2012. These features still exist and the general area still does not have wilderness characteristics.

Ridgecrest Field Office

The project area crosses two units that were inventoried for wilderness characteristics in January 2014. Unit #131-4D was originally part of a much larger 1979 inventory of the Coso wilderness inventory unit (CDCA 131). The boundaries of this original unit encompassed both private and public lands. Portions of the original unit that remain outside of wilderness have now been subdivided into smaller, isolated units where private lands and other developments intrude. Unit #131-4D is encircled by private lands to the north, east, and south. It is fronted by U.S. Highway 395 to the west. It is composed of only 728 acres and therefore does not meet the minimum size requirement for wilderness character.

The second unit, now identified as #157C, has not been inventoried and was not part of the original 1979 wilderness inventory unit. The unit is almost entirely committed to a designated transmission corridor that takes up all of its length and most of its breadth. It is bisected by two powerlines and a braided wilderness inventory road used to maintain the powerlines. In addition, there are at least two more wilderness inventory roads that subdivide the unit, running perpendicular to the powerlines. The contiguous U.S. Forest Service boundary is offset from wilderness by 1-4 miles. The net effect is that no part of the unit meets the stand alone wilderness minimum size requirement of 5,000 acres or more.

Both units are not in a predominantly natural condition and/or are surrounded by lands that are not natural. Imprints of man from highways, maintained dirt roads, transmission lines, and/or homes and other developments are either present and/or are readily visible from most locations within these units. The units do not have lands with wilderness characteristics.

Environmental Consequences

Because the general project area does not have wilderness characteristics, the project will have no impacts to wilderness characteristics.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation measures are necessary.

2.1.10 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 U.S. Code 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act [23 U.S. 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

A Visual Impact Assessment for the project was completed in January 2010. An addendum was completed in July 2014. The assessment and addendum were prepared in accordance with the methodologies established by the Federal Highway Administration Visual Impact Assessment for Highway Projects Guidance (1981). An

addendum to the Visual Impact Assessment was completed for the Caltrans Preferred Alternative in July 2014.

This project is located in an area where the high desert meets the high Sierra. Dominating the view is the Sierra Nevada and especially Olancha Peak known as the "Southern Sentinel of the Sierra," with an elevation of 11,800 feet above sea level. To the east is the dry lakebed of Owens Lake, which at one time was the second largest lake in California before its waters were diverted into the Los Angeles Aqueduct. Beyond the lake are the Coso and Inyo mountain ranges. Olancha and Cartago creeks flow east through the project area. This area also represents the northern range limit for the Joshua tree (*Yucca brevifolia*) and creosote bush (*Larrea tridentata*). Willows and cottonwood trees that grow along the creeks and in the town of Olancha contrast with the sage scrub vegetation that grows along the ancient lakeshore up onto the alluvial fans of the Sierra.

U.S. Highway 395 through the project area is eligible to be a state scenic highway, but has not been officially designated as such. U.S. Highway 395 has long been recognized for its scenic qualities and is classified as part of the Eastern Sierra Scenic Byway.

The project area north of State Route 190 is within the U.S. Bureau of Land Management, Bishop Field Office Owens Lake Management Area. West of Owens Lake, the Owens Lake Management Area has a Visual Resource Management standard of Class IV, which is the lowest visual quality rating. Visual Resource Management is a system for minimizing the visual impacts of surface-disturbing activities and maintaining scenic values for the future.

The project area south of State Route 190 is within the U.S. Bureau of Land Management, Ridgecrest Field Office California Desert Conservation Area (CDCA). The CDCA Plan of 1960, as amended, recognized scenic values but did not determine Visual Resource Management Class areas. A Visual Resource Inventory was completed for the conservation area in 2012 in anticipation of the Desert Renewable Energy Conservation Plan Amendment to the CDCA Plan. The Ridgecrest Field Office reviewed the results and recommended to classify the vicinity within the project area as Class III. The object of Class III is to partially retain the existing character of the landscape.

Originally established as a mining town toward the late 1800s, Olancha evolved to become mostly a ranching community with some residential areas. The residential lots are scattered along the west side of the existing highway. The ranches have pastureland on both sides of the highway. There are rows of cottonwood trees growing around the two major ranches and extending up Olancha Creek to the west. The original settlers and ranchers planted these trees as shelter from the fierce wind and dust storms common to the area. Over the years, the trees have multiplied so that the main part of town is under the canopy of mature trees.

A few miles north of Olancha is the former town of Cartago. The town began in 1872 as a steamship landing on the southwest shore of Owens Lake to handle shipments of silver bullion from the Cerro Gordo mine in the Inyo Mountains. Today, Cartago is a small community of residential properties for people seeking a quiet, rural lifestyle.

Criteria from the Federal Highway Administration Visual Impact Assessment for Highway Projects Guidance were used to describe the visual character of the project area. The criteria include the following:

- Vividness or the memorable strength of the landscape components as they combine in a distinctive visual pattern.
- Intactness or the visual integrity of the landscape and its freedom from non-typical encroaching elements.
- Unity or the visual harmony of the landscape considered as a whole.

Through analysis and examination of the visual experience of moving through the view corridor, it was found that the existing high visual quality of U.S. Highway 395 and its surroundings is mostly due to the following:

- Exaggerated topographic relief
- Native and ranch land vegetation. The harmonious visual pattern of diverse vegetation in the overlapping plant communities of the project area.
- The dramatic vistas of the Sierra Nevada and Inyo Mountains ranges.
- The combination of alternating distant vistas and narrowing view sheds caused by the groves of cottonwood trees and undulating landforms.

Environmental Consequences

For this project, two viewer groups were considered. Highway users (people with views from the road) included tourists, local commuters, long distance travelers and interstate truckers. Neighbors included residential, industrial and commercial development located on both sides of the existing highway. The roadway and its vehicular traffic are visible from most highway neighbors unless landscaping has been planted for privacy. Most of the visual attention of both highway users and neighbors is focused on the large Sierra Nevada Mountains to the west, and to the east the Owens Valley in the foreground and middle ground and the Coso and Inyo Mountains toward the eastern horizon.

Through Olancha, Alternatives 1, 2 and 2A would remove the mature cottonwood trees adjacent to U.S. Highway 395 to accommodate the wider roadway. The Visual Impact Assessment indicates that these trees contribute to the rural visual quality of the area and have an effect on the spatial characteristics of the corridor. These trees and their associated habitat provide visual interest and are consistent with the look of

a rural highway. Removal of these trees could result in a high visual impact to the highway user as well as the neighbors. While these are not permanent impacts, reestablishment of the native vegetation may take up to five years, and trees may take 25 years or more to be reestablished. Measures to preserve and protect existing vegetation would greatly enhance post-construction visual quality.

Through Cartago, Alternatives 2, 3 and the Caltrans Preferred Alternative would visually divide the main part of the community from a small neighborhood located to the west. Including the existing highway, there will be two (Alternatives 2 and 3) or three (Caltrans Preferred Alternative) two-lane corridors separated by 100-foot-wide medians and shoulders. This would change the rural look of the highway and could result in a moderate visual impact to the highway user as well as the neighbors. Revegetation of the medians and shoulder with native species would lessen the visual impacts. Views of the Sierra Nevada Mountains toward the west from the town of Cartago will not be affected because the roadway will be constructed at grade.

Alternative 4 and the southern portions of Alternative 3 and the Caltrans Preferred Alternative would be constructed on new alignments. Altering landforms by creating cuts and fills in the adjacent terrain during construction has the potential to create permanent visual impacts. However, these alternatives would not create structures or roadway grades that would block the views of the Sierra Nevada Mountains toward the west from the communities of Olancha and Cartago. For the traveling public, the visual quality on the new highway alignment will be improved as the roadway will be relocated to the west at a higher elevation, closer to the scenic mountain range. Views to the east of the Owens Valley will be improved because the highway will be higher in elevation that the old alignment. Travelers will have reduced views of the community of Olancha which consists of uninteresting architecture and scattered development. The visual impact would be low to moderate.

For residents in Olancha, Alternative 4 and the southern portions of Alternative 3 and the Caltrans Preferred Alternative would only be visible where the roadway is elevated atop fill slopes. The alternatives would visually mimic the Los Angeles Aqueduct. What would be visible will be similar in horizontal form to the existing aqueduct. As native revegetation becomes established, the new highway alignment will be barely noticeable to local residents.

North of State Route 190 (Bishop Field Office), the Caltrans Preferred Alternative will not exceed the U.S. Bureau of Land Management's Visual Resource Management standards of Class IV. While the overall visual impact of the project will be moderately low, Class IV allows the level of change to the characteristic landscape to be high.

South of State Route 190 (Ridgecrest Field Office), the Caltrans Preferred Alternative will not exceed the Bureau of Land Management Visual Resources Management Standards of Class III. While the overall visual impact of the project will be low, Class III allows a moderate level of change to the landscape characteristics.

Avoidance, Minimization, and/or Mitigation Measures

The following measures would be taken to minimize the impacts to visual resources:

- All median and disturbed roadside areas will be revegetated with plant species found in the Creosote Brush scrubland. Replaced trees and shrubs would be strategically located to blend with and enhance the existing plant communities.

- Caltrans will replace any Fremont cottonwood trees or native species of willow trees that are 4 inches or greater in diameter (at breast height) at a ratio determined by the California Department of Fish and Wildlife. After the roadway is constructed, a portion of the Fremont cottonwood and willow trees will be planted onsite along the outer edge of the new right-of-way near the Olancha Creek crossing, wherever it is possible. Trees will also be planted at an offsite location as close to the project site as possible. All newly planted trees would be monitored for the period to be determined by the California Department of Fish and Wildlife. Watering may be required until the taproot is established.

- Revegetation and planting measures will commence prior to the end of project construction.

- When structures are added, types, materials, colors, and textures will be selected to blend with the adjacent natural landscape components (soil, vegetation, rock, etc.) to the greatest practical degree.

- Cut and fill slopes will be contour-graded to a non-uniform profile to blend with adjacent slopes. Slope grades will be built to make planting, erosion control, and maintenance as easy and efficient as possible, with increased slope rounding at the top and bottom of cuts and fills, and by creating liberal slope variances.

- Topsoil/duff will be collected and stored for placement on disturbed areas prior to replanting.

- The native seed mix, application rates, and planting methods will be determined by or approved in cooperation with a Caltrans landscape architecture representative.

- Existing native vegetation will be protected and preserved wherever possible.

- Scenic vista points are proposed for the Caltrans Preferred Alternative and would complement the scenic nature of U.S. Highway 395. The vista points would be constructed near the crossing of Olancha Creek at the high point of the new alignment above Olancha, and would allow travelers to look at the Sierra Mountains to the west or over the Owens Dry Lake to the east.

- If used, the proposed material site would be restored by contour grading, replacing topsoil and revegetating the site with native plant or seeds. The material area would then be closed after the project is complete.

2.1.11 Cultural Resources

Regulatory Setting

The term "cultural resources" as used in this document refers to historic and archaeological resources, regardless of significance. The main federal laws dealing with cultural resources include the following:

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800). On January 1, 2014, the *First Amended Programmatic Agreement Among The Federal Highway Administration, The Advisory Council On Historic Preservation, The California State Historic Preservation Officer, And The California Department Of Transportation Regarding Compliance With Section 106 Of The National Historic Preservation Act, As It Pertains to the Federal-Aid Highway Program in California,* went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans.

The Archaeological Resources Protection Act applies when a project may involve archaeological resources located on federal or tribal land. This act requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties.

Historical resources are considered under the California Environmental Quality Act, as well as California Public Resources Code Section 5024.1, which established the California Register of Historical Resources. Section 5024 of the Public Resources Code requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way.

Affected Environment

For purposes of this document (and continuous with cultural resource definitions), prehistoric archaeological sites are those with materials associated with Native Americans for whom there is no written record of their history. Historic archaeological sites are those with materials associated with post-European contact.

Historic Properties Survey Reports were completed in 2004 and 2010 that summarized Archeological Survey Reports that were completed in 2001 and 2009. After the addition of a new alternative, another Archeological Survey Report was completed in 2013. The project-specific Programmatic Agreement and corresponding Finding of Adverse Effect for the project was completed in 2014. An additional study was completed in 2014 by Far Western Anthropological Research Group to gather additional information for the project's Section 4(f) Evaluation.

Caltrans consulted archival sources and conducted field investigations to identify historic properties in the Area of Potential Effects for each study conducted. The Area of Potential Effects encompasses the existing and proposed right-of-way for each project alternative and extends beyond the existing right-of-way boundaries to include the complete archaeological site boundaries. The Area of Potential Effects also includes any areas of ground-disturbing construction activities and anticipated temporary use such as the proposed material site and staging areas.

The U.S. Bureau of Land Management administers much of the property adjacent to the project. Caltrans archaeologists consulted with U.S. Bureau of Land Management staff during their surveys of the project study area.

Native American consultation efforts included contacts with the Native American Heritage Commission and the Owens Valley Indian Community, which included representatives of the Big Pine Paiute Tribe, the Timbisha Tribe, the Lone Pine Paiute-Shoshone Tribe, the Bishop Paiute Tribe, and the Fort Independence Paiute Tribe. The Owens Valley Indian Community identified three main issues: Native American monitoring of archaeological excavations; avoiding disturbance to archaeological deposits that contain Native American remains; and curation of artifacts recovered during the course of the project. Throughout the course of cultural surveys and the preparation of studies, Caltrans continued to meet with representatives of the Owens Valley Indian Community to update them on the status of the project, including updates of the Section 106 compliance efforts. Details of these meetings are included in Chapter 4 of this document.

The Historic Properties Survey Report Olancha/Cartago Four-Lane Project, US Route 395 Inyo County, California (2004) summarizes several years of built environment, archaeological, and ethnographic studies covering the initial Area of Potential Effects that included five alternatives that are identified as Alternative 1, Alternative 2, Alternative 2A, Alternative 3, and Alternative 3A. The previous studies summarized in this report are:

- *Archaeological Survey Report Cartago-Olancha Four-Lane Project, U.S. Route 395, Inyo County, California* (2001). This was the initial survey report that identified and recorded 51 archaeological sites within the original Area of Potential Effects.

- *Lacustrine Lifestyles Along Owens Lake: NRHP Evaluation of 15 Prehistoric Archaeological Sites for the Olancha/Cartago Four-Lane Project, U.S. 395, Inyo County, California* (2003). This study refined the original Area of Potential Effects (referred to as Phase 2 Study Area) and assessed the eligibility of 17 sites, two for which were determined ineligible prior to investigation. Of the remaining 15 sites, two (CA-INY-43 and CA-INY-1317) had previously been determined eligible, but were excavated to determine if archaeological deposits within the Phase 2 Study Area were contributing to each sites eligibility.

- *Historical Architectural Survey Report* (2003). This study identified 87 buildings and structures within the project's architectural study area. Of the 87 buildings and structures, two were previously determined ineligible and 49 were treated in accordance with Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later. Of the remaining 36 resources, only one (the Olancha Schoolhouse) was considered eligible for the National Register of Historic Places.

- *Historic Study Report* (2003). This study evaluated 10 historical archaeological sites. Of these sites, six were determined ineligible, three were identified as potentially eligible, and one fell outside of the project area.

- *Participants and Observers: Perspectives on Historic Native American Information From Independence and Haiwee Reservoir in the Owns Valley for the Olancha/Cartago Four-Lane Project, US Route 395, Inyo County, California* (2003). This study provided an ethnographic context and information from knowledgeable persons about the identified sites and land use area.

The studies listed above, which are summarized in the 2004 Historic Properties Survey Report, resulted in the identification of 175 cultural resources within the project's Area of Potential Effects. Of these 175 resources, 71 were determined to be exempt from eligibility for the National Register of Historic Places. The evaluation of the remaining 38 resources was postponed until an alternative was selected to avoid unnecessary disruptions of sites. Of the remaining 66 resources, the State Historic Preservation Officer concurred with Caltrans' determinations that eight archaeological sites and one building were eligible for the National Register of Historic Places. The eligible building was:

- The Olancha Schoolhouse, located on APN 33-080-07. The Olancha Schoolhouse was built in 1914 to serve the communities of Olancha and later Cartago until 1949, when a new multiple-room school house was built on the corner of Shop Street and School Road.

Two of the eight significant archaeological sites (CA-INY-43 and CA-INY-1317/H) had been previously determined eligible. The State Historic Preservation Officer concurred that archaeological deposits within the Phase II study area did not contribute to the eligibility of CA-INY-43 and that archaeological deposits contributing to the eligibility of CA-INY-1317/H fell within the Area of Potential Effects:

- CA-INY-43, a prehistoric habitation site with milling features, obsidian flakes and tools, Owens Valley Brownware, portable groundstone, midden, and glass beads.

- CA-INY-1317/H: This prehistoric site contains stone tools, projectile points, milling equipment, brownware sherds, bone tools and ornaments, incised stone, and beads.

The remaining six eligible archaeological sites are described below:

- CA-INY-1991/H is a large multicomponent site dating back to AD 1425; however, only the prehistoric component is eligible. The site includes a hearth feature, flaked stone tools, and faunal remains. The northern portion of the site is located on a private property and was not studied because Caltrans could not get access to the property. Additionally, the western portion of the site was not studied because it is well outside the Area of Potential Effects.

- CA-INY-5967 is a prehistoric site containing projectile points and other bifaces, retouched flakes, flaked stone, ground stone, a bone awl, and a buried hearth. The hearth dates back to AD 245.

- CA-INY-5984 is a prehistoric site with artifacts dating back to AD 1250. Artifacts include house floor and associated hearth, bedrock milling features, projectile points, pottery, glass beads, and midden deposits.

- CA-INY-6021 is a prehistoric site that contains a house floor, hearth, projectile points and other bifaces, retouched flakes, flaked stone, a bone awl, shell beads, and faunal remains. Artifacts are estimated to be between 55 BC and AD 600.

- CA-INY-6263 is a prehistoric site with milling features and rock rings, and projectile points. Carbon dating suggests that this site is dated between AD 390 and AD 435.

- CA-INY-5350H is a dump site associated with the mining operations at Cartago and more recently the residents of Cartago. The site is about 680 feet by 260 feet and contains distinct clusters of refuse from different time periods. Features include food storage containers from the early 1900s and tableware dating from the 1890s to the 1950s.

The 2010 Historic Properties Survey Report (Supplemental) discussed a sixth alternative (Alternative 4) that was added to the project description. This report identified 100 archaeological sites, some of which had been previously discussed in the 2004 Historic Properties Survey Report. The State Historic Preservation Officer concurred that one site was previously determined eligible (CA-INY-1317/H), six additional sites would be considered eligible, and that consultation would continue on the 24 remaining sites until a build alternative was selected and further testing was completed. The remaining six sites considered eligible for the purposes of this project are described below:

- CA-INY-7741H (PLI-29) is a historic era site associated with the construction of the Los Angeles Aqueduct or Southern Pacific Railroad and consists of a can and refuse dump; a 3-foot-deep pit; a dump of slag fragments; a three-sided cellar depression; and another slag dump. Artifacts dating back to the early 1900s include large cans, many condensed milk cans, and simple domestic wares such as crockery, enamel ware, and kerosene lamps.

- CA-INY-7742H (PLI-30) is a historic era site consisting of a debris scatter with two features: a can concentration and a deposit of slag. The slag deposit contains fire bricks and suggests a blacksmithing area. This site likely represents a construction camp site for either the Los Angeles Aqueduct or Southern Pacific Mojave-Owenyo Branch Railroad. This site is no longer within the project footprint.

- CA-INY-7743H (PLI-31) is a historic era site consisting of an extensive trash scatter. Artifacts include cans of various sizes, bailing wire, a gray enamelware bowl, a barrel hoop and remnant, a Dupont blasting powder lid, and a piece of amethyst glass from a bottle or jar. This site appears to be the location of refuse associated with a work camp, either from the Los Angeles Aqueduct or Southern Pacific Mojave-Owenyo Branch Railroad.

- CA-INY-7748 (PLI-36) is a prehistoric site consisting of a flaked stone scatter, flaked and ground stone tools, and nine other features. Artifacts include projectile points, bifaces, flaked stone, and a portable milling slab.

- CA-INY-7772/H (PLI-61) is a prehistoric collection of boulders that appear to be a feature in plain view.

- CA-INY-7785 (PLI-74) is a Native American ethnographic location. Potential associated features are indicated by rough alignments on terraced flats and a cluster of boulders.

In 2011, Caltrans proposed a new build alternative that combined segments of Alternative 4 and Alternative 3. This alternative is now referred to as the Caltrans Preferred Alternative. The addition of a new alternative resulted in the revision of the Area of Potential Effects, which in turn necessitated additional work to identify historic properties. The result of that work is detailed in the *Archaeological Survey*

Report for the Olancha/Cartago Four-Lane Project, Alternative 4/3 in Owens Valley, Inyo County, California by Shapiro et al. in 2013. The inventory identified 94 archaeological sites in the Area of Potential Effect, 78 of which had been identified in previous studies and 16 were newly discovered. Of the 94 archaeological sites, 44 were previously evaluated, six had eligibility recommendations and 39 sites were unevaluated. The remaining five sites had previous eligibility determinations; however, determinations were component specific or pertained to only a portion of the site. Of the previously evaluated sites, the State Historic Preservation Officer concurred with eight previously determined eligible archaeological sites (CA-INY-43, 1317/H, 5350/H, 5967, 6021, 6263, 7741H, 7743/H).

In 2014, Caltrans completed the *Finding of Adverse Effect for the Olancha/Cartago Four-Lane Project, Inyo Country, California* which acknowledged that there would be an adverse effect to historic properties. The State Historic Preservation Officer concurred with the Adverse Effect finding and with the eligibility of the eight sites. A project-specific Programmatic Agreement was developed to address the resolution of the adverse effect.

In November 2014, Far Western Anthropological Research Group completed a study to compare the potential impacts to known cultural resources for each of the six alternatives. The study was done to provide additional information for the project's Section 4(f) Evaluation. The study included a GIS-based analysis of each alternative and cultural resources. To resolve issues resulting from many years of complicated and contradictory cultural resources documentation, all data was examined carefully for duplications and other conflicts. It was determined that a total of 116 resources, including 21 built environment resources, remained within the current study area that includes all six alternatives. Cultural resources that were removed or combined into other sites include: overlapping or duplicate records, non-cultural and modern resources, isolated artifacts, and those which could not be relocated during recent surveys. The results of this study can be found below in the Environmental Consequences section and in the 4(f) evaluation (see Appendix B).

Environmental Consequences

All six build alternatives have the potential to adversely affect historic properties. Table 2-18 shows the properties that have been formally evaluated for eligibility into the National Register of Historic Places and properties that have been considered eligible for purposes of this project. The sites reflected in Table 2-18 have also received the State Historic Preservation Officer concurrence.

Table 2-18 Eligible Affected Sites

Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	Caltrans Preferred Alternative
CA-INY-1317/H CA-INY-1991/H CA-INY-5350H CA-INY-5967 CA-INY-5984 CA-INY-6021 CA-INY-6263	CA-INY-43 CA-INY-1317/H CA-INY-1991/H CA-INY-5350H CA-INY-5967 CA-INY-5984 CA-INY-6021 CA-INY-6263	CA-INY-43 CA-INY-1317/H CA-INY-5350H Olancha Schoolhouse	CA-INY-43 CA-INY-1317/H CA-INY-1991/H CA-INY-5350H CA-INY-5967 CA-INY-5984 CA-INY-6021 CA-INY-6263	CA-INY-1317/H CA-INY-5350H CA-INY-7741H CA-INY-7748 CA-INY-7772/H CA-INY-7785	CA-INY-43 CA-INY-1317/H CA-INY-1991/H CA-INY-5984 CA-INY-7741H CA-INY-7743H

Based on the 2014 analysis completed by Far Western Anthropological Research Group for the Section 4(f) Evaluation, the following results can be used compare potential site impacts for each project alternative:

- Alternative 1 has the potential to adversely affect 49 sites, seven of which have been determined eligible for the National Register of Historic Places.
- Alternative 2 has the potential to adversely affect 43 sites, eight of which have been determined eligible for the National Register of Historic Places.
- Alternative 2A has the potential to adversely affect 43 sites, four of which have been determined eligible for the National Register of Historic Places.
- Alternative 3 has the potential to adversely affect 47 sites, eight of which have been determined eligible for the National Register of Historic Places.
- Alternative 4 has the potential to adversely affect 50 sites, six of which have been determined eligible for the National Register of Historic Places.
- The Caltrans Preferred Alternative has the potential to adversely affect 48 sites, six of which have been determined eligible for the National Register of Historic Places.

The potential for adverse effects to historic properties is assessed in accordance with the definition for the criteria of adverse effect as outlined in 36 Code of Federal Regulations 800.5(a)(1): An adverse effect is found when a project may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Regardless of which alternative is selected, the project will be unable to avoid adverse effects to historic properties. Therefore, the Federal Highway

Administration and Caltrans have determined that the project will have an adverse effect on historic properties.

The nature of adverse effects would include the physical destruction of or damage to all or parts of properties. The effects will be the direct result of construction activity ranging from surface scraping/preparation throughout the Area of Potential Effects to deep cuts that have the potential to completely eliminate a property. Where the expressway will be built above grade, properties may be subject to burial under fill. However, even in these situations, extensive surface scraping and ground preparation is expected, so properties in the footprint of the project would potentially have at least some of their data destroyed. Therefore, a Finding of Adverse Effects was completed for the project in March 2014 (see Appendix L).

The Federal Highway Administration and Caltrans have consulted with the State Historic Preservation Officer on the Finding of Adverse Effects. In a letter dated May 19, 2014, the State Historic Preservation Officer concurred that a Finding of Adverse Effect was appropriate for the project and agreed that Caltrans should proceed with the development of a Historic Properties Treatment Plan. This letter can be found in Appendix M.

The Federal Highway Administration is responsible for complying with Section 4(f) of the 1966 U.S. Department of Transportation Act, which has different requirements than Section 106 of the National Historic Preservation Act but is informed by the Section 106 process. Section 4(f) applies to archeological sites that are on or eligible for the National Register and that warrant preservation in place, including those sites discovered during construction. However, Section 4(f) does not apply if the Federal Highway Administration determines (after consultation with the respective State Historic Preservation Officer, federally recognized Indian tribes, and the Advisory Council on Historic Preservation) that the archeological resource is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place. The State Historic Preservation Officer and the Advisory Council on Historic Preservation must agree to this determination per §774.13(b)(2) of the regulations implementing Section 4(f).

Additionally, Caltrans will review site boundaries for potential overlap with one another. The scope of work that is required is outlined in the Historic Properties Treatment Plan, which is currently under development as a component of the Programmatic Agreement (see Appendix K) among the Federal Highway Administration, the Bureau of Land Management, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation executed in July 2014.

Due to the fact that Caltrans has committed to reevaluate all archeological resources as part of the Historic Properties Treatment Plan, eligibility determinations for the National Register of Historic Places were not considered in this project's Section 4(f) Evaluation (see Appendix B). Instead, all known archeological sites have been treated as potential Section 4(f) resources in the Section 4(f) Evaluation and will be evaluated

regardless of their National Register of Historic Places eligibility. Instead, sites are weighed based upon components which make up the site. For this reason, the discussion of Section 106 resources contained in this draft Environmental Document is somewhat different from the evaluation of Section 4(f) resources contained in Appendix B.

For each build alternative, the cultural resource area of potential effect extended beyond the proposed right-of-way. Utilities in conflict with an alternative would be relocated outside of the new right-of-way. The details of this have not yet been decided upon, and involve coordination with private utility companies. If utilities can be relocated within the study area, mitigation for impacts to cultural resources would be added to the project mitigation. If utilities cannot be relocated within the study area, additional studies to determine impact and required mitigation would be needed.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans' design staff continue to work diligently with cultural resources staff, agencies, the Owens Valley tribal community, and any other stakeholders to ensure every effort has been made to avoid known sites. All of the proposed project's build alternatives would also incorporate the following measures to minimize harm to cultural resources:

- Cultural resources that can be avoided during construction will be designated as environmentally sensitive areas. An Environmentally Sensitive Area Action Plan will be implemented to protect eligible sites from construction impacts associated with this project.

- A project-specific Programmatic Agreement among the Federal Highway Administration, the Bureau of Land Management, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation was signed in July 2014. The project-specific Programmatic Agreement stipulates that Caltrans, on behalf of the Federal Highway Administration, will develop and implement a Historic Properties Treatment Plan that will complete the identification effort in the Area of Potential Effects, evaluate the potential properties for the National Register of Historic Places, and provide a resolution of adverse effects to historic properties.

- Specific aspects addressed will include, but will not be limited to (see Appendix K for a complete copy of the Programmatic Agreement), the following:

    - Frequent consultation with Tribes and other consulting parties;
    - Implementation of a tribal monitoring plan;
    - Methods to eliminate to the extent possible the overlap of site boundaries;
    - Implementation of a geomorphologic study to identify sensitivity for buried resources;

- Consultation with the State Historic Preservation Officer concerning the National Register of Historic Places eligibility of potential properties;
- Methods to identify and protect properties that can reasonably be preserved in conjunction with development of project design details;
- A research design or plan for the mitigation, analysis and sharing of study results for properties which cannot be avoided, including integration of those results into a synthesis that can inform ongoing management of cultural resources in the project area and surrounding region to address cumulative and indirect effects and public outreach efforts.

- If additional cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission, who would then notify the Most Likely Descendent. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable. Federal agencies, such as the U.S. Bureau of Land Management, have additional, specific responsibilities under 43 Code of Federal Regulations 10 that must be met in the event human remains are discovered on land under their jurisdiction.

2.2 Physical Environment

2.2.1 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[1] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

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

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

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

- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).

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

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

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

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with United States Environmental Protection Agency's (U.S. EPA) Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations [CFR] 40 Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[2] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to

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

waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act (California Water Code)

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

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

State Water Resources Control Board and Regional Water Quality Control Boards

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

National Pollutant Discharge Elimination System Program

Municipal Separate Storm Sewer Systems (MS4)

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

The Department's MS4 Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012 and became effective on July 1, 2013. The permit has three basic requirements:

- The Department must comply with the requirements of the Construction General Permit (see below);
- The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
- The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet water quality standards.

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

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the Construction General Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

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

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

Affected Environment

A Water Quality Report was completed in August 2008 and an addendum was completed March 2010.

The project is located in the Lower Owens Hydrologic area (Hydrologic Unit #603.30). Four named streams run within the project area, and a number of other unnamed streams cross the project area. The named streams include Braley Creek, Cartago Creek, Olancha Creek, and Summit Creek. The streams flow primarily eastward toward the Owens dry lakebed. The Los Angeles Aqueduct runs along the western edge of the project. Springs and seeps can also be found throughout the project area.

Several groundwater wells are located within the project area and provide water to the Los Angeles Aqueduct and a water bottling plant in Olancha. The groundwater has been determined to be high quality and has a "Municipal" use designation by the Lahontan Regional Water Quality Control Board.

Environmental Consequences

Temporary impacts to water quality may occur during construction of the project due to erosion and sediment. There will be no long-term impacts to stormwater, surface waters or groundwater as a result of the project.

The project will build new concrete bridges across the Los Angeles Aqueduct and install concrete box culverts and smaller pipe culverts throughout the project limits to promote drainage.

There is at least one well that will be affected by the Caltrans Preferred Alternative. It is across from the Cabin Bar Ranch in the vicinity of the connector road. The well will need to be relocated along with some of the associated underground water line. Caltrans will consult with Crystal Geyser during design to determine where the well and water line should be relocated to. Other wells found during construction will be abandoned in accordance with Inyo County standards and permits. Well abandonment for a small domestic well will cost approximately $3,000, which will be added to the project costs.

The short-term (temporary) impacts will be mitigated by best management practices. The project will not have any adverse effect on surface or groundwater quality.

Avoidance, Minimization, and/or Mitigation Measures

By incorporating proper and accepted engineering practices and best management practices, the project will not produce substantial or lasting impacts to water quality during its construction or its operation. Most construction activity is short term and mitigated by construction timing, sequencing, water quality protection, revegetation, and erosion and sediment control practices.

The following avoidance and minimization measures will be employed:

- A Stormwater Pollution Prevention Plan will be prepared by the contractor and implemented during construction to the satisfaction of the resident engineer. This plan will identify the sources of sediment and other pollutants that affect the quality of storm water discharges. The plan will also describe and ensure the implementation of best management practices to reduce or eliminate sediment and other pollutants in storm water as well as in non-storm water discharges.

- Best Management Practices protecting water quality will be implemented and will include:

    - Installation of measures to control temporary erosion;

    - Installation of measures to prevent debris from entering surface waters;

    - Measures to be implemented in the case of an accidental spill of hazardous materials. At a minimum, a spill kit shall be kept on-site and an Emergency Response Plan shall be developed and implemented if a spill occurs.

- Caltrans and the contractor for the project will address all potential water quality impacts that may occur during construction.

- A dredge and fill permit will be required as outlined in Section 404 of the Clean Water Act. Caltrans will comply with all permit requirements.

- If used, the proposed material site would be restored by contour grading, replacing topsoil and revegetating the site with native plant or seeds. The material area would then be closed after the project is complete.

2.2.2 Geology, Soils, Seismicity and Topography

Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Caltrans' Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. The current policy is to use the anticipated Maximum Credible Earthquake from young faults in and near California. The Maximum Credible Earthquake is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

Affected Environment

A Preliminary Geotechnical Report evaluation was completed in December 1999. An addendum was completed in May 2010. An updated version will be completed during the project's design phase.

This project is located on the valley floor of the Owens Valley with the Sierra Nevada to the west and the Inyo and Coso mountain ranges to the east. The facilities associated with this project will be built 3,600 to 4,000 feet above sea level on the alluvial fans that flow out into the Owens Valley. The alluvium is about 45 feet thick, and the colluvium (rock-like material) is over 148 feet thick and is composed of sand, silt, gravel, cobbles, and boulders. In areas close to Owens Lake, the alluvial soils are finer with less cobbles and boulders.

There are some outcroppings of bare rock at the higher elevations, but none are natural landmarks or unique geologic features. Seismic activity is known to be present within the region resulting from the Long Valley Caldera to the north and the Owens Valley Fault and Independence Fault, which are 0.7 mile and 3.1 miles, respectively, west of the project area. The Owens Valley Fault is considered active; the Independence Fault is not considered active. There are active mining operations in the area.

Environmental Consequences

A more detailed subsurface investigation will be necessary to reduce settlement of embankment and to determine the usability of alluvial soils in the project's construction. This project is not expected to adversely affect sand and gravel operations in the area or expose the public to geologic hazards. Erosion associated with the project is not expected to occur as it will be managed in the design and construction of the project (see Section 2.2.1 Water Quality).

Avoidance, Minimization, and/or Mitigation Measures

Caltrans will design and construct the structures in this project to seismic standards. Soil types and topography will be considered in the design and construction of the project.

2.2.3 Paleontology

Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

- 16 United States Code (USC) 431-433 (the "Antiquities Act") prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land. Fossils are

considered "objects of antiquity" by the U.S. Bureau of Land Management, the National Park Service, the Forest Service, and other federal agencies.

- 16 United States Code (USC) 470aaa (the Paleontological Resources Preservation Act) prohibits the excavation, removal, or damage of any paleontological resources located on federal land under the jurisdiction of the Secretaries of the Interior or Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.

- 23 United States Code (USC) 1.9(a) requires that the use of federal-aid funds must be in conformity with federal and state law.

- 23 United States Code (USC) 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA), the California Administrative Code, Title 14, Section 4306 et seq., and Public Resources Code Section 5097.5.

Affected Environment

Caltrans prepared a Paleontological Identification Report (March 2010) and a Paleontological Evaluation Report (April 2014) for this project.

Regional Geology

The Olancha Cartago Four-Lane project is located in the Basin and Range geomorphic province. Pre-Cenozoic granitic and metamorphic rocks and Mesozoic granitic rocks of the Sierra Nevada lie west of the project and Quaternary lake deposits lie just to the east.

Owens Valley is a long narrow valley within the western part of the Great Basin section of the Basin and Range province. The Great Basin section consists of linear, roughly parallel north-south mountain ranges separated by valleys, most of which are closed drainage basins. The Owens Valley basin extends from Haiwee Reservoir in the south, northward to include Round, Chalfant, Hammil, and Benton Valleys.

The Sierra Nevada to the west consists primarily of uplifted granitic and metamorphic rocks. The Inyo Mountains to the east consist of Paleozoic sedimentary rocks intruded by granitic plutons. The floor of the Owens Valley is underlain by thick sequences of unconsolidated to moderately consolidated alluvial fan, transition-zone, glacial and talus, and fluvial and lacustrine deposits intercalated with Quaternary volcanic rocks.

Local Geology

The Olancha/Cartago Four-Lane will be constructed in an area mapped as Quaternary alluvium and older alluvial fan deposits. The older alluvial fans are dissected and entrenched by modern stream channels and overlain in part by younger alluvial fans. The Quaternary sedimentary deposits that fill the valley and underlie the project area are predominantly from the Sierra Nevada, consisting primarily of heterogeneous mixture of poorly to moderately consolidated coarse-grained sands and lesser amounts of silt and clay. The western edge of the valley transitions from alluvial fan to debris flow deposits that coarsen upward to include cobble and boulder sized conglomerate in sandy to silty matrix. The sensitivity of these deposits have been assigned a low paleontological potential to yield fossils.

However, during field surveys for the Paleontological Evaluation Report, fine grained lacustrine deposits were found within the northern portion of the project study area north of Cartago and adjacent to existing U.S. Highway 395. Examination of the deposits identified paleontological resources including fresh water snail (*Planorbidae*), fish (*Osteichthyes*), odd-toed ungulate (*Perissocactyla*, probably horse), rodent (*Rodentia*), and small to medium sized mammals (*Mammalia*). The lacustrine deposits are identified as having a high potential to yield substantial fossil resources.

Environmental Consequences

Paleontological resources have been known to exist in alluvial fan environments. In general, the probability of encountering fossils is ranked as fairly low for shallow excavations, becoming higher with deeper excavations. Fossil specimens have been recovered in finer grain sediments in the northern portion of the project limits, and excavations in these sediments may affect paleontological resources of scientific interest.

Construction of Alternatives 1, 2, 2A, or 3 would generate between 235,000 and 353,000 cubic yards of earthen material. Building Alternative 4 would require cuts as deep as 30 feet in some areas and would generate 618,000 cubic yards of earthen material. The Caltrans Preferred Alternative will generate 1.2 million cubic yards of earthen material and have cuts as deep as 75 feet. Caltrans intends to construct a balanced project, i.e. the amount of cut material will equal the amount of fill material needed. Excess material, if any, will be added to fill slopes. The proposed material area may be mined to a depth of approximately 25 feet. The material area and construction crossings and bridges are most likely to affect paleontological resources.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans will implement a well-designed paleontological resource mitigation plan following Caltrans guidelines to salvage fossil specimens during the construction excavation phase for this project. Implementing a well-designed paleontological resource mitigation plan will minimize any adverse impacts to paleontological resources.

Caltrans guidelines require monitoring by a qualified Principal Paleontologist. For the Olancha Cartago Four-Lane project, monitoring by a qualified Principal will be required in specified areas north of Cartago.

Paleontological mitigation for the project will include:

- A standard special provision for paleontology mitigation will be included in the construction contract special provisions section to advise the construction contractor of the requirement to cooperate with the paleontological salvage.

- A qualified Principal Paleontologist or qualified Caltrans Paleontology Coordinator will prepare a detailed Paleontological Mitigation Plan prior to the start of construction. All geologic work will be performed under the supervision of a California Professional Geologist.

- The Principal Paleontologist or Caltrans Paleontology Coordinator will be present at pre-grading meetings to consult with grading and excavation contractors.

- Near the beginning of excavations, the Principal Paleontologist or Caltrans Paleontology Coordinator will conduct an employee environmental awareness training session for all persons involved in earth moving for the project.

- A qualified paleontology monitor under the direction of the Principal Paleontologist or Caltrans Paleontology Coordinator will be on site to inspect cuts for fossils during original grading involving sensitive geologic formations.

- When fossils are discovered, the paleontology monitor or Caltrans Paleontology Coordinator will recover them and contact a Principal Paleontologist for assistance. Construction work in these areas will be halted or diverted to allow recovery of fossil remains in a timely manner.

- Bulk sediment samples will be recovered from fossiliferous horizons and processed for microvertebrate remains as determined necessary by the principal paleontologist.

- Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, repaired, sorted, and cataloged.

- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will then be deposited in a scientific institution with paleontological collections.

- A final report will be completed that outlines the results of the mitigation program and will be signed by the Caltrans Paleontology Coordinator or Principal Paleontologist and Professional Geologist.

2.2.4 Hazardous Waste and Materials

Regulatory Setting

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

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

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

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

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

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

Affected Environment

Caltrans prepared an Initial Site Assessment for this project in September 2003. Caltrans updated the Initial Site Assessment by preparing addenda in January 2007, June 2009, March 2010, and December 22, 2014.

Caltrans staff surveyed 266 parcels to identify hazardous waste issues. The majority of the parcels are vacant lands owned by the U.S. Bureau of Land Management, Los Angeles Water and Power, State of California, and private owners. Caltrans identified eight parcels that have the potential to contain hazardous materials/waste.

Environmental Consequences

The following hazardous waste site would affect Alternatives 1, 2, and 3:

- APN: 29-231-04 was formerly a gasoline service station with at least four underground gasoline storage tanks. According to Inyo County Environmental Health Department, three of the tanks were removed. The remaining tank was used as a waste oil tank and poses a potential hazardous waste impact.

The following hazardous waste sites would affect Alternatives 1, 2, and 2A:

- APN: 33-080-14 is a former gasoline station and, according to the Inyo County Environmental Health Department, contains leaking gasoline storage tanks.

- APN: 33-080-27C is a former gasoline station. According to the Inyo County Environmental Health Department, this site has contamination associated with leaking gasoline storage tanks.

- APN: 33-110-40 is a vacant parcel that is being used as a dump for auto bodies and wrecked cars. There is a potential for soil contamination associated with this use.

- APN: 33-110-41 has an abandoned market that may have offered gasoline in the past. There is a potential that hazardous waste associated with underground gasoline storage tanks exists.

- APN 33-460-19 is a former store/café and old service station. There is a slight potential that hazardous waste associated with underground gasoline storage tanks exists.

- APN 33-490-01 is a former service station. There is a potential that hazardous waste associated with underground gasoline storage tanks exists.

The following hazardous waste concern would affect Alternatives 3, 4, and the Caltrans Preferred Alternative:

- APN: 33-490-02A is vacant land, part of which had previously been used as a landing strip called the Adamson Landing Field. Records suggest that there were barrels of sodium sulfide powder buried onsite near the north end of the landing strip, to the east of the aqueduct.

The Caltrans Preferred Alternative will affect APN 33-490-02A to the west of the aqueduct, in an area that was not used by the Adamson Landing Field. Because the exact location of the barrels is unknown, there is a potential for encountering hazardous materials during construction. There is one building in Cartago (APN 29-200-10) that will be demolished and may contain asbestos and lead-based paint.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans will coordinate any necessary remediation with the appropriate local and state agencies. Standard Special Provisions would be developed for this project to ensure, in the event hazardous waste/substances are discovered during construction, that handling, removal, and disposal activities would be addressed appropriately by the construction contractor.

2.2.5 Air Quality

Regulatory Setting

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

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act. In addition to

this environmental analysis, a parallel "Conformity" requirement under the Federal Clean Air Act also applies.

Conformity

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

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

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the National Ambient Air Quality Standards for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California) sulfur dioxide (SO_2). California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis.

Regional conformity is based on emission analysis of Regional Transportation Plans and Federal Transportation Improvement Programs that include all transportation projects planned for a region over a period of at least 20 years for the Regional Transportation Plans and 4 years for the Transportation Improvement Programs. Regional Transportation Plans and Federal Transportation Improvement Programs conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Clean Air Act and the State Implementation Plan are met. If the conformity analysis is successful, the Metropolitan Planning Organization, Federal Highway Administration, and Federal Transit Administration, make determinations that the Regional Transportation Plans and Federal Transportation Improvement Programs are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the Regional Transportation Plans and/or Federal Transportation Improvement Programs must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the Regional Transportation Plans and Federal

Transportation Improvement Programs, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a "hot-spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide (CO) and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is "nonattainment" if one or more of the monitoring stations in the region measures a violation of the relevant standard and the U.S. Environmental Protection Agency officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by U.S. EPA and are then called "maintenance" areas.

"Hot-spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for the National Environmental Policy Act purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot-spot analysis. In general, projects must not cause the hot-spot-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. 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

Caltrans prepared an Air Quality Report for this project in February 2010 and addenda in May 2010 and April 2015. Caltrans also conducted a regional analysis in 2014. This additional work was completed after Caltrans headquarters staff reviewed a draft of the air study and determined that the 2010 conformity steps were not done completely (both project level and regional conformity were required). In urban areas, a Metropolitan Planning Organization or a Regional Transportation District conducts the regional analysis. Because this project is located in a rural area, there is no Metropolitan Planning Organization or a Regional Transportation District to conduct the analysis. Therefore, the 2010 conformity process did not receive concurrences from all the planning partners for the regional portion of the study. For this uncommon situation, Caltrans was required to initiate a regional conformity consultation with local Interagency Consultation Partners and to obtain approval from the Environmental Protection Agency that the project would not affect regional or local conformity.

The project is located on the floor of the Owens Valley with the Sierra Nevada to the west and the Inyo and Coso mountain ranges to the east. This area lies in the rain shadow of the Sierra Nevada where the climate has extreme daily temperature fluctuations and strong seasonal winds. In late winter and early spring, the wind is a prominent feature, with dry winds blowing in the afternoon and evening. Winds in excess of 25 miles per hour, with gusts of 75 miles per hour or more are not uncommon. The average annual precipitation is 4 inches.

The Great Basin Unified Air Pollution Control District administers air quality regulations developed at the federal, state, and local levels. Ozone and particulate matter are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide are considered to be local pollutants because they tend to accumulate in the air locally (see Table 2-20). Particulate matter is also considered as a local pollutant. Particulate matter is of particular concern within the area of the proposed project site.

Environmental Consequences

Regional Air Quality Conformity

The project is not exempt from conformity under 40 Code of Federal Regulations 93.126. The project is included in the Inyo County Regional Transportation Plan and Transportation Improvement Plan (Adopted on April 22, 2009), and it conforms to the Great Basin Unified Air Pollution Control District State Implementation Plan approved in 1998.

Inyo County is nonattainment for the state PM_{10} standard. The county is an attainment area for the federal PM_{10} standard except for the Owens Valley. Owens Valley is a nonattainment area because of windblown dust from exposed areas of Owens dry lake. The Great Basin Unified Air Pollution Control District has prepared a state implementation plan for PM_{10} that includes mitigation measures designed to minimize windblown dust from Owens dry lake. The plan does not include any measures to reduce PM_{10} from paved or unpaved roads because roads are not considered a substantial contributor to Inyo County's existing PM_{10} problem.

Transportation conformity requirements, contained in the Great Basin Unified Air Pollution Control District Regulation XII, require that federal actions and federally funded projects conform to State Implementation Plan rules and that they do not interfere with efforts to attain federal air quality standards. The emissions inventory shows very low PM_{10} emissions from mobile sources and transportation-related activities in the planning area. For transportation conformity purposes, PM_{10} emissions from construction-related activities will be quantified as required by Great Basin Unified Air Pollution Control District Rule 1231(e) for any new highway construction projects in the Owens Valley Planning Area and will be subject to District Rules 400, 401, and 402 for controlling fugitive dust.

A regional conformity analysis is typically conducted for areas that do not conform to the federal priority pollutant ambient air standards. In urban areas, a Metropolitan Planning Organization or a Regional Transportation District conducts the regional analysis. Because this project is located in a rural area, there is no Metropolitan Planning Organization or a Regional Transportation District to conduct the analysis. Caltrans, as the project sponsor, conducted a regional analysis in February 2014.

The Regional Conformity Analysis and resubmittal of project-level PM_{10}-Hot-Spot was sent via email to the Owens Valley air basin Conformity Partners. A partial

regional analysis and a PM_{10}-Hot-Spot analysis had occurred in March 2010. The U.S. Environmental Protection Agency concurred at that time. Concurrence was received for the PM_{10} Hot-Spot Analysis from the Federal Highway Administration on February 19, 2014 (see Appendix N).

The Great Basin Unified Air Pollution Control District responded via email on February 26, 2014, stating "The commitment discussed in Section 2 of the report and the mitigation measures to control dust during the construction phase of the Olancha/Cartago Four-Lane project are appropriate and consistent with the transportation conformity requirements for the Owens Valley PM_{10} nonattainment area" (see Appendix N). The Regional Conformity Analysis and the Project-Level PM_{10}-Hot-Spot concurrence process are informally conducted via email and telephone if necessary. Therefore, there is no "official" concurrence or regional conformity document. This discussion, the copy of the February 2014 Regional Analysis and resubmittal of the PM_{10} Hot-Spot Analysis, and the responses from U.S. Environmental Protection Agency, Federal Highway Administration and the Great Basin Unified Air Pollution Control District are considered to satisfy the regional and project-level conformity requirements.

Project-level Conformity

For federal standards, the project area is classified as attainment for ozone and nonattainment for particulate matter (PM_{10}). For state standards, the project area is classified as nonattainment for ozone and nonattainment for particulate matter (PM_{10}) (see Table 2-19).

Caltrans consulted with the Environmental Protection Agency and the Federal Highway Administration in February 2014. Both agencies agreed that this project was not a project of air quality concern. The Great Basin Unified Air Pollution Control District asked for construction-related PM_{10} modeling to be conducted, which was completed in February 2014.

Carbon Monoxide Analysis

This project does not increase the number of vehicles operating in cold-start mode by 2 percent or more, does not increase traffic volumes in excess of 5 percent, and would not worsen traffic flow. Therefore, no substantial carbon monoxide impacts would occur as a result of the proposed project.

Particulate Matter Hot-Spot Analysis

Particles less than 10 micrometers (PM_{10}) pose a potential public health concern because these small particles can be inhaled and accumulated in the respiratory system. Particles less than 2.5 micrometers ($PM_{2.5}$) are thought to be the greatest risk because of their small size.

The project is located in an area classified as "nonattainment" with respect to the federal standards for particulate matter. According to the California Air Resources Board, the highest PM_{10} concentration measured near the project area in 2008 was

857 micrograms per cubic meter. Most of the PM_{10} problems in this area are associated with windblown dust from the Owens dry lakebed.

During construction, the project will generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants will be windblown dust generated during excavation, grading, and various other activities. The impacts of these activities will vary each day as construction progresses. Occasional dust and odors at some residences close to the right-of-way could cause occasional annoyance and complaints.

Mobile Source Air Toxics

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the United States Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. In addition, the EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999). These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics (MSAT), the list is subject to change and may be adjusted in consideration of future EPA rules. The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines.

Modeling

According to the EPA, Motor Vehicle Emission Simulator (MOVES) model is based on a vast amount of in-use vehicle data collected and analyzed. Analysis of this data enhanced EPA's understanding of how mobile sources contribute to emissions inventories and the relative effectiveness of various control strategies. In California, however, the Emission Factor (EMFAC) model is similar and is approved for use by the EPA and is typically, but not always, used for Caltrans' analysis of project impacts.

Based on an FHWA analysis using EPA's MOVES2010b model (as shown in Figure 2.3) even if vehicle-miles traveled (VMT) increases by 102 percent as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period. This is due to a combination of fuel efficient cars, more stringent controls on the emissions systems in vehicles, and fuel formulations that continue to change to be less polluting.

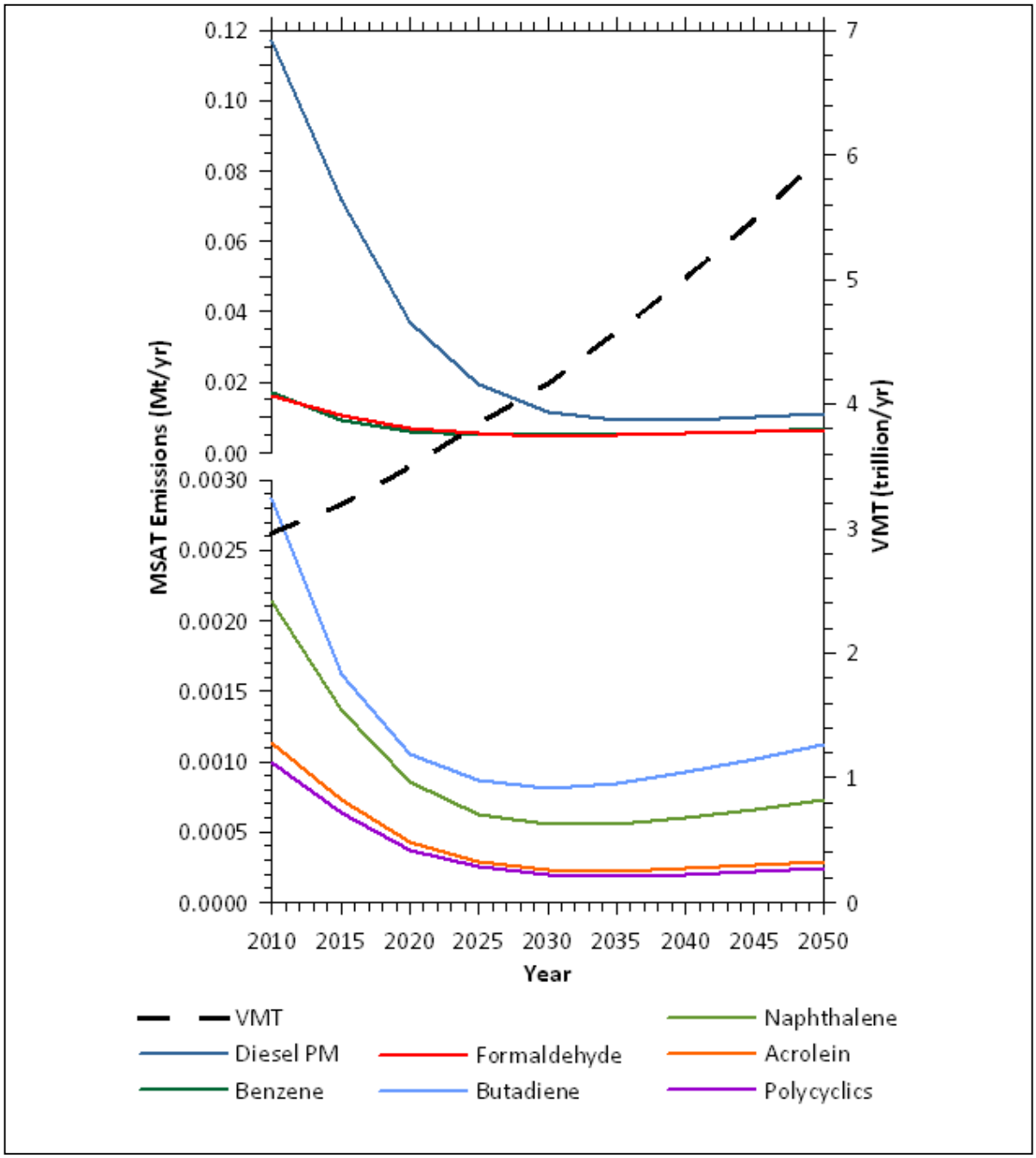


Figure 2.3 Motor Vehicle Emissions Simulator (MOVES) Model

It should be noted that trends for specific locations may be different, depending on locally derived information representing vehicle-miles traveled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors (EPA MOVES2010b model runs conducted during May - June 2012 by FHWA).

The FHWA developed a tiered approach with three categories for analyzing MSAT in NEPA documents, depending on specific project circumstances:

1. No analysis for projects with no potential for meaningful MSAT effects;

2. Qualitative analysis for projects with low potential MSAT effects; or

3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The Olancha/Cartago Four-Lane project best fits into Category 2, a project with low potential MSAT effects. The types of projects included in this category are those that serve to improve operations of highway, transit, or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions. This category covers a broad range of projects. Examples of these types of projects are minor widening projects; new interchanges, replacing a signalized intersection on a surface street; or projects where design year traffic is projected to be less than 140,000 to 150,000 annual average daily traffic (AADT). The horizon year AADT for this project is less than 6,000 (see Table 1-1), which is well below the 140,000 AADT.

For each alternative presented in this environmental document, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for each of the build alternatives is the same as the No Build Alternative, because the additional capacity would improve Level of Service and improve safety. This increase in VMT would lead to higher MSAT emissions for the Caltrans Preferred Alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds. Because the estimated VMT under each of the alternatives are nearly the same, varying by less than 5 percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Discussion

The Olancha/Cartago Four-Lane project is expected to result in a minimal increase in travel speeds. The project is not expected to attract more local traffic, as this is a rural route. There is no difference between the AADT in build alternatives and the No Build Alternative. MSAT emissions are proportional to vehicle miles traveled (VMT). VMT is determined by multiplying the length of a project times the AADT. Current and future improvements in gasoline and diesel engines are expected to result in lower MSAT emissions than today. Because of the minimal to no difference between the build and no build traffic, this project is expected to have minimal to no increase in MSAT by the project horizon year.

Improvements in fuel formulations and in gas and diesel engine emission controls are expected to result in an overall decline for each MSAT over the next 20-30 years. This trend is shown by comparing the existing year (2012) and open to traffic year (2019) or the horizon year (2029), see Table 2-19. Both the No Build Alternative and Alternative 1 have lower MSAT emissions in 2019 and 2029 than the other build alternatives. This is due to the lower speed of 55 miles per hour (MPH) for the two alternatives. The lowest MSAT emissions occur at about 45 MPH. The Caltrans Preferred Alternative has slightly lower emissions than Alternative 4, due to Alternative 4 being about 1/2 mile longer than the Caltrans Preferred Alternative.

Table 2-19 Daily MSAT Emissions in grams/day

	Acrolein	Benzene	Butadiene	Diesel PM	Formaldehyde	POM	Napthalene
Existing 2012	424	12,482	1,953	55,242	6,445	288	567
2019 No Build	151	5,587	700	16,697	7,098	100	300
2019 Alt 1	151	5,587	700	16,697	7,098	100	300
2019 Alt 2	196	6,409	889	22,188	7,568	127	346
2019 Alt 2A	201	6,588	914	22,803	7,780	131	356
2019 Alt 3	199	6,519	904	22,568	7,698	129	352
2019 Alt 4	222	7,271	1,009	25,171	8,586	144	393
Caltrans Preferred	214	7,022	974	24,310	8,292	139	379
2029 No Build	86	3,752	429	16,697	6,077	95	237
2019 Alt 1	86	3,752	429	16,697	6,077	95	237
2019 Alt 2	118	4,327	566	22,004	6,223	121	277
2019 Alt 2A	121	4,448	582	22,620	6,398	125	286
2019 Alt 3	120	4,401	576	22,382	6,330	123	283
2019 Alt 4	134	4,908	642	24,963	7,060	138	315
Caltrans Preferred	129	4,741	620	24,109	6,819	133	304

Source: Central Region Environmental Engineering Branch CT-EMFAC version 5 runs, March 2015

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

Studies of the human health risks are inconclusive, however, and the Environmental Protection Agency has yet to establish air quality standards or guidelines for assessing the project-level effects of mobile air toxics. Such limitations make the study of mobile air toxic concentrations, exposures, and health impacts difficult and uncertain, especially on a quantitative basis.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast a 70-year lifetime of MSAT concentrations and exposure near roadways, to determine the portion of time that people are actually exposed at a specific location, and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by Health Effects Institute (HEI) (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the processed by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect

for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Table 2-20 Air Quality Standards and Status

Pollutant	Averaging Time	State Standard	State Attainment Status	Federal Standard	Federal Attainment Status	Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	1 hour 8 hours	0.09 ppm 0.070 ppm	Non-attainment Non-attainment	0.075 ppm	Attainment 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_x) 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 8 hours (Lake Tahoe)	20 ppm 9.0 ppm[c] 6 ppm	Attainment / Unclassified	35 ppm 9 ppm –	Attainment / Unclassified	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_{10})[a]	24 hours Annual Arithmetic Mean	50 µg/m^3 20 µg/m^3	Non-attainment	150 µg/m^3	Attainment / Unclassified (most of county and Coso Jct), Nonattainment (Owens Valley)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke; 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 ($PM_{2.5}$)[a]	24 hours Annual	– 12 µg/m^3	Attainment	35 µg/m^3 12 µg/m^3	Attainment	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter –	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving

Pollutant	Averaging Time	State Standard	State Attainment Status	Federal Standard	Federal Attainment Status	Health and Atmospheric Effects	Typical Sources
						considered a toxic air contaminant – is in the $PM_{2.5}$ size range. Many aerosol and solid compounds are part of $PM_{2.5}$.	other pollutants including NO_x, sulfur oxides (SO_x), ammonia, and ROG.
Nitrogen Dioxide (NO_2)	1 hour Annual	0.18 ppm 0.030 ppm	Attainment	100 ppb 0.053 ppm	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_2)	1 hour 3 hours 24 hours Annual	0.25 ppm – 0.04 ppm –	Attainment	75 ppb 0.5 ppm 0.14 ppm 0.030 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.

Sources: California Air Resources Board Ambient Air Quality Standards chart, 06/04/2013 (http://www.arb.ca.gov/aqs/aaqs2.pdf). Sonoma-Marin Area Rail Transit Draft Air Pollutant Standards and Effects table, November 2005, page 3-52. U.S. Environmental Protection Agency and California Air Resources Board air toxics websites, 05/17/2006

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

[a] Annual PM10 National Ambient Air Quality Standard revoked October 2006; was 50 $\mu g/m^3$. 24-hr. PM2.5 National Ambient Air Quality Standard tightened October 2006; was 65 $\mu g/m^3$.

[b] 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.

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

[d] The Air Resources Board 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 Air Resources Board and U.S. Environmental Protection Agency 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.

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSAT at the project level, it is possible to qualitatively assess the levels of future Mobile Source Air Toxics emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSAT, it can give a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives.

The qualitative assessment presented below is derived in part from a study conducted by the Federal Highway Administration entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at: www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm.

For each alternative in this document, the amount of MSAT emitted would be proportional to the vehicle miles traveled, assuming that other variables such as fleet mix are the same for each alternative. The vehicle miles traveled estimated for each of the build alternatives is slightly higher than that for the No-Build Alternative because the additional capacity increases the efficiency of the roadway. This increase in vehicle miles traveled would lead to higher MSAT emissions for the Caltrans Preferred Alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to the Environmental Protection Agency's MOBILE6 emissions model, emissions of all of the priority MSAT except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emission decreases would offset emission increases related to vehicle miles traveled cannot be reliably projected due to the inherent deficiencies of technical models.

Because the estimated vehicle miles traveled under each of the proposed alternatives are nearly the same, varying by less than 1 percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of the Environmental Protection Agency's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020.

Local conditions may differ from these national projections in terms of fleet mix and turnover, vehicle miles traveled growth rates, and local control measures. However, the magnitude of the reductions projected by the Environmental Protection Agency is so great (even after accounting for vehicle miles traveled growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Short-term Construction Impacts

Sources of short-term emissions from this project will include emissions generated by construction equipment, dust generated by grading and earth-moving operations, and dust generated by travel to and from the construction site.

Avoidance, Minimization, and/or Mitigation Measures

Most of the construction impacts to air quality are short term in duration and therefore will not result in adverse or long-term conditions. Implementation of the following measures will reduce any air quality impacts resulting from construction activities:

- The construction contractor will comply with Caltrans' Standard Specifications Section 7-1.02C and Section 14-9. Section 7, "Legal Relations and Responsibility," addresses the contractor's responsibility on many items of concern, such as air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 14-9, Air Quality, includes provisions to control dust.

- Water or dust palliative will be applied to the site and equipment as frequently as necessary to control fugitive dust emissions.

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

- Trucks will use stabilized construction entrances as they leave the right-of-way to control fugitive dust emissions.

- Construction equipment and vehicles will be properly tuned and maintained. Low sulfur fuel would be used in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.

- A dust control plan addressing sprinkling, temporary paving, and speed limits will be developed to minimize construction impacts to existing communities.

- Equipment and materials storage sites will be located as far away from residences as practical. Construction areas would be kept clean and orderly.

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

- To the extent feasible, all transported loads of soils will be covered and wet prior to transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to reduce PM_{10} and deposition of particulates during transportation.

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

- Mulch or plant vegetation will be installed as soon as practical after grading to reduce windblown particulates in the area.

Climate Change

Climate change is analyzed in Chapter 3. Neither the U.S. Environmental Protection Agency nor the Federal Highway Administration has promulgated explicit guidance or methods 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 aid 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 on climate change, the issue is addressed in a separate California Environmental Quality Act discussion in Chapter 3 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 traveled.

2.2.6 Noise and Vibration

Regulatory Setting

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

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project would have a noise impact. If a proposed project is determined to have a significant noise impact under the California Environmental Quality Act, then the act dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this

section will focus on the National Environmental Policy Act 23 Code of Federal Regulations (CFR) 772 noise analysis; please see Chapter 3 of this document for further information on noise analysis under California Environmental Quality Act.

National Environmental Policy Act and 23 Code of Federal Regulations 772

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

Table 2-21 Activity Categories and Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, A-weighted Noise Level, Leq(h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Caltrans Traffic Noise Analysis Manual, 1998
A-weighted decibels are adjusted to approximate the way humans perceive sound. Leq(h) is the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual time-varying levels over one hour.

Figure 2.4 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

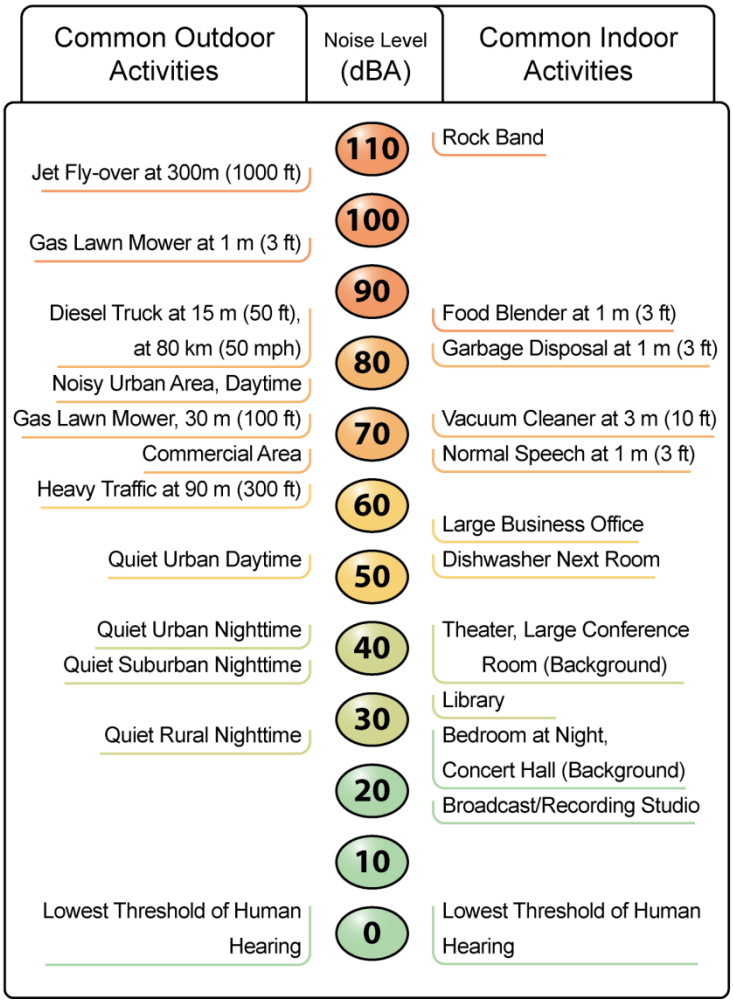


Figure 2.4 Noise Levels of Common Activities

According to the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

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

The Department's Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of

noise abatement is basically an engineering concern. A minimum 5 dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis.

Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence. Other considerations include absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978, topography, access requirements, other noise sources, and safety considerations.

Affected Environment

A Noise Study Report was completed in July 2003. Additional addenda were completed in August 2008 and August 2010. The population density in the project study area is very low, and the house types and sizes mainly consist of single-family houses and mobile homes. There are a few small local businesses along the existing U.S. Highway 395. There are no schools or parks within the project study area. Noise was evaluated at 45 representative locations selected for their proximity to the proposed alternatives and adjacent receptors. Maps of the noise sampling and receiver locations can be found in Appendix I.

Environmental Consequences under the National Environmental Policy Act

Caltrans staff conducted a noise study in July 2003 and provided an addendum to the Noise Study in August 2008. Another addendum was completed in April 2010 due to the addition of two build alternatives (Alternatives 2A and 4) and the identification of five new receptor sites. Alternatives 1, 2, 3 and the No-Build Alternative were discussed in the original 2003 Noise Study Report. The Caltrans Preferred Alternative is a combination of Alternatives 3 and 4. Because earlier studies covered both these alternatives, additional noise study was not necessary for this alternative. A field visit to the project area in 2009 revealed a total of six new receptors that were not included in the previous noise study. These have been incorporated into the 2010 addendum.

The original noise study was based on a traffic forecast that assumed trucks would constitute less than 9 percent of the total traffic mix for U.S. Highway 395. Data obtained for the 2010 revised noise study updated this figure to more than 21 percent. The higher truck proportion means a noisier roadway compared to the original noise study. For this reason, the noise levels for Alternatives 1, 2, and 3 were updated through modeling using the most recent traffic volumes. The Federal Highway Administration-approved Traffic Noise Model TNM 2.5 was used for this modeling. The results are listed in Table 2-22.

Projected traffic noise was evaluated for the year 2034. Traffic volumes counted during ambient noise monitoring were used (along with measured noise levels) to

determine the existing noise levels. The existing conditions were then compared to the modeled results to determine whether noise would increase substantially in the future due to any of the proposed project alternatives.

Alternative 4 is more than 500 feet from homes within the project area. The traffic noise model computes highway traffic noise at nearby receptors, fewer than 500 feet from the noise source. Modeling for distances greater than 500 feet will not produce accurate results, and noise impacts are normally not predicted at such distances. Therefore, no noise impacts are predicted for this alternative.

The Caltrans Preferred Alternative is a combination of Alternatives 3 and 4. The southern portion of the alignment (Alternative 4) is more than 500 feet from homes within the project area. The northern portion of the alignment (Alternative 3) goes through Cartago along the existing highway. Potential noise impacts are listed in Table 2-23. Using appropriate data from both sections of Alternative 3 and 4, noise impacts were studied for the Caltrans Preferred Alternative.

Table 2-22 Noise Receptor Locations

Receptor #	Existing Noise Level (dBA)	Predicted No-Build Noise Level for 2034 (dBA)	Predicted Build Noise Level for Alternatives 2034 (dBA)					Noise Level No-Build vs Existing	Noise Level Build vs. Existing				
			1	2	2A	3	CT Preferred		1	2	2A	3	CT Preferred
R-1	55	56	59	62	49	58	58	0	1	4	-9	3	3
R-2	53	53	55	57	51	58	58	0	2	4	-2	5	5
R-3	58	59	59	56	47	55	55	1	1	-2	-10	-3	-3
R-4	40	42	41	48	48	40	-	2	1	8	8	0	-
R-5	48	49	51	53	53	43	-	1	3	5	5	-5	-
R-6	52	53	54	59	59	41	-	1	3	8	8	-11	-
R-7	63	65	64	**68**	**68**	41	-	2	1	5	5	-22	-
R-8	52	53	54	53	53	39	-	1	2	1	1	-13	-
R-9	40	41	41	42	42	54	-	1	1	2	2	**14**	**-**
R-10	41	42	42	42	42	49	-	1	1	2	2	8	-
R-11	45	46	46	46	46	42	-	1	1	1	1	-3	-
R-12	41	42	42	42	42	57	-	1	1	1	1	**17**	**-**
R-13	63	64	64	60	60	33	-	1	1	-3	-3	-30	-
R-14	57	58	58	56	56	33	-	1	2	-1	-1	-23	-
R-15	63	65	65	61	61	31	-	2	2	-3	-3	-32	-
R-16	56	57	58	55	55	32	-	1	2	-1	-1	-24	-
R-17	61	62	61	57	47	57	57	1	0	-4	-15	-4	-4
R-18	46	47	47	51	51	37	-	1	1	5	5	-9	-
R-19	61	63	63	**67**	**67**	40	-	2	2	6	6	-21	-
R-20	40	41	41	44	44	37	-	1	1	5	5	-3	-
R-21	56	57	57	60	60	42	-	1	2	4	4	-14	-
R-22	60	61	61	63	63	41	-	1	1	3	3	-19	-
R-23	60	61	61	63	63	41	-	1	1	3	3	-18	-
R-24	53	54	55	53	53	43	-	1	2	1	1	-10	-
R-25	50	51	52	52	52	43	-	1	2	2	2	-7	-
R-26	61	62	62	59	59	39	-	1	2	-2	-2	-22	-
R-27	51	52	52	51	51	40	-	1	2	0	0	-11	-
R-28	45	46	46	46	46	42	-	1	1	1	1	-2	-
R-29	44	45	45	45	45	43	-	1	1	1	1	0	-
R-30	52	53	54	52	52	40	-	1	2	0	0	-12	-
R-31	50	51	51	50	50	40	-	1	1	0	0	-9	-
R-32	43	45	45	44	44	44	-	2	1	1	1	1	-

Table 2-22 Noise Receptor Locations (continued)

Receptor #	Existing Noise Level (dBA)	Predicted No-Build Noise Level for 2034 (dBA)	Predicted Build Noise Level for Alternatives 2034 (dBA)					Noise Level No-Build vs Existing	Noise Level Build vs. Existing				
			1	2	2A	3	Caltrans Preferred		1	2	2A	3	Caltrans Preferred
R-33	43	44	44	44	44	47	-	1	1	1	1	4	-
R-34	47	48	48	47	47	42	-	1	1	1	1	-5	-
R-35	41	42	42	42	42	48	-	1	1	2	1	7	-
R-36	40	41	41	41	41	56	-	1	1	2	2	**17**	**-**
R-37	40	41	41	41	41	58	-	1	1	2	2	**18**	**-**
R-38	53	55	55	56	56	42	-	2	2	2	2	-11	-
R-39	58	59	59	59	59	42	-	1	1	1	1	-17	-
R-40	48	49	51	52	55	53	53	1	3	4	7	5	5
R-41	47	48	49	51	55	52	52	1	2	4	9	5	5
R-42	46	46	48	49	55	51	51	0	2	3	10	5	5
R-43	61	62	62	63	63	41	-	1	1	3	3	-20	-
R-44	54	55	55	53	53	40	-	1	2	0	0	-14	-
R-45	39	41	41	41	41	62	-	1	1	2	2	**23**	**-**

*Source: 2010 Noise Study, *Receptors with no data are more than 500 feet from the alternative.*

Table 2-23 Existing/Predicted Noise Levels for Substantially Affected Receivers

Receiver	Type	NAC	Existing Noise Level (dBA)	Predicted Noise Level (dBA)	Increase over Existing	Alternative(s)
9	Residential	67	40	54	14	3
12	Residential	67	41	57	16	3
36	Residential	67	40	56	16	3
37	Residential	67	40	58	18	3
45	Residential	67	39	62	23	3

Source: 2010 Noise Study

The existing noise levels were evaluated at 45 representative locations selected because of their proximity to the proposed alternatives and adjacent receptors. They ranged between 39 dBA and 63 dBA. Overall, the existing noise levels at all receivers were relatively low, with an average noise level of approximately 51dBA. There were, however, a number of receivers that had existing noise levels near 60 dBA. In general, these receivers were businesses or single family residences that were located adjacent to the existing highway.

The predicted noise levels for the design year (2034) were determined using the noise model. All noise levels were rounded to the nearest decibel for comparison purposes. The predicted noise levels for the No-Build Alternative were determined as well. Based on the predicted noise levels, there are five receivers that would experience substantial noise increases (over 12 dBA) and two receivers that are approaching or over the noise abatement criteria. There were no receivers that would experience severe noise increases (exceeding 30 dBA). The existing and predicted noise levels for the substantially affected receivers have been summarized in Table 2-22.

Alternative 1

The traffic noise modeling results indicate that traffic noise levels at residences in the vicinity of the Alternative 1 alignment are predicted to be in the range of 41to 65 dBA in 2034. The results also indicate that the increase in noise between existing and post project conditions is predicted to be less than significant (fewer than 12 dBA). Because the predicted noise levels in 2034 would not approach or exceed the noise abatement criterion (67 dBA) or result in a substantial increase in noise, noise abatement does not need to be considered for Alternative 1.

Alternatives 2 and 2A

The noise modeling results in Table 2-21 indicate traffic noise levels at receptors in the vicinity of this alternative are predicted to be in the range of 41 to 68 dBA in 2034. The table shows two impacted receptors—R-7 and R-19—that would experience noise levels at and above the noise abatement criteria, 68 dBA and 67 dBA, respectively. R-19 represents a residence, and R-7 represents a printing business; both locations are within the alignment for Alternatives 2 and 2A. These locations would be acquired for the construction of Alternatives 2 and 2A. Table 2-22 shows the noise levels at the remaining receptors for Alternatives 2 and 2A would increase above existing noise levels, but the increase would be less than 12 dBA and therefore not considered significant, and the noise levels will remain below the noise abatement criteria. Noise abatement does not need to be considered for Alternatives 2 and 2A.

Alternative 3

Modeling results for Alternative 3 indicate traffic noise levels at receptors in the vicinity of this alternative are predicted to be in the range of 31 to 62 dBA by 2034. Table 2-21 shows five impacted receptors—R-9, R-12, R-36, R-37 and R-45—that would experience a noise level increase of 12 or more dBA from current levels, a significant increase. The predicted noise levels at these receptors are expected to exceed the existing levels by 14 dBA, 16 dBA, 16 dBA, 18 dBA, and 23 dBA, respectively. Because predicted noise levels in the design year are substantially higher, traffic noise abatement must be considered.

Caltrans Preferred Alternative

The Caltrans Preferred Alternative shares the same alignment as the southern portion of Alternative 3. The modeling results indicate traffic noise levels at receptors in the vicinity of this alternative are predicted to be in the range of 51 to 57 dBA by 2034

(see Table 2-21). No receptors would experience a noise level increase of 12 or more dBA from current levels. Noise abatement does not need to be considered for the Caltrans Preferred Alternative.

Avoidance, Minimization, and/or Abatement Measures

As required by federal Noise Abatement Criteria (found in 22 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise), noise abatement must be considered because five receivers have been identified as approaching or exceeding the noise abatement criteria by 2034.

Alternative 3

A Noise Abatement Decision Report was prepared to determine the reasonability and feasibility of abatement for the proposed project. It also presents the engineering cost estimate for the evaluated abatement; the engineering evaluation of no acoustical feasibility issues; the preliminary noise abatement decision; and preliminary information on secondary effects of abatement, such as impacts on cultural resources, scenic views, hazardous waste, biology or any other factor of concern.

The report determined that only three of the substantially affected receivers could be abated with an exterior barrier and proposed five acoustically feasible soundwalls. A soundwall was proposed to reduce noise at receptors R36, R37, and R45. The proposed wall would be 1,300 feet long and would be west of these receptors, as shown in Appendix I. Various wall heights were evaluated for acoustic feasibility (the reduction of noise by at least 5 dBA), and reasonable allowances were calculated based on the number of receivers that would benefit. The wall was modeled at several different heights, and the number of benefited residences varied with the proposed height (see Table 2-24). An engineer's estimate of cost was prepared for each height and compared to the reasonable allowance for that height to determine if the soundwall was reasonable to construct.

While it may be possible to build an acoustically feasible wall that would create a 5-dBA reduction in noise levels, the estimated costs of construction substantially exceed the reasonable allowance for any given height (see Table 2-25 for a summary of the abatement information prepared for this project). Additionally, a soundwall in this area would adversely affect the visual character of this scenic area. As a result, the barrier is not recommended at this location as it is not reasonable to construct.

Table 2-24 Future Noise Levels, Heights, and Noise Reduction from Soundwalls

Receptor # and Location	Predicted Noise Level with Project (dBA)	Predicted Noise Level with Abatement (dBA)											
		10-foot Wall*	IL**	12-foot Wall*	IL**	14-foot Wall*	IL**	16-foot Wall*	IL**	18-foot Wall	IL**	20-foot Wall	IL**
R-36	56	56	0	55	1	53	3	53	3	52	4	52	4
R-37	58	58	0	56	2	54	4	54	4	53	5	53	5
R-45	62	59	3	57	5	56	6	55	7	54	8	54	8

Masonry block wall,* *** Insertion Losses***
Source: 2010 Noise Study

Table 2-25 Summary of Key Abatement Information

Height (feet)	Number of Benefited Residences	Feasible?	Total Allowance	Estimated Cost	Reasonable?
10	0	No	$0	NA	N/A
12	1	Yes	$53,000	$525,098	No
14	1	Yes	$53,000	$605,287	No
16	1	Yes	$53,000	$694,269	No
18	2	Yes	$104,000	$783,251	No
20	2	Yes	$104,000	$881,025	No

Source: 2010 Noise Abatement Decision Report

No soundwall is being proposed for location R9 because a soundwall modeled at 16 feet high and 45 feet long would not provide a 5-dBA reduction, therefore construction of a soundwall at this location is not feasible. No soundwall is being proposed for location R12 because construction of this barrier would interfere with driveways that provide access to properties, and breaks in the soundwall would render the wall less effective and therefore not feasible.

Construction Noise – All Build Alternatives

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02, Noise and Vibration, and applicable local noise standards. Construction noise will be short term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures will minimize the temporary noise impacts from construction:

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.

- As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

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 habitat fragmentation. Habitat fragmentation occurs when sensitive habitat is broken up by construction or other activities into smaller units, 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 of the U.S. are discussed in Section 2.3.2.

Affected Environment

A Natural Environment Study for this project was completed in June 2003, a Botanical Survey Report was completed in 2008, and a supplemental Natural Environment Study was completed in January 2010. After the addition of the Caltrans Preferred Alternative, a second supplemental Natural Environment Study was completed in October 2014.

There are 6 natural plant communities in the biological study area. These include Big Sagebrush Series, Creosote Bush Series, Fremont Cottonwood Series, Mixed Saltbush Series, Rubber Rabbitbrush Series, and Shadscale Series.

Big Sagebrush Series

The Big Sagebrush Series is generally described as a typically large, open, discontinuous stand of big sagebrush (*Artemisia tridentata*) of fairly uniform height. Big sagebrush commonly has a single central stem which branches into a nearly globular crown. Plants range in height from 1.6 to 9.8 feet and density ranges from very open, widely spaced, small plants to large, closely spaced plants with canopies touching. In addition to having a deep root system, big sagebrush has a well-developed system of lateral roots close to the soil surface. Consequently, the plants almost completely use the edaphic potential of a site, excluding most other plants in an area up to three times their crown area. This produces stands with shrubs of very uniform size and spacing. Big sagebrush is often mixed with other species of shrubs of similar form and growth habit. In favorable conditions, sagebrush stands have an understory of perennial grasses and forbs. In the project area, this habitat community was observed along the banks of several drainages that transect the project site.

Creosote Bush Series

The Creosote Bush Series is generally described as an open scattered assemblage of creosote bush (*Larrea tridentata*) as well as other microphyll shrubs ranging between 1.5 and 6.5 feet in height. It is found on well-drained soils of flats, slopes, alluvial fans, and valleys. Within the project area this series is found in both the northern and southern portions of the project site, where it has been noted to intergrade with the Shadscale and Mixed Saltbush Series.

Fremont Cottonwood Series

The Fremont Cottonwood Series is typically dominated by Fremont Cottonwood (*Populus fremontii*), a facultative wetland species that grows approximately 80 feet tall. This series is typical of riparian areas where soils are flooded intermittently by fresh water, but remain saturated continuously. In the project area, the Fremont Cottonwood Series only occurs along Olancha Creek.

Mixed Saltbush Series

The Mixed Saltbush Series is a shrub-dominated community with a sparse ground cover in which no particular saltbush (*Atriplex* sp.) species dominates the community. This community is better thought of as a collection of species-defined series, such as the Shadscale Scrub Series, Allscale Series, Four-wing Saltbush Series, etc. Similar to these other mentioned series, the Mixed Saltbush Series is found on well-drained soils of flats, slopes, alluvial fans, and valleys. However, these soils may be carbonate rich, resulting in the high diversity that is unique to this series. This series is the second most prominent habitat type within the project area. The Mixed Saltbush Series occurs near Olancha Creek and continues southward, dominating the southern portion of the project site.

Rubber Rabbitbrush Series

The Rubber Rabbitbrush Series is dominated by various subspecies of rubber rabbitbrush (*Ericameria nauseosus*). Some of these subspecies are general endemics to local areas; others have extensive ranges including disturbed areas occupying abandoned agricultural lands and over-grazed pastures. The species within this series can grow in association with other series dominated by trees, shrubs and even grasses. The Rubber Rabbitbrush Series typically occurs on well-drained, gravelly soils within alluvial fans and valleys. This species was located in the project area next to the existing alignment.

Shadscale Series

The Shadscale Series is an upland vegetation site dominated by shrubs that contains a relatively sparse ground cover, except during the spring months when annual species are blooming. This series can occur on poorly-drained flats with saline or alkaline soils, or on well-drained slopes. Although this series commonly intergrades with other series that also occur in similar soils, the Shadscale Series typically occurs on soils with drier conditions.

This series was found to intergrade closely with the Mixed Saltbush Series, making it difficult to differentiate between the two habitats. In these instances, the biologists who performed the botanical surveys only mapped the Shadscale Series where shadscale was clearly dominant. Areas where shadscale was present, but not

dominant, were mapped as Mixed Saltbush Series. This series is the dominant habitat community on the project site. Areas occupied by this type of habitat likely range from moderate to moderately high in quality, as some areas are next to the existing alignment and other areas are almost a mile west of the current alignment.

Environmental Consequences

Fremont Cottonwood Series

All of the proposed build alternatives would directly affect the Fremont Cottonwood series along the Olancha Creek drainage. Alternative 1 would permanently affect 0.26 acre of the Fremont cottonwood series. Alternatives 2 would affect 1.87 acres and Alternatives 2A and 3 would affect 2.5 acres. Alternative 4 would affect 2.4 acres, and the Caltrans Preferred Alternative would affect 0.51 acre of Fremont Cottonwood habitat.

Big Sagebrush Series, Creosote Bush Series, Mixed Saltbush Series, Rubber Rabbitbrush Series, and Shadscale Series

No effects to these natural communities are anticipated.

Avoidance, Minimization, and/or Mitigation Measures

Fremont Cottonwood Series

Caltrans will replace any Fremont cottonwood trees or native species of willow trees that are 4 inches or greater in diameter (at breast height) at a minimum ratio of 2:1. After the roadway is constructed, a portion of the Fremont cottonwood and willow trees to be planted will be planted on-site along the outer edge of the new right-of-way at the Olancha Creek crossing as space allows. Trees will also be planted at an off-site location as close to the project site as possible. A watering and monitoring plan would be implemented to ensure the plantings are established successfully.

Big Sagebrush Series, Creosote Bush Series, Mixed Saltbush Series, Rubber Rabbitbrush Series, and Shadscale Series

No effects to these natural communities are anticipated, therefore no mitigation or minimization measures are proposed.

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial

seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

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

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

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

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this EO states that a federal agency, such as the Federal Highway Administration (FHWA) and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 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 State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCB) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections

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

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

Affected Environment

A Jurisdictional Delineation Report was prepared for the project in July 2009. Coordination with the U.S. Army Corps of Engineers is discussed in Chapter 4.

Four named streams and a number of other unnamed streams cross the project area. The named streams include Braley Creek, Cartago Creek, Olancha Creek and Summit Creek. The streams flow primarily eastward toward the Owens dry lakebed. The Los Angeles Aqueduct captures most of the surface water for export to Los Angeles. The Los Angeles Aqueduct is situated along the western edge of the project. Large areas of wetlands occur to the east of U.S. Highway 395. There are a little over 28 total acres of wetlands within the project limits and approximately 2 total acres of other waters of the U.S. within the project limits.

Environmental Consequences

This project is expected to affect portions of the on-site wetlands and other waters of the U.S. Most of these wetlands areas occur in areas of natural drainage. The project will construct new concrete bridges to cross the Los Angeles Aqueduct and install concrete box culverts and smaller pipe culverts throughout the project limits to promote drainage.

Table 2-26 Impacts to Wetlands and Waters of the U.S.

Wetland	Size of Wetland	Alt 1 Impacts	Alt 2 Impacts	Alt 2A Impacts	Alt 3 Impacts	Alt 4 Impacts	Caltrans Preferred Alt Impacts
1	2.33 ac	0.41 ac	0.41 ac	0.41 ac	0.41 ac	0.41 ac	0.12 ac
2	1.14 ac	0.12 ac	0.12 ac	0.12 ac	0.12 ac	0.12 ac	0 ac
3	24.71 ac	0.19 ac	0 ac	0 ac	0 ac	0 ac	0 ac
Totals	28.17 ac	0.72 ac	0.53 ac	0.53 ac	0.53 ac	0.53 ac	0.12 ac
Waters of the US	**Size of Waters of the US**	**Alt 1 Impacts**	**Alt 2 Impacts**	**Alt 2A Impacts**	**Alt 3 Impacts**	**Alt 4 Impacts**	**Caltrans Preferred Alt Impacts**
Totals	2.05 ac	0.66 ac	0.63 ac	0.26 ac	0.69 ac	1.49 ac	1.27 ac

Source: 2010 and 2013 Natural Environment Study

Avoidance, Minimization, and/or Mitigation Measures

Project impacts were minimized where possible in the planning stages of the project. To avoid unnecessary impacts to the on-site jurisdictional wetlands and Waters of the U.S., Best Management Practices will be included in the project design. For example, all of the on-site impact areas have been reduced to the smallest practical footprint. Culverts will be installed in areas that contain existing surface water, or are prone to surface water run-off during seasonal or intermittent storms. The installation of culverts will be seasonally timed so perennial (recurring) drainages are low and ephemeral and intermittent drainages are dry.

The following avoidance and minimization measures will also be employed:

- Work in wetlands and Waters of the U.S will be conducted outside of the rainy season when flows are absent or low to minimize temporary impacts.
- A Stormwater Pollution Prevention Plan will be prepared.
- Best management practices protecting water quality will be implemented and will include:
    - Installation of measures to control temporary erosion;
    - Installation of measures to prevent debris from entering surface waters;
    - Measures to be implemented in the case of an accidental spill of hazardous materials. At a minimum, a spill kit shall be kept on-site and an emergency response plan shall be developed and implemented if a spill occurs.

- Any portions of wetlands or waters of the U.S. that will not be permanently impacted will be protected with an environmentally sensitive area (physical demarcation of a designated area to prevent construction equipment from entering the area), unless it is determined to be infeasible. The environmentally sensitive areas will be identified on the project mapping and included in the Plans, Specifications, and Estimates section of the construction contract so they can be installed on-site prior to the start of construction. A qualified biologist would be on-site at the time of the environmental sensitive area installation.

- A mandatory environmental education training would be provided for all construction personnel prior to the start of any ground-breaking activities to review the specific avoidance and minimization measures in place to eliminate unnecessary impacts to wetlands and Waters of the U.S. on the project site.

- Any temporary impacts to wetlands or Waters of the U.S. that are not treated as permanent impacts and for which mitigation is therefore not provided will be restored to pre-project conditions.

Permanent impacts to wetlands and other waters of the U.S. will be mitigated for through the in-lieu fee process or other method as approved by the U.S. Army Corps of Engineers and the Regional Water Quality Control Board. A minimum 1:1 compensation ratio will be implemented upon approval by the U.S. Army Corps of Engineers and the Regional Water Quality Control Board during the permitting process.

2.3.3 Plant Species

Regulatory Setting

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife 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 regulatory information regarding these species.

This section discusses all the other special-status plant species, including California Department of Fish and Wildlife fully protected species and species of special concern, U.S. Fish and Wildlife Service candidate species, U.S. Bureau of Land Management sensitive plants, and other species of plants with no federal or state listing status that have been listed as rare by the California Native Plant Society.

The regulatory requirements for the Federal Endangered Species Act can be found at U.S. 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. Caltrans 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

An initial Natural Environment Study for this project was completed in June 2003, which included the findings of formal botanical surveys that were completed in April, May, and June of 2001. Additional formal botanical surveys were completed in April and June of 2008 and the findings reported in a Botanical Survey Report dated October 2008. After the addition of the Caltrans Preferred Alternative, an informal follow-up botanical survey, targeting specific species, was conducted in the northern portion of the project area in May 2013. All surveys were timed to coincide with the known flowering periods of native plants that have the potential to occur in the biological study area. Flowering periods were determined as listed in the California Native Plant Society's Inventory of Rare and Endangered Plants of California. A supplemental Natural Environment Study was completed in April 2010 and a second supplemental Natural Environment Study was completed in October 2014.

This section includes species that were found in the project area during one or more surveys, and species with the potential to occur in the project area.

White Pygmy-Poppy

The white pygmy-poppy (*Canbya candida*) is an annual herb of the poppy family that flowers between March and June. It occurs in Inyo, Kern , Los Angeles, and San Bernardino counties from approximately 1,900 to 3,900 feet in elevation. The white pygmy-poppy grows in Joshua tree woodland, Mojave desert scrub, and pinyon and juniper woodland communities on sandy or granitic soils. A large patch of this species was identified in the Alternative 2A alignment and in close proximity to the Alternative 3 alignment. The Caltrans Preferred Alternative alignment would impact the white pygmy-poppy.

Sanicle Cymopterus

Sanicle cymopterus (*Cymopterus ripleyi* var. *saniculoides*) is a perennial herb that belongs to the carrot family (Apiaceae). This species is native to both California and Nevada and is found in creosote bush scrub and Joshua Tree Woodlands. Common threats to this species include grazing, vehicles and mining.

Sanicle cymopterus is ranked 1B.2 by the California Native Plant Society rare and endangered plant inventory. The 1B rank status identifies the species as being rare, threatened or endangered in Californian, and elsewhere. The 0.2 describes this plant as being fairly threatened in the state of California. This species is also included on the BLM Sensitive Plant list. This species of plant most often grows in Joshua tree woodland and creosote bush scrub communities, but in the vicinity of the study area it has been reported within the desert saltbush scrub, shadscale scrub, and greasewood

communities. Sanicle cymopterus was not identified in the project area during any of the formal botanical or follow-up surveys.

Crowned Muilla

Crowned muilla (*Muilla coronata*) is a perennial herb that belongs to the Brodiaea family (Themidaceae). It is native to California and Nevada. This species is found in creosote bush scrub, Joshua tree woodlands and pinyon-juniper woodlands. Crowned muilla is ranked 4.2 on the California Native Plant Society rare and endangered plant inventory. The 4-rank status identifies this species as having a limited distribution and the 0.2 further qualifies the plant as being fairly threatened in the state of California. Although plants with a "4" rank status do not meet the definitions of the Native Plant Protection Act or the California Endangered Species Act of the Fish and Game Code, many are locally significant. Therefore, the California Native Plant Society recommends that "4" ranked plants be evaluated for consideration during preparation of environmental documents relating to the California Environmental Policy Act. Caltrans current policy is to only consider the effects of a proposed project on plants with "1A" rank status—those plants presumed extinct in California; "1B" rank status-plants rare, threatened or endangered in California and elsewhere; and "2" rank status—plants rare, threatened or endangered in California, but more common elsewhere. However, because this species was observed and studied earlier in the project development process, it is being considered in this document.

Nevada Oryctes

Nevada oryctes (*Oryctes nevadensis*) is an annual herb that belongs to the nightshade family (Solanaceae). This species is native to California and Nevada. It is found in creosote bush scrub and shadscale shrub communities. Nevada oryctes is ranked 2B.1 on the California Native Plant Society rare and endangered plant inventory. The 2B-rank indicates this species is rare, threatened or endangered in California, but more common elsewhere and the 0.1 further describes the species as seriously threatened in California. Common threats to this species include grazing, off-road vehicle use, and foot traffic/trampling. This species was not identified in the project area during any of the formal botanical or follow-up surveys.

Inyo Phacelia

Inyo phacelia (*Phacelia inyoensis*) is an annual herb that is a member of the Borage family (Boraginaceae). This species is native to California and is limited to California alone. It is commonly located in alkaline wet meadows and seeps. Inyo phacelia is ranked 1B.2 on the California Native Plant Society rare and endangered plant inventory. The 1B- rank indicates this species is rare, threatened or endangered in California and elsewhere. The 0.2 further qualifies the plant as being fairly threatened in California. This species is also included on the Bureau of Land Management Sensitive Plant list. Common threats to this species include: trampling, grazing and vehicles. This species was not identified in the project area during any of the formal botanical or follow-up surveys.

Charlotte's Phacelia

Charlotte's phacelia (*Phacelia nashiana*) is an annual herb that belongs to the Borage family (Boraginaceae). This species is native to California and is limited to California alone. Charlotte's phacelia is found in Mojavean desert scrub, Joshua Tree woodlands and pinyon-juniper woodlands and is most commonly found in sandy, granitic soils.

Charlotte's phacelia is ranked 1B.2 on the California Native Plant Society rare and endangered plant inventory. The 1B rank status identifies the plant as being rare, threatened or endangered in California and elsewhere. The 0.2 further qualifies this plant as being fairly threatened in California. This species is also included on the Bureau of Land Management Sensitive Plant list. This species was not identified in the project area during any of the formal botanical or follow-up surveys.

Parishs Popcorn-flower

Parishs popcorn-flower (*Plagiobothrys parishii*) is an annual herb in the borage family. The primary flowering period is from April to June, but plants have been found in flower any time between March and November. This species was known historically from Inyo, Los Angeles, Mono, and San Bernardino counties. Parishs popcorn-flower has been reported from elevations of approximately 2,460 to 4,600 feet. This species grows in moist alkaline areas within shadscale scrub, sagebrush scrub, and Joshua tree woodland communities. This species was not identified in the project area during any of the formal botanical or follow-up surveys.

Creamy Blazing Star

Creamy blazing star (*Mentzelia tridentata*) is an annual herb that is a member of the eveningstar family (Loasaceae). This species is native to California alone and is found in rocky, gravelly or sandy soils in Mojavean desert scrub habitat. The most common threats to this species are vehicles, mining and grazing. The creamy blazing star is ranked 1B.3 on the California Native Plant Society rare and endangered plant inventory. The 1B rank status identifies the plant as being rare, threatened or endangered in California and elsewhere. The 0.3 further qualifies this plant as being not very threatened in the state of California. This species is also included on the Bureau of Land Management Sensitive Plant list. This species was not identified in the project area during any of the formal botanical or follow-up target surveys.

Limestone Monkeyflower

The limestone monkeyflower (*Erythranthe calcicola*) is an annual herb that belongs to the lopseed family (Phrymaceae). The limestone monkeyflower is found in the northern Mojave Desert, in eastern California and southwestern Nevada. This species was first described in 2012 and was previously treated as the Carson Valley monkeyflower (*E. montioides*); however, it was recently determined to be a separate species based on differences in leaf shape and calyx morphology. There are only 15 documented occurrence records for this new species and as its name implies, it occurs almost exclusively on soils derived of limestone. Furthermore, the majority of occurrence records for this species are from locations within and near Death Valley National Park. The potential threats identified for this species are historical mining

operations and invasive plants. The limestone monkeyflower has a 1B.3 rank status according to the California Native Plant Society rare and endangered plant inventory. The 1B rank describes this plant as being rare in California and elsewhere and the 0.3 rank identifies the plant as not being very threatened in California. This species is also included on the Bureau of Land Management Sensitive Plant list. This species was not identified in the project area during any of the formal botanical or follow-up surveys.

Inyo County Star Tulip

The Inyo County star tulip (*Calochortus excavatus*) is a perennial herb that belongs to the lily family. This species is on the California Rare Plant Ranks list. It blooms during April and May and can be found in Inyo and Mono Counties. The Inyo County star tulip mostly grows in alkali meadows, but a few are in irrigated pastures and dry slopes near springs. This species was not observed in the project area during surveys.

Coso Mountains Lupine

The Coso Mountains lupine (*Lupinus magnificus*) is a perennial herb that belongs to the pea family. This species is on the California Rare Plant Ranks list. It blooms from April to June and is found in Inyo and San Bernardino Counties. It typically grows on loose, rocky slopes. This species was not observed in the project area during surveys.

Environmental Consequences

Sanicle Cymopterus, Nevada Oryctes, Inyo Phacelia, Charlotte's Phacelia, Creamy Blazing Star, Limestone Monkeyflower, Coso Mountains Lupine

None of these species were observed during surveys within the project area for any of the build alternatives. Therefore, no impacts are expected to occur.

Parishs Popcorn-Flower and Inyo County Star Tulip

None of the build alternatives would have direct impacts on these species. There was a chance that indirect hydrologic impacts could happen if upslope water flow was reduced, however the potential of this happening was reduced with the addition of culverts.

White Pygmy-Poppy

Alternatives 1, 2, and 4 would not impact the white pygmy-poppy because the alignments are far enough away from the observed habitat. The alignment for Alternative 2A would permanently impact 5.6 acres of habitat. Alternative 3 would not directly impact the white pygmy-poppy because known habitat is about 115 feet from the alignment. The Caltrans Preferred Alternative would impact approximately 5.46 acres of habitat.

Crowned Muilla

Alternatives 1, 2, 2A, and 3 would not impact the crowned muilla. However, Alternative 4 would impact the crowned muilla directly due to the ground-disturbing

activities. This species is present near the Caltrans Preferred Alternative's alignment, but would be protected with the installation of an Environmentally Sensitive Area.

Avoidance, Minimization, and/or Mitigation Measures

Sanicle Cymopterus, Nevada Oryctes, Inyo Phacelia, Charlotte's Phacelia, Creamy Blazing Star, Limestone Monkeyflower, Coso Mountains Lupine

Because these species were not observed in the project area, no avoidance, minimization, and/or mitigation measures are proposed.

Parishs Popcorn-flower and Inyo County Star Tulip

Possible indirect impacts to these species would be minimized due to the installation of properly sized culverts. No minimization or mitigation measures are proposed.

White Pygmy-Poppy

Impacts to the white pygmy-poppy will be minimized by duff provisions. Caltrans would collect duff and soil and then respread them in the study area. Viable seeds in the duff would be salvaged and respread so they could germinate in the next adequate rainfall. During construction, an Environmentally Sensitive Area will be established for any portions of the mapped population located within the new Caltrans right-of-way.

Crowned Muilla

Known populations of this species will be protected by the installation of an Environmentally Sensitive Area. No mitigation measures are proposed for this 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's National Marine Fisheries Service, and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with 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 California Department of Fish and Wildlife fully protected species and species of special concern and U.S. Fish and Wildlife Service 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 1601–1603 of the Fish and Game Code
- Sections 4150 and 4152 of the Fish and Game Code

In addition to state and federal laws regulating impacts to wildlife, there are often local regulations (for example, county or city) that need to be considered when developing projects. If work is being done on federal land (U.S. Bureau of Land Management or U.S. Forest Service, for example), then those agencies' regulations, and policies are followed.

Affected Environment

A Natural Environment Study for this project was completed in June 2003, and a supplemental Natural Environment Study was completed in January 2010. A second supplemental Natural Environment Study was completed in October 2014.

Bats

Bats typically roost during the day in a variety of shelters, including in buildings, under bridges, in hollows or under loose bark of trees, in mines, caves, and cracks, and in crevices on rock faces. They forage at night. Bats are protected by Section 2126 of the California Fish and Game Code, which states it is unlawful for any person to take any mammal identified by Section 2118, which includes all species of the Order Chiroptera (bats).

Species identified during the bat surveys in the project area included the pallid bat, silver-haired bat, spotted bat, western small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, and Yuma myotis. The Townsend's big-eared bat was not detected during surveys but because this species and pallid bats are frequently in the same location, it is assumed that the Townsend's big-eared bat could be present as well. All but the silver-haired bat and the long-legged myotis are U.S. Bureau of Land Management sensitive species.

Migratory Birds

Numerous species of migratory birds are likely to nest within the project area, or may use the area during spring and/or fall migrations.

Mule Deer

The California Department of Fish and Wildlife has identified the Monache deer herd using the habitat within the proposed project area to the west of the Los Angeles Aqueduct. The Monache herd is made up of the Inyo mule deer (*Odocoileus hemionus inyoensis*).

Owens Valley Vole

The Owens Valley vole *(Microtus californicus vallicola)* is designated a California Species of Concern and is a U.S. Bureau of Land Management sensitive species.

Little is known about the status of this species population. It inhabits wet meadows in the Owens Valley. The species was captured in an irrigated pasture during the Mojave ground squirrel trapping efforts that were conducted in 2001 and 2002.

Burrowing Owl

The burrowing owl *(Athene cunicularia)* is designated a California Species of Concern and is a U.S. Bureau of Land Management sensitive species. Burrowing owls are widely distributed throughout western North America, and Florida. Burrowing owls in Florida and the southern portion of their western range, including the majority of California, are year-round residents. In California, this species habitat preference includes grasslands, deserts and shrub steppe communities that are open with few shrubs and/or sparse vegetation, gentle topography and well-drained soils. No burrowing owls, or their sign, were detected during the focused raptor surveys conducted in 2001. However, during the 2012 focused desert tortoise surveys, three burrowing owls, one with a burrow, were observed in the Caltrans Preferred Alternative study area south of Olancha Creek.

Golden Eagle

The golden eagle *(Aquila chrysaetos)* is a state-fully protected species that is also offered protection under three federal laws: The Bald and Golden Eagle Protection Act, The Migratory Bird Treaty Act and The Lacey Act. Additionally, the golden eagle is a U.S. Bureau of Land Management sensitive species. There are an estimated 30,000 golden eagles across the Unites States. Golden eagles live in semi-open habitats across the majority of the northern hemisphere. They prefer canyonlands, mountain habitats, riverside cliffs and bluffs, and nesting on cliffs or the largest tree in a forested area to obtain unobstructed views of their surrounding landscape. This species typically avoids nesting in urban areas, due to their sensitivity to human disturbance, but have been observed nesting in rural urban areas and farmlands.

Three documented golden eagle nest sites are located less than ten miles from the project area. Two were documented during aerial surveys conducted in 1977 and the third was observed in 2009. Golden eagles were not observed during the focused raptor surveys conducted in 2001; however they have been observed flying through the project area during other field surveys. Because there are no cliffs or large trees in the project area, there is no suitable nesting habitat; however, nesting golden eagles in the vicinity may use the project site and lands in the larger vicinity for foraging.

Loggerhead Shrike

The loggerhead shrike *(Lanius ludovicianus)* is designated as a California Species of Concern and is both a common resident and winter visitor within the state. In the Owens Valley, the loggerhead shrike migrates to the southern deserts to over-winter. The loggerhead shrike lays eggs from March into May and young fledge and are independent in July or August. This species also requires the presence of perches for hunting, and sharp, thorned, or multi-stemmed plants or barbed wire fencing for the impalement of prey, which allows birds to manipulate and eat, or cache, their food items. This species was observed several times during the project surveys.

Le Conte's Thrasher

The Le Conte's thrasher *(Toxostoma lecontei)* is an uncommon to rare local resident in the southern California deserts from southern Mono County to the Mexican border and in the western and southern San Joaquin Valley. This species prefers habitats with scattered shrubs and is commonly found in open desert wash, desert scrub, alkali desert scrub, succulent desert shrub habitats and in Joshua Trees with scattered shrub cover. Breeding occurs from late January to early June, with a peak between mid-March and mid-April. This species was observed several times during the project surveys.

Northern Sagebrush Lizard

The northern sagebrush lizard (*Sceloporus graciosus graciosus*) is a U.S. Bureau of Land Management sensitive species of lizard that ranges from southwestern North Dakota to southeastern Oregon and southward to northwestern New Mexico. This species lives on desert floors, mountain slopes, forested slopes and open flatlands in sagebrush and other types of shrublands. The northern sagebrush lizard is diurnal and is active between late April and mid-September, hibernating during the winter. This species eats insects and is known to be easily frightened and prone to hiding, which makes observations less common. Focused surveys for the northern sagebrush lizard were not conducted.

Mountain Plover

The mountain plover (*Charadrius montanus*) is designated a California Species of Concern by the California Department of Fish and Wildlife and is listed as sensitive according to the Bureau of Land Management. The mountain plover is California winter resident that occupies short-grass prairies, open sagebrush habitat and plowed fields in the Central Valley, foothills west of the San Joaquin Valley, Imperial Valley, Los Angeles, western portions of San Bernadino County, and along the Central Colorado River Valley. This species has also been documented outside of its known range along the northern coast of California as well as around Owens Lake in Inyo County. No surveys were conducted for the mountain plover and this species was not observed during any of the field work completed for this project.

Yellow-Breasted Chat

The yellow-breasted chat (*Icteria virens*) is a California Species of Concern according to the California Department of Fish and Wildlife. This species is an uncommon summer breeder and migrant in coastal California, the foothills of the Sierra Nevada and desert riparian habitats in the eastern Sierra Nevada. This species arrives in California in late March and stays until late September, with breeding occurring between late April and early August. The yellow-breasted chat prefers early successional riparian habitats with a thick, well-developed shrub layer and an open canopy. Nesting chats are typically found in species of shrubs that form dense thickets. Focused surveys for the yellow-breasted chat were not conducted and no yellow-breasted chats were observed during any of the project's field studies.

American Badger

The American badger (*Taxidea taxus*) is a medium to large-sized mammal with powerful short legs and long claws that are used to aid in digging. The badger's body is stout and wider than high and the fur shaggy, with a silvery grey color. The badgers head is dark and there is a white stripe that extends down the length of the animal's back; its tail is short and yellowish in color. This species is most common in drier open shrub, forested or herbaceous habitats with friable soils. Their burrows usually have one elliptical entrance, which measures approximately 8 to 12 inches in diameter, with the sides being narrower than the height. Badgers will use old burrows and are also known to dig a new burrow each night during the warm summer months. Badgers primarily feed on small mammals such as ground squirrels, gophers, mice, rats and chipmunks, but also eat birds, eggs, reptiles and carrion. Focused surveys were not conducted for the badger and live badgers or their burrows were not observed in the project site during any of the surveys.

Environmental Consequences

Bats

Construction of the build alternatives would impact the bats. All alternatives would impact potential foraging and/or roosting habitat along Olancha Creek. The Caltrans Preferred Alternative will impact 0.51 acres of foraging habitat on Olancha Creek that is potentially used by the pallid bat, Townsend's big-eared bat, spotted bat and Yuma myotis. The same 0.51 acres is potentially used as roosting habitat for the Sliver-haired bat and long-legged myotis. Additionally, the long-eared myotis may use this same area for nursery colonies. One abandoned building in Cartago will be demolished. The building could provide roosting habitat for the western small-footed myotis, fringed myotis, Yuma myotis, and the long-legged mytois.

Migratory Birds

The project may remove potential nesting habitat for migratory bird species.

Mule Deer

No impacts to this species are anticipated for any of the build alternatives.

Owens Valley Vole

All of the build alternatives could affect Owens Valley vole wetland habitat. Alternative 1 would affect 0.72 acre, Alternatives 2, 2A, 3, and 4 would affect 0.53 acre, and the Caltrans Preferred Alternative would affect 0.12 acre of wetland habitat.

Burrowing Owl

All of the build alternatives would impact potential burrowing owl habitat as a result of construction. Alternative 1 would affect 330.31 acres, Alternative 2 would affect 464.55 acres, Alternative 2A would affect 493.58 acres, Alternative 3 would affect 463.63 acres, Alternative 4 would affect 675.4 acres, and the Caltrans Preferred Alternative would affect 651.28 acres.

Golden Eagle

Although no nests or specific foraging behaviors have been observed in the project area, avoidance and minimization measures are being proposed to avoid take of this species.

Loggerhead Shrike

No impacts to individual loggerhead shrikes are anticipated to occur during construction of the project; however, loss of habitat, resulting from the constructed project would indirectly impact this species through the removal of undeveloped land.

Le Conte's Thrasher

No impacts to this species are anticipated during construction; however, this species could be affected by the loss of potentially suitable habitat.

Northern Sagebrush Lizard

No impacts to the northern sagebrush lizard are anticipated. However, preconstruction surveys will be included for this species.

Mountain Plover

No surveys were conducted for the mountain plover and this species was not observed during any of the field work completed for this project. Due to the documented occurrence of the mountain plover in the vicinity of Owen's Lake in 2007, it is possible this species could over-winter on lands within or adjacent to the project site. However, because this species does not nest in California, it is anticipated that if any are present in the project area at the start of construction, they will leave on their own accord. Therefore, no impacts are anticipated for this species.

Yellow-Breasted Chat

Focused surveys for the yellow-breasted chat were not conducted and no yellow-breasted chats were observed during any of the project's field studies. This species is not expected to occur in the project site so no impacts to this species are anticipated.

American Badger

Focused surveys were not conducted for the badger and live badgers or their burrows were not observed in the project site during any of the surveys. Because this species or its sign were not observed during the surveys conducted throughout the study of the project site, badgers are not expected to occur in the project site.

Avoidance, Minimization, and/or Mitigation Measures

Bats

There is a potential for silver-haired bats to roost within the trees along Olancha Creek. Therefore, to avoid potential impacts to this species, any trees identified for removal will be studied for the presence of loose or peeling bark prior to the onset of clearing and grubbing. If any trees with potential habitat are discovered they would be

avoided, or if avoidance is not feasible, impacts would be minimized through the careful removal of the loose bark, prior to the removal of the tree.

There is also a potential for the long-legged myotis to roost within the trees along Olancha Creek and in the building proposed for demolition. Therefore, to avoid potential impacts to this species, any trees identified for removal will be studied for the presence of loose or peeling bark prior to the onset of clearing and grubbing. If any trees with potential habitat are discovered they would be avoided, or if avoidance is not feasible, impacts would be minimized through the careful removal of the loose bark, prior to the removal of the tree. Furthermore, pre-demolition surveys will be completed in the building that is to be removed and if needed, bat exclusion will be installed to prevent this species from roosting in the building prior to its demolition.

Bats surveys will commence during the pre-construction clearance surveys, which will be completed at the time of the migratory bird clearance surveys. If evidence of roosting bats is discovered at the time of the surveys, the appropriate bat protection measures will be incorporated prior to the onset of construction. Exclusion methods will be provided to California Department of Fish and Wildlife for approval prior to installation, but some examples of methods used for bat exclusion include:

- Netting, foam, or other exclusion devices can be installed to prohibit use of potential roosting habitat;
- One way doors can be installed to allow roosting bats to exit but not re-enter roosting habitat;
- Any exclusionary devices used will be removed between September 1 and April 15 after construction has been completed.

Migratory Birds

All of the project build alternatives will include the removal of surface vegetation, shrubs, and trees that provide potential nesting habitat for migratory birds protected by the Migratory Bird Treaty Act of 1918. Therefore, Section 14 Special Provisions for bird protection will be included in the construction contract and will include the following avoidance and minimization measures:

- Clearing and grubbing will be completed outside of the nesting season where feasible in order to avoid unnecessary impacts migratory birds;
- Migratory bird clearance surveys will be completed 1 to 2 weeks prior to the start of construction if commencement occurs during the nesting season;
- A mandatory environmental education will be provided for all construction personnel prior to the start of any clearing, grubbing or ground-breaking activities to review the importance of avoiding impacts to nesting migratory birds observed in the project;

- Any nests discovered during the pre-construction surveys will be ESA protected along with a construction buffer to avoid impacts to young birds until they are able to fledge from the nest.

Mule Deer

Because no impacts to mule deer are expected, no minimization or mitigation is proposed.

Owen's Valley Vole

Compensation for impacts to wetlands will benefit the Owen's Valley vole.

Burrowing Owl

Because burrowing owls were observed within the project site during the 2012 desert tortoise surveys, the following avoidance and minimization measures will be employed to protect this species both during and after construction.

Prior to construction, protocol level surveys will be conducted to determine the potential presence of individual burrowing owls as well as the location of any of their burrows within the project site. The surveys will follow the guidelines described in the most recent burrowing owl survey protocol. These surveys will cover the entire right-of-way as well as adjacent undeveloped lands located approximately 500 feet beyond the new right-of-way to address indirect impacts to this species that will result from the constructed project. The surveys will be used to determine the following:

- If any burrowing owls or active burrows are present in or in the immediate vicinity of the right-of-way;

- If any individual owls need to be trapped and relocated;

- If any active burrows need to be collapsed to prevent owls from returning to the project site and possibly becoming disturbed by the construction activities or by the introduction of vehicles to the area as a result of the constructed project;

- If any active burrows contain owlets (during the nesting season, approximately April 15th to July 15th) that would need to be protected with an established Environmentally Sensitive Area and appropriate construction buffer that would be in place until the owlets fledge.

If it is determined that a burrowing owl needs to be relocated or that an active burrow needs to be collapsed to prevent owls from re-entering the project site, the following avoidance measures will be implemented:

- A biologist will collapse any active burrows and trap and relocate any live burrowing owls found in the survey area (areas in the new right-of-way and

areas of indirect impact, located approximately 500 feet beyond the new right-of-way);

- Construction activities in proximity to an Environmentally Sensitive Area-protected burrow will be monitored on a weekly basis by a project biologist;

- Weekly monitoring will be continued until the owlets have fledged, or construction has been completed in the area, or the biologist, in consultation with the California Department of Fish and Wildlife, determines that monitoring is no longer needed in that location.

Prior to the onset of any ground disturbing activities associated with the project, the monitor shall provide all construction personnel who will be present on the work site (within or adjacent to the right-of-way) with a mandatory worker education training which will include the following information:

- A detailed description of the burrowing owl and their life history, including color photographs of the species as well as their scat and burrows;

- A description of the protection the burrowing owl receives from the California Department of Fish and Wildlife and possible legal action that may be incurred for violation of the protection this species receives;

- All trash that may attract predators of burrowing owls will be removed from work sites, or completely secured at the end of the day;

- All workers will be advised that equipment and vehicles must remain within the designated work areas, to be provided and approved by the monitor prior to the onset of construction.

Golden Eagle

Clearing and grubbing will be completed between September 1st and February 15th (which is outside of the nesting season), unless deemed infeasible. If clearing and grubbing cannot be completed during the above time frame, clearance surveys for golden eagles must be completed 1 to 2 weeks prior to the start of work.

If any eagle nests are discovered during the clearance surveys, an Environmentally Sensitive Area and construction buffer will be established around the nest. A qualified project biologist will be present to monitor the nest during all construction activities in the vicinity of the nest and the Environmentally Sensitive Area will be maintained until the young have fledged.

An environmental Worker Education Training will be provided to all workers who enter the project site to discuss the golden eagle. In addition to providing a description of the protection the golden eagle receives, the Worker Education Training will also inform workers that if any eagles are observed on the site,

construction activities will be halted until the individual leaves the site on its own accord.

A project biologist will be present at the project site at least once per week throughout the duration of construction. Golden eagles will be watched for, even if no birds are observed on the project site between now and the start of construction.

Loggerhead Shrike

Tree and vegetation removal have been proposed to occur between approximately September and February, outside of the nesting season, unless deemed infeasible and subsequently pre-authorized by the project biologist. Pre-construction migratory bird clearance surveys will be conducted both prior to any clearing and grubbing, and prior to the start of construction, if these activities do not occur concurrently. If any nesting loggerhead shrikes are discovered within the project site, an Environmentally Sensitive Area and construction buffer will be established around the nest until young have fledged. The mitigation proposed for the desert tortoise will benefit the loggerhead shrike (see Threatened and Endangered Species, Section 2.3.5).

Le Conte's Thrasher

Prior to any clearing and grubbing, migratory bird clearance surveys will be completed, although this species is not covered under the Migratory Bird Treaty Act, if any nesting Le Conte's thrashers are discovered in the project site, an Environmentally Sensitive Area will be established around the nest and will include a protective buffer to avoid disturbance to the nesting pair until their young have fledged. No other minimization or mitigation measures are anticipated. The mitigation proposed for the desert tortoise will benefit the Le Conte's thrasher (see Threatened and Endangered Species, Section 2.3.5).

Northern Sagebrush Lizard

If individual northern sagebrush lizards are observed during preconstruction surveys, their location would be recorded and any suitable burrows found will be avoided as feasible. In addition, it is expected that any individuals would leave the area prior to becoming injured once construction activities begin. No other minimization or mitigation measures are proposed for this species.

Mountain Plover

Pre-construction migratory bird clearance surveys will be completed on the project site prior to any ground-disturbing activities, such as clearing and grubbing, which will allow project biologists to determine the potential presence of any species of wildlife, including the mountain plover. No additional minimization or mitigation measures are proposed because it is anticipated that if any mountain plovers are present on the project site prior to the onset of any ground-disturbing activities, they will leave on their own accord.

Yellow-Breasted Chat

Pre-construction migratory bird surveys will act as an avoidance measure that will benefit this species if they do happen to nest within the project site. No other minimization or mitigation measures are proposed.

American Badger

Because the badger is not expected to occur within the project site, no avoidance, minimization, or mitigation measures are proposed.

2.3.5 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA), are required to consult with the US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. 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." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the

coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas

Affected Environment

A Natural Environment Study for this project was completed in 2003, and a supplemental Natural Environment Study was completed in 2010. A Biological Assessment was completed for the Caltrans Preferred Alternative in 2013. A second supplemental Natural Environment Study was completed in 2014. The U.S. Fish and Wildlife Service prepared a Biological Opinion for the Caltrans Preferred Alternative (see Appendix J) on June 13, 2014.

Owens Valley Checkerbloom

The Owens Valley checkerbloom *(Sidalcea covillei),* a state endangered species and a Bureau of Land Management Sensitive Species, is a perennial herb of the mallow family. It blooms from April to June. This species is endemic to the Inyo County portion of Owens Valley, at elevations ranging from 3,600 to 4,650 feet. Most reported occurrences are in alkali meadows, but a few are in irrigated pastures and one is on a dry slope near a spring. The Owens Valley checkerbloom typically grows in fine sandy loam soil, but is known to occur in stony calcareous soil at one site. This species needs moist soil, although a fleshy root allows it to survive during periods of low rainfall. This species was not observed during any of the formal botanical surveys, or follow-up surveys conducted, which targeted this species. Therefore this species is not expected to occur within the project site.

Mojave Tar Plant

The Mojave tar plant *(Deinandra mohavensis)* is a state endangered species and a U.S. Bureau of Land Management sensitive species. Mojave tar plant is an annual herb that belongs to the aster family. It is native to, and present in, California alone. This species is found in moist areas of chaparral, coastal scrub and riparian scrub habitats. This species was not observed during any of the formal botanical surveys, or follow-up surveys conducted for target species; therefore this species is not expected to occur within the project site.

Owens Pupfish

The Owens pupfish *(Cyprinodon radiosus)* is a state and federally endangered species. The Owens pupfish is a fish species that requires clear, shallow, warm water in sloughs or springs with sand or silt bottoms and a firm substrate for spawning. They were once abundant but have almost disappeared due to water diversions and the introduction of non-native fishes. The closest of the four known populations is near Bartlett, some 10.6 miles north of the northern boundary of the project area. This species was not observed in the project area.

Owens Tui Chub

The Owens tui chub *(Siphateles bicolor snyderi)* is a state and federally endangered species. The Owens tui chub is a fish species restricted to the Owens Valley, which requires calm, clear streams, spring-fed ponds, or river backwaters with undercut banks or vegetation to provide protection from predators. Critical habitat was designated at the two head springs at the Hot Creek Hatchery east of Mammoth Lakes, and in the Owens River gorge below the Long Valley Dam on Crowley Lake, both more than 60 miles north of the proposed project. This species was not observed in the project area.

Western Snowy Plover

The western snowy plover *(Charadrius nivosus nivosus)*, is a federally endangered species. The western snowy plover is a sparrow-sized, light colored shorebird that uses sandy beaches, salt pond levees, and shores of large alkali lakes for nesting habitat. Potential habitat exists along the western edge of Owens Lake. Habitat for this species is not present in the project area, nor was the species observed during other biological surveys.

Least Bell's Vireo

Least Bell's vireo *(Vireo bellii pusillus)*, a state and federally endangered species, is a small songbird that was once widespread in low-elevation riparian areas of the state. Its preferred habitat is wide active floodplains in willow riparian habitat. It is present in portions of California only during the breeding season. The loss of riparian habitat and nest parasitism by the brown-headed cowbird has drastically reduced the numbers and range of least Bell's vireo. The least Bell's vireo has historically nested in the Olancha area, but this subspecies has not been documented in Olancha for at least 50 years. Furthermore, based on on-site habitat assessments and correspondence with professionals with a demonstrated scientific knowledge of the species, the habitat along Olancha Creek is not sufficient for this species' documented habitat requirements.

Sierra Nevada Bighorn Sheep

The Sierra Nevada bighorn sheep *(Ovis canadensis sierrae)* is a state and federally endangered species. Cottonwood, Ash, Cartago, Olancha, and Falls Creeks are all potential bighorn sheep habitat. Cartago, Olancha, and Falls creeks are more favorable because they readily connect to Olancha Peak, which provides some alpine summer habitat. Olancha Canyon is the most direct connection to this alpine habitat. The winter range would be traditional low-elevation south-facing slopes, of which there is an abundance of excellent habitat reaching low elevations that would ensure high winter and spring diet qualities. Habitat for this species is not present in the project area due to elevation range.

Swainson's Hawk

The Swainson's hawk *(Buteo swainsoni)* is a state threatened species and a U.S. Bureau of Land Management sensitive species. Swainson's hawks breed and migrate in the Central Valley and Owens Valley. They are present in California only during

the nesting season, and they winter in South America. No Swainson's hawks were observed during the focused surveys conducted in March 2001 or during any other fieldwork pertaining to this project. Stick nest sites were observed, but no Swainson's hawks were seen on or near them. However, Swainson's hawks have been reported in the project site prior to 2002.

Desert Tortoise

The desert tortoise *(Gopherus agassizii)* is a state and federal threatened species. The desert tortoise is a large, herbivorous reptile that lives throughout the Mojave and Sonoran deserts from below sea level to 7,300 feet or higher. Desert tortoises are found in a variety of habitats, including creosote bush scrub, saltbush scrub, and Joshua tree woodland. Tortoises are most active during the spring, although they may emerge at any time of the year when temperatures and precipitation are favorable. Desert tortoises have been shown to dig catchment basins in the soil to collect rainwater. Desert tortoises are adapted to conserve water and can survive for over a year without access to water. This species is undergoing a decline due to off-highway vehicle use, competition with livestock, disease, predation, deliberate killing, and general forms of harassment, such as collection. This species is also experiencing the loss and degradation of its habitat.

The project area is at the northern extent of the desert tortoise's habitat range. In 2008, three live tortoises and four burrows were observed along the Alternative 4 alignment. The locations were recorded by Caltrans archaeological survey crew members. Within the past 5 years, four live tortoise sightings have been recorded by fire crew members from the U.S. Bureau of Land Management Ridgecrest Office.

Additional focused surveys for the desert tortoise were completed along the Caltrans Preferred Alternative alignment in October and November 2012. The Desert Tortoise Survey Report, dated December 2012, identified evidence of the desert tortoises' presence within the Caltrans Preferred Alternative alignment through the following observations:

- A cluster of recent and older tortoise burrows and scat are located near the southern terminus of the Caltrans Preferred Alternative;
- Six older burrows located within or along the Caltrans Preferred Alternative alignment south of Olancha Creek;
- A cluster of both recent and older tortoise burrows, and scat, within and around the Caltrans Preferred Alternative immediately north of Olancha Creek;
- One recent burrow just south of the location where the new alignment will join with the existing alignment near Cartago;
- Two older burrows adjacent to the existing U.S. Highway 395 alignment, along the margin of the dry Owens Lake bed.

Mohave Ground Squirrel

The Mohave ground squirrel *(Spermophilus mohavensis)* is a state threatened species and a U.S. Bureau of Land Management sensitive species. The Mohave ground squirrel is a small squirrel with a total length of 9 inches. It is uniformly grayish-brown above and lighter on its underside with a distinctive white eye ring. It eats a variety of green vegetation, seeds, and fruits and forages on the ground or in shrubs and Joshua trees. This squirrel uses a variety of habitat types within several vegetation communities dominated by creosote, shadscale, or Joshua tree.

The Mohave ground squirrel occurs in the Western Mojave Desert from southwestern Inyo County, south through eastern Kern County, northeastern San Bernardino County, and northeastern Los Angeles County. It has one of the smallest geographic ranges of the 28 species of ground squirrel. The project area is at the northern boundary of suitable Mohave ground squirrel habitat. Only the southern portion of the project area has been determined to be suitable habitat for the squirrel. This species was observed during trapping efforts in 2002 in the southern end of the project area.

Informal consultation with the U.S. Fish and Wildlife Service occurred in June 2002 and consultations with the California Department of Fish and Wildlife occurred in July 2002. See Chapter 3 for details of these coordination efforts.

Southwestern Willow Flycatcher

The southwestern willow flycatcher *(Empidonax traillii extimus)* is a state and federal endangered species of migratory bird that breeds in California. It breeds in southern California, Arizona, New Mexico, southwestern Colorado, the extreme southern portions of Nevada and Utah, and northern Mexico. The species overwinters in the subtropical and tropical regions of Mexico, Central America and northern South America. It breeds in relatively dense, but often patchy, riparian tree and shrub communities with surface water and/or saturated soils. Southwestern willow flycatchers migrate about 900 to 5,000 miles one way and arrive at breeding grounds between early May and early June. Riparian habitat is present along Olancha Creek, but suitable nesting habitat for the species was not observed within or adjacent to the project area. It has been determined that potential migratory habitat is present within and next to the project area. The species was not observed during biological surveys.

Environmental Consequences

Owens Valley Checkerbloom

None of the build alternatives would have direct impacts on the Owens Valley checkerbloom. There was a chance that indirect hydrologic impacts could happen if upslope water flow was reduced, however the potential of this happening was reduced with the addition of culverts.

Mohave Tar Plant

This species was not observed during surveys within the project area for any of the build alternatives. Therefore, no impacts are expected to occur.

Owens Pupfish

No impacts to this species are anticipated for any of the build alternatives.

Owens Tui Chub

No impacts to this species are anticipated for any of the build alternatives.

Western Snowy Plover

No impacts to this species are anticipated for any of the build alternatives.

Least Bell's Vireo

No impacts to this species are anticipated for any of the build alternatives.

Sierra Nevada Bighorn Sheep

The edge of the designated critical habitat is located approximately 1,300 feet west of and up-slope from Alternative 4. All other proposed alternatives are located even further away. Therefore, no impacts are anticipated to occur to this species.

Swainson's Hawk

All of the alternatives would result in the removal of trees, which provide nesting habitat for Swainson's hawks. However, because this species has not been observed in the project site since 2002, it has been determined that the build alternatives are not likely to affect this species.

Desert Tortoise

Direct effects to desert tortoises would include permanent and temporary loss of potentially suitable habitat as a result of construction. Table 2-27 shows the estimated acreage of affected habitat for the desert tortoise for each build alternative.

Table 2-27 Impacts to the Desert Tortoise

Project Alternative	Permanent and Temporary Acres of Impact*
1	330.31
2	464.55
2A	493.58
3	463.63
4	675.40
Rec Preferred Alternative	651.28

** Includes 49.24 acres of borrow site and 8.02 acres of vehicle staging areas*

Mohave Ground Squirrel

Direct effects to Mohave ground squirrels would result in the permanent and temporary loss of potentially suitable habitat as a result of construction. Table 2-28 shows the estimated acreage of affected habitat for the Mohave ground squirrel for each build alternative.

Table 2-28 Impacts to the Mohave Ground Squirrel

Project Alternative	Permanent and Temporary Acres of Impact*
1	0
2	0
2A	0
3	134.14
4	283.44
CT Preferred Alternative	292.9

** Includes 49.24 acres of borrow site and 5 acres of vehicle staging areas*

Southwestern Willow Flycatcher

The riparian corridor along Olancha Creek is not of sufficient width to support southwestern willow flycatcher nesting activities. Although the Olancha Creek corridor may contain potential foraging habitat, due to the great distance between the project site and recent documented nesting sites in the county (the closest being approximately 30 miles north of the project site, near the town of Independence), it is most likely that the riparian corridor is used only for migratory stopovers. All of the build alternatives may affect – but are not likely to adversely affect this species. The Caltrans Preferred Alternative will impact 0.93 acre of potentially suitable migratory habitat for the Southwestern willow flycatcher.

Avoidance, Minimization, and/or Mitigation Measures

Owens Valley Checkerbloom

Possible indirect impacts to these species would be minimized due to culvert construction. No avoidance, minimization, or mitigation measures are proposed.

Mohave Tar Plant

Because this species was not observed in the project area, no avoidance, minimization, or mitigation measures are proposed.

Least Bell's Vireo

Clearing and grubbing along Olancha Creek is anticipated to occur outside of the migratory bird breeding season and migratory nesting bird surveys will be completed prior to any ground disturbance and/or removal of vegetation. However, because no

potentially suitable habitat is present in the project area, no additional avoidance, minimization, or mitigation measures are proposed.

Swainson's Hawk

Clearing and grubbing will be completed outside of the nesting season to avoid impacts to nesting birds, unless deemed infeasible. If clearing and grubbing cannot be completed during the above time frame, clearance surveys for Swainson's hawks will be completed 1 to 2 weeks before the start of work. If any active nests are discovered during surveys, Caltrans will establish a protective Environmentally Sensitive Area and a construction buffer will be implemented to protect the young until they have fledged.

Desert Tortoise

A Biological Opinion was issued for the Caltrans Preferred Alternative. The USFWS concluded that although the project may affect and is likely to adversely affect the desert tortoise, it is not likely to jeopardize its continued existence. The following avoidance and minimization measures will be employed to protect the desert tortoise prior to and during construction.

- Prior to construction, a USFWS-authorized biological monitor(s) will conduct focused clearance surveys for the desert tortoise. The surveys will follow USFWS desert tortoise survey protocol. The surveys will cover the entire right-of-way as well as adjacent undeveloped lands located between the existing and new alignment and between the new alignment and the Aqueduct.

- The biological monitor(s) will determine if any tortoises are present on or in the vicinity of the project site, and if any tortoises need to be relocated, and/or any burrows collapsed. Upon discovery of a tortoise or active tortoise burrow during preconstruction surveys, the following avoidance measures will be implemented:

    - An on-call USFWS-authorized desert tortoise biologist will be contacted to collapse any recent tortoise burrows and/or to relocate any live tortoises.

    - The USFWS-authorized desert tortoise biologist may choose to contact the USFWS to determine if the collapsing of a particular burrow and/or the relocation of an individual is appropriate. If it is deemed unnecessary to collapse a burrow, the biological monitor(s) will establish an Environmentally Sensitive Area around the burrow. Any Environmentally Sensitive Area burrow will be monitored by the designated biological monitor(s) at the onset of construction activities in the proximity. The biological monitor(s) will be present until construction has been completed in the area, or until the biological monitor(s), in consultation with the USFWS, deems that monitoring is no longer needed in that location.

Field Contact Representative

- Caltrans will assign a field contact representative with specific experience in the implementation of environmental compliance programs and will act as the liaison among Caltrans, construction workers, authorized biologists, and biological monitors. The field contact representative and authorized biologists will ensure permit compliance. However, the authorized biologist and/or biological monitor will be the only ones in direct contact with wildlife agency staff.

- The field contact representative will have the authority to stop project activities if a desert tortoise is in danger or protective measures are not adequately implemented.

Authorized Biologist and Biological Monitors

- Caltrans will provide USFWS authorized biologists and biological monitors to ensure protective measures are in place for the desert tortoise. Use of authorized biologists and biological monitors will be in accordance with the most up-to-date USFWS guidelines and will be required for monitoring of any construction activities that may injure or kill desert tortoises.

- Caltrans will review the credentials of all authorized biologists and provide them to the USFWS for approval at least 30 days prior to the start of fieldwork.

- Authorized biologists will be responsible for clearance surveys, monitoring, developing and implementing the worker-awareness program, contacting USFWS personnel, long-term monitoring and reporting, and be present during construction, operation, and maintenance that could affect the desert tortoise.

- The Caltrans field contact representative will act on the advice of the authorized biologist to ensure conformance with the protective measures set forth in the Biological Opinion (see Appendix J). Authorized biologists will have the authority to immediately stop work that is not in compliance with these conditions.

Worker Environmental Awareness Program

Caltrans will be responsible for ensuring that all workers at the site receive worker environmental awareness training prior and during construction. The field contact representative and authorized biologist will administer the training to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. Caltrans will implement the worker environmental awareness program to ensure the safeguard of environmentally sensitive resources. The environmental awareness program will be available in English and Spanish and wallet-sized cards

summarizing the information will be provided to all construction personnel. The worker environmental awareness training will:

- Be developed by or in consultation with the authorized biologist and consist of an onsite or training center presentation in which supporting written material and electronic media, including photographs, are made available to all participants.

- Provide an explanation of the purpose and function of the desert tortoise avoidance and minimization measures and the possible penalties for not adhering to them.

- Informing workers that the field contact representative and authorized biologists have the authority to stop work in any area where there would be an unauthorized adverse impact to biological resources if the activities continued.

- Discussing general safety protocols.

- Providing an explanation/identification of the sensitivity and location of the vegetation, biological resources, and habitat within and adjacent to work areas.

- Place special emphasis on the desert tortoise, including information on physical characteristics, photographs, distribution, behavior, sensitively to human activates, legal protection, reporting requirements, and conservation measures required for the project.

- Direct all worker environmental awareness program trainees to report all observations of listed species and their sign to an authorized biologist for inclusion in the monthly compliance report.

- Include a training acknowledgment form that would be signed by each worker indicating that they received training and will abide by the guidelines.

- Provide information on the effects of predation on the desert tortoise by common ravens and other predators and the measures that have been developed to reduce the likelihood predators will be attracted to construction areas.

Construction Monitoring

- An appropriate number of authorized biologists and biological monitors will be available during construction for the protection of the desert tortoise. Authorized biologists will be assigned to monitor each area of activity where conditions exist that may result in take of the desert tortoise.

- The authorized biologist will conduct preconstruction surveys and stop construction activities if a desert tortoise is found within the path of construction equipment. Construction activities will not resume until the desert tortoise moves out of harm's way or the authorized biologist has relocated it.

- An authorized biologist will inspect all excavations that are not within desert tortoise exclusion fencing on a regular basis (several times a day) and immediately prior to filling the excavation. If project personnel discover a desert tortoise in an open trench, an authorized biologist will move it to a safe location.

Designated Areas

- Prior to the start of construction, the project area will be delineated with staking/flagging to clearly identify the limits of work. The markings will be maintained until the exclusionary fencing has been installed.

- Caltrans will confine all project activities to the smallest practical area and will use previously disturbed habitat as much as possible for vehicle turn-around locations and storage areas. Caltrans will restrict project vehicles to stay within the right-of-way, designated areas, or existing roads and will prohibit off-road or cross-county travel except in emergencies. Caltrans will not create any new dirt or additional paved roads. If unforeseen circumstances require disturbance beyond the project right-of-way, Caltrans will notify the USFWS immediately.

Vehicle Use

- The field contract representative or authorized biologist will inform workers at morning briefings if desert tortoises are likely to be active that day or for the foreseeable future. When desert tortoises are expected to be active, workers will inspect the ground around and underneath any vehicle or construction equipment that has been parked longer than 2 minutes within desert tortoise habitat. If a desert tortoise is located, the worker will contact an authorized biologist. If possible, the desert tortoise will be left to move on its own. If the desert tortoise requires removal, an authorized biologist will move it in accordance with the proper handling procedures.

Prohibited Activities

- Caltrans will ensure that workers do not bring firearms and pets into the project area.

Trash and Food

- To prevent common ravens and coyotes from occupying the construction area, trash will be placed in sealed containers and emptied at the close of business each day. The project area will be kept clean from trash as much as possible.

The following permanent, on-site avoidance measures will be implemented to protect the desert tortoises inhabiting areas within and adjacent to the project site:

- Installation of permanent exclusionary desert tortoise fencing.

- Installation of approximately thirteen or more tortoise undercrossings, to be appropriately sized and installed in locations where new culverts have been specified and where passage for desert tortoises is most likely to occur. Caltrans will ensure that all undercrossing entrances and exits are designed to prevent entrapment of the desert tortoises and are regularly cleared of debris after the project is completed.

- Installation of tortoise friendly cattle guards at public access roads (roads that must remain open to public traffic) to prevent tortoise access on to the new alignment. The cattle guards will be modified to include cement tortoise escape ramps, so individuals do not become entrapped.

- Gates with desert tortoise fencing will be installed at all other privately owned access openings to prevent the animals from accessing the new highway.

Exclusionary Fencing

- The first order of construction will be to install permanent desert tortoise exclusionary fencing which will be installed according to the protocols in the Desert Tortoise Field Manual. If desert tortoises are encountered during the installation of the fence, the authorized biologist will move them to an area outside the fence.

- After the exclusionary fencing has been installed and before the onset of ground-disturbing activities, the authorized biologist will survey the area and remove all desert tortoises. The authorized biologist will survey the area following established survey protocols to ensure all desert tortoises have been found.

- Caltrans will maintain the integrity of the fence to ensure that desert tortoises are excluded from the work area during construction. The fence will be inspected regularly, initially on a monthly basis. Caltrans will inspect and, if necessary, repair the fence immediately after any significant rainstorm that occurs during times of the year or at temperatures when desert tortoises are likely to be active.

Desert Tortoise Relocation

- Desert tortoises found within the project area will be handled and relocated by an authorized biologist. Desert tortoises excavated from burrows must be relocated to unoccupied natural or artificially constructed burrows 150 to 300 feet from the original burrow. Relocated desert tortoises will be monitored for at least 2 days after placement in the new burrow to ensure their safety.

Reporting Requirements

Within 60 days of construction completion, Caltrans must provide a report to the USFWS that provide details on the effects of the action on the desert tortoise. Specifically, the report must include information on any instances when desert tortoises were killed, injured, or handled.

Disposition of Dead or Injured Desert Tortoises

Within 3 days of locating any dead or injured desert tortoises, Caltrans will notify the Palm Springs Fish and Wildlife Service Office and issue a report that includes the date, time, and location of the carcass, a photograph, cause of death (if known), and any other pertinent information. Caltrans will take injured desert tortoises to a qualified veterinarian for treatment and contact the USFWS regarding their final disposition.

Compensatory Mitigation for the Desert Tortoise

Mitigation for direct impacts to desert tortoise habitat will be accomplished by purchasing mitigation bank credits or through the preservation of suitable desert tortoise habitat to be preserved in perpetuity. The compensatory mitigation ratio will be determined during the California Department of Fish and Wildlife Incidental Take Permitting process.

Mohave Ground Squirrel

Avoidance and minimization measures for the Mohave ground squirrel will include an environmental awareness program provided to all workers to inform them of the protection measures being implemented to avoid take of the Mohave ground squirrel, based on the conditions outlined in the Incidental Take Permit. This permit will be issued by the California Department of Fish and Wildlife.

Measures will also be contained within the contract special provisions that require work to be stopped in the event a squirrel is located within the project site or becomes injured as a result of the construction activities. Work will not resume until an authorized biologist has relocated the squirrel or allowed it to disperse on its own.

Caltrans would compensate for direct impacts to Mohave ground squirrel habitat concurrently when compensating for impacts to desert tortoise habitat through selection of land that will benefit the recovery of both species.

Southwestern Willow Flycatcher

The Biological Opinion issued for the Caltrans Preferred Alternative found that the project may affect, but is not likely to adversely affect this species. Per the Biological Opinion, the following avoidance and minimization measures will be implemented:

- All clearing and grubbing along Olancha Creek will be completed prior to or after the southwestern willow flycatcher migratory season (approximately May through June and mid-August to September);

- A qualified biologist will conduct focused surveys prior to any clearing and grubbing activities;

- Caltrans will implement a worker awareness and education program for all workers that will include information about the southwestern willow flycatcher, its ecology, legal status, and the importance of protecting riparian habitat in the action area;

- Riparian habitat along the new alignment will be fenced to prevent construction equipment and vehicles from entering the riparian habitat. A qualified biologist will determine the extent of the fencing and will be present when the protective fencing is installed;

- Native riparian trees, such as Fremont cottonwood (*Populus fremontii*) and black willow (*Salix gooddingii*), will be planted along where the new alignment crosses Olancha Creek.

Compensatory mitigation for the loss of habitat would be accomplished by enhancement, restoration or preservation of riparian habitat at a 2:1 ratio as approved by the California Department of Fish and Wildlife.

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

A Natural Environment Study for this project was completed in June 2003, and an addendum document was completed in January 2010. A second addendum Natural Environment Study was completed in October 2014.

There are a number of invasive species present in the project area including giant reed *(Arundo donax),* cheat grass (*Tamarix ramosissima*), red brome (*Bromus madritensis* ssp. *rubens*), black locust (*Robina pseudoacacia*), russian thistle (*Salsola tragus*), wild oats (*Avena fatua*), Italian ryegrass (*Lolium multiflorum*), Mediterranean grass (*Schismus arabicus*), five-hook bassia (*Bassia hyssopifolia*), black mustard (*Brassica nigra*), ripgut brome (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), Russian olive (*Elaeagnus angustifolia*), redstem filaree (*Erodium cicutarium*), short-pod mustard (*Hirschfeldia incana*), rabbitfoot polypogon (*Polypogon monspeliensis*), curly dock (*Rumex crispus*), and tamrisk (*Tamarix ramosissima*).

Environmental Consequences

All of the invasive species establish themselves in disturbed areas and could subsequently spread into any disturbed neighboring habitats.

Avoidance, Minimization, and/or Mitigation Measures

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur. Other measures that will be taken are commitments to ensure to use of invasive-free mulches, topsoils, seed mixes, and other strategies to help reduce existing populations of invasive non-native plants.

2.4 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in

water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under the California Environmental Quality Act can be found in Section 15355 of the California Environmental Quality Act Guidelines. A definition of cumulative impacts under the National Environmental Policy Act can be found in 40 Code of Federal Regulations, Section 1508.7 of the Council on Environmental Quality Regulations.

Affected Environment

Cumulative impacts identified for the Olancha/Cartago Four-Lane project are those impacts that result from past, present, and reasonably foreseeable future actions occurring in the project area. The study area for each of the resources potentially affected by the cumulative projects is shown in Figure 2.5. The affected environment for each of these resources has been previously discussed in their respective portions of Chapter 3.

Reasonably Foreseeable Projects and Past Projects

The list of reasonably foreseeable projects is based on known projects identified by Inyo County and Caltrans, District 9 since the year 2000. Table 2.28 summarizes the reasonably foreseeable projects considered in the cumulative impact analysis of this project. Because the Olancha/Cartago project is located in a rural area along U.S. Highway 395, the list of past and future projects within the project area is small.

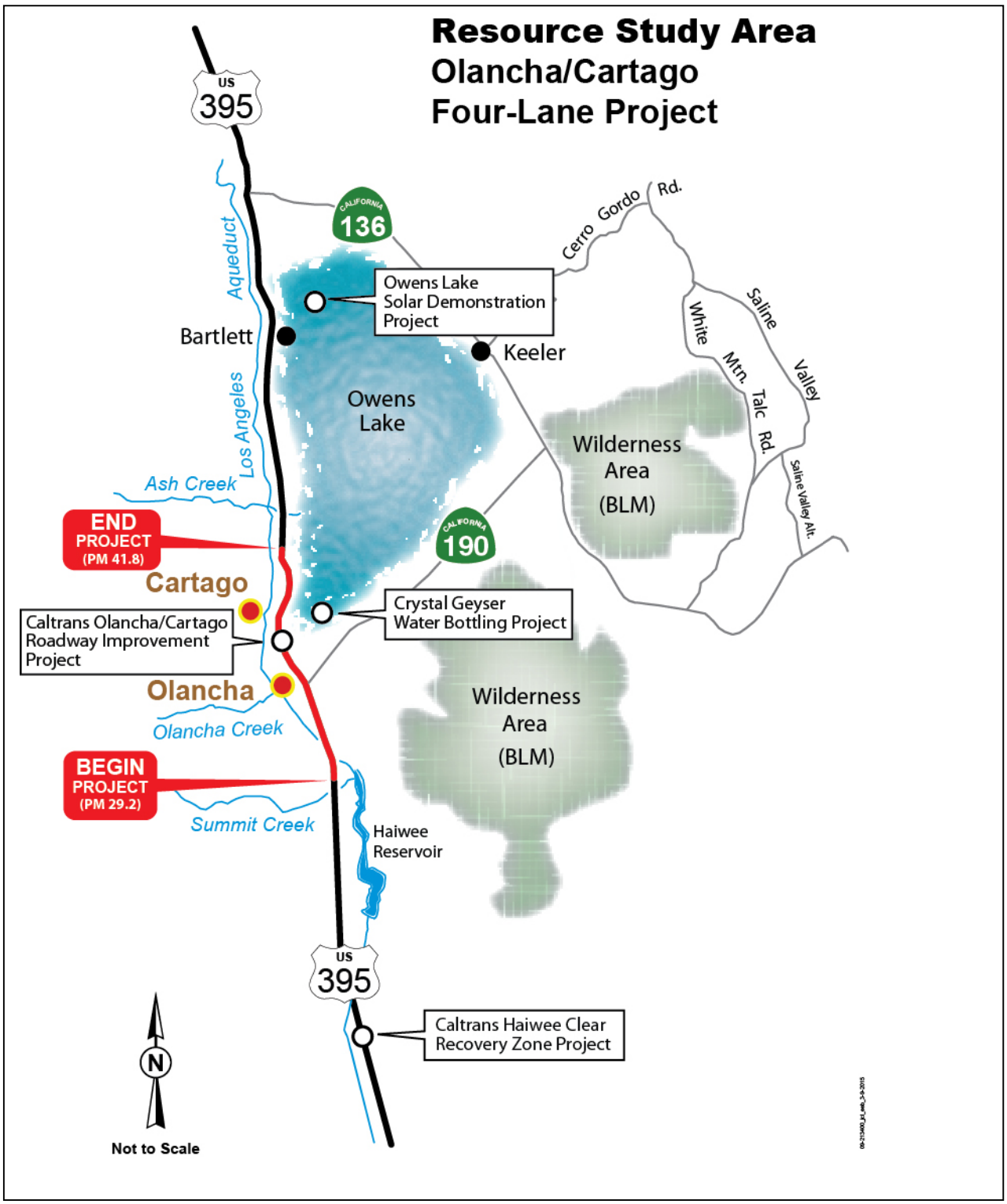


Figure 2.5 Resource Study Area

Table 2-29 Past, Present and Reasonably Foreseeable Future Actions

Project Name or Applicant	Project Location	Project Description	Impacts	Project Status
Caltrans Haiwee Clear Recovery Zone Project	On U.S. Highway 395 south of the Olancha/ Cartago Four-Lane project.	Provides an additional five feet of paved shoulder and 30 feet of unpaved (but clear and graded) ground for vehicle recovery.	Desert tortoise habitat as well as other species of wildlife	Project is scheduled for construction in 2016.
Crystal Geyser Roxane Cabin Bar Ranch Water Bottling Facility Project	East side of U.S. Highway 395 south of Cartago.	198,500-square-foot bottling plant with four bottling lines and a 40,000-square-foot warehouse.	Southwestern willow flycatcher suitable habitat (no recorded occurrences) Mohave ground squirrel suitable habitat (no recorded occurrences). Possible impacts to undiscovered archaeological sites.	Final Environmental Impact Report completed November 2012. Zoning reclassification ordinance approved February 2013. Amendments to the project's conditional use permits were denied by Inyo County in October 2014.
Los Angeles Department of Water and Power Owens Lake Solar Demonstration Project	Northwest section of dry Owens Lake. Located within the Phase 8 dust mitigation area which was covered with geotextile fabric and a 4-inch layer of gravel in November 2012.	Construct a permanent solar facility on a 5.3-acre parcel to generate energy and determine the feasibility of additional solar facilities on Owens Lake.	Entire site is devoid of vegetation. Possible impacts to undiscovered archaeological sites.	Notice of Determination and Mitigated Negative Declaration was approved June 2013.
Caltrans Olancha/Cartago Roadway Improvements	On U.S. Highway 395 near the towns of Olancha and Cartago.	Widen shoulders from 4 to 8 feet within Caltrans right-of-way.	None.	Construction completed in 2006.

Environmental Consequences

This section discusses potential impacts to various resources that could occur as a result of Olancha/Cartago Four-Lane project combined with other projects listed in Table 2-29.

Cultural Resources

Resource Study Area

The resource study area for cultural resources includes part of Owens Valley from the intersection of U.S. Highway 395 and State Route 136 on the north, the base of the Sierra Nevada on the west, U.S. Highway 395 south of Summit Creek, and U.S. Highway 395 on the east (see Figure 2.5).

Health and Historical Context

Prehistoric sites throughout the area are dominated by obsidian flaked stone scatters. Historical sites are mostly refuse scatters and linear features. Prominent among these are the Southern Pacific Mojave-Owenyo Branch Railroad Grade and the Los Angeles Aqueduct. Prehistoric and historic residential use is strongly exhibited as well. Evolution of the landscape during the period of human occupation in the area has led to the preservation of some sites that remain visible at the surface, while other sites have been buried or destroyed.

Project Impacts

The western portion of the resource study area contains a continuous distribution of prehistoric and historical archaeological resources. The density varies from moderate to high, and there are few areas lacking in recorded archaeological resources. Based on the 2014 analysis completed by Far Western Anthropological Research Group for the Section 4(f) Evaluation, the following results can be used compare potential site impacts for each project alternative:

- Alternative 1 has the potential to adversely affect 49 sites, seven of which have been determined eligible for the National Register of Historic Places.
- Alternative 2 has the potential to adversely affect 43 sites, eight of which have been determined eligible for the National Register of Historic Places.
- Alternative 2A has the potential to adversely affect 43 sites, four of which have been determined eligible for the National Register of Historic Places.
- Alternative 3 has the potential to adversely affect 47 sites, eight of which have been determined eligible for the National Register of Historic Places.
- Alternative 4 has the potential to adversely affect 50 sites, six of which have been determined eligible for the National Register of Historic Places.
- The Caltrans Preferred Alternative has the potential to adversely affect 48 sites, six of which have been determined eligible for the National Register of Historic Places.

The project could also impact undiscovered archaeological sites.

Past and Reasonable Foreseeable Actions

Two projects that planned in the area are Caltrans' Haiwee Clear Recovery Zone project and Crystal Geyser's water bottling facility project.

The Haiwee project is not expected to impact cultural resources. The Crystal Geyser Water Bottling Facility project (currently unknown when it will be built due to permitting issues) will affect several cultural resources that were studied as part of the Olancha/Cartago Four-Lane project. It is also likely the project could disrupt undiscovered archaeological sites. However, amendments to Crystal Geyser's

conditional use permit were recently denied by Inyo County, so the future of the project is unknown at this time. Caltrans Olancha/Cartago Roadway Improvement Project (built in 2006) did not result in impacts to cultural resources.

Cumulative Impacts

Although past projects have not contributed to cumulative impacts to cultural resources within the project area, future development and planned transportation projects would impact both known and undiscovered archaeological sites, resulting in cumulative impacts to archaeological resources.

Biological Resources

Resource Study Area

The resource study area for biological resources includes part of Owens Valley from the intersection of U.S. Highway 395 and State Route 136 on the north, the base of the Sierra Nevada on the west, U.S. Highway 395 south of Summit Creek, and U.S. Highway 395 on the east (see Figure 2.5).

Health and Historical Context

Historical development in the Owens Valley (roadways, freeways, railways, the Los Angeles Aqueduct) has compromised biological resource habitat over time. This includes habitat for species like the desert tortoise and Mohave ground squirrel.

Project Impacts

The Olancha/Cartago Four-Lane project will introduce roadway traffic to currently undeveloped land and therefore would result in impacts to biological resources, such as the desert tortoise, the Mohave ground squirrel, and the southwestern willow flycatcher. The Caltrans Preferred Alternative would affect 0.93 acre of southwestern willow flycatcher habitat, 292.90 acres of Mohave ground squirrel habitat, and 651.28 acres of desert tortoise habitat.

Past and Reasonable Foreseeable Actions

Two projects that are planned in the area are the Caltrans' Haiwee Clear Recovery Zone project and Crystal Geyser's Water Bottling Facility project (it is currently unknown when this project will be built due to permitting issues). These projects would contribute to the loss of Mohave ground squirrel habitat.

Cumulative Impacts

Future development and planned transportation projects in the project area would contribute to the loss of habitat for biological resources and therefore would result in cumulative impacts to biological resources. For example, the Caltrans Haiwee Clear Recovery Zone project and the Olancha/Cartago Four-Lane project cumulatively effects 441.84 acres of desert tortoise habitat.

Resources Not Substantially Affected by Cumulative Impacts

The following resources were studied and determined not to be in poor or declining health or result collectively to contribute to cumulatively considerable impacts. Impacts to the health, status, or condition of these resources as a result of past, present and reasonable foreseeable impacts would not occur as a result of this project.

- Land Use, Growth, and Community Impacts (see Sections 2.1.1-2.1.4)
- Farmland/Timberland (see Chapter 2, page 6)
- Wild and Scenic Rivers (see Chapter 2, page 6)
- Traffic and Transportation/Pedestrian and Bicycle Facilities (see Section 2.1.8)
- Wilderness Characteristics (2.1.9)
- Visual/Aesthetics (see Section 2.1.10)
- Hydrology and Floodplain (see Chapter 2, page 6)
- Water Quality (see Section 2.2.1)
- Geology/Soils/Seismic (see Section 2.2.2)
- Paleontology (see Section 2.2.3)
- Hazardous Waste (see Section 2.2.4)
- Air Quality (see Section 2.2.5)
- Noise (see Section 2.2.6)
- Natural Communities and Wetlands and other Waters (see Sections 2.3.1 and 2.3.2)

Avoidance, Minimization, and/or Mitigation Measures

All of the build alternatives will affect several historic and prehistoric sites, which will be mitigated using various methods including data recovery and reports, public outreach, and other measures determined in consultation with the Owens Valley tribal community. See Section 2.1.11, Cultural Resources, Avoidance, Minimization, and Mitigation section for further details.

Proposed mitigation measures like the wildlife undercrossings and right-of-way fencing would greatly reduce cumulative effects to sensitive species. Section 2.3.5 of this document discusses required avoidance, minimization, and mitigation measures proposed for the project. See Section 2.3.5, Threatened and Endangered Species, Avoidance, Minimization, and Mitigation section for further details.

The avoidance, minimization, and/or mitigation measures identified in each topical section in this document would serve to minimize cumulative impacts to the extent feasible. As each project is evaluated for environmental impacts, project-specific mitigation measures would apply, which would reduce the cumulative impact.

Chapter 3 California Environmental Quality Act Evaluation

3.1 Determining Significance under the California Environmental Quality Act

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

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

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

3.2 Effects of the Proposed Project

Chapter 2 discusses affected environments, potential impacts, and avoidance, minimization and/or mitigation measures. Chapter 3 discusses the impacts addressed in Chapter 2 that fall under California Environmental Quality Act jurisdiction.

3.2.1 No Effects

As discussed at the beginning of Chapter 2, the following environmental issues were considered, but no adverse impacts were identified.

- Coastal Zone
- Wild and Scenic Rivers
- Parks and Recreation
- Farmland/Timberlands
- Fisheries
- Hydrology and Floodplain

3.2.2 Less than Significant Effects of the Proposed Project

Caltrans determined the proposed project would have less than significant effects on the environmental resources listed below. Please refer to Chapter 2 for full discussions of the affected environments and environmental for environmental resources within the project area that are not discussed here.

- Noise Impacts under the California Environmental Quality Act

  When determining whether a noise impact is significant under the California Environmental Quality Act, comparison is made between the no-build noise level and the build noise level. The California Environmental Quality Act noise analysis is completely independent of the National Environmental Policy Act analysis discussed above, which is centered on noise abatement criteria. Under the California Environmental Quality Act, the assessment entails looking at the setting of the noise impact and then how large or perceptible any noise increase would be in the given area. Key considerations include the uniqueness of the setting, the sensitive nature of the noise receptors, the magnitude of the noise increase, the number of residences affected, and the absolute noise level.

  The greatest predicted noise level with the project will be 68 dBA, which is no greater than two people having a conversation 3 feet away or perhaps a conversation in a quiet living room.

  The project proposes to convert approximately 12.6 miles of the existing two-lane conventional highway into a four-lane expressway or partial conventional four-lane highway in Inyo County. The project is being constructed through a predominantly rural area with a low density of residential homes. There are 62 residences in Olancha at an average density of 8.5 homes per square mile. There are 49 residences in Cartago at an average density of 30.9 homes per square mile. Bishop, which is the only incorporated city in the Inyo County, has 1,867 residences at an average density of 1,066.7 homes per square mile. Because of the rural nature of the area, noise abatement for receptors R-9, R-

12, R-36, R-37 and R-45 is not reasonable or feasible. The Caltrans Preferred Alternative does not impact receptors R-9, R-12, R-36, R-37, or R-45.

Alternatives 2A, 3, 4, and the Caltrans Preferred Alternative would move traffic off the existing U.S. Highway 395, which would result in a substantial decrease in noise for some residences. Additionally, there are no sensitive receptors such as a park, school, or hospital in the area.

Alternative 3: Based on the protocol, construction of sound barriers would not be feasible or reasonable for the impacted receivers within the project limits because the construction of such barriers would interfere with access to driveways and local cross-streets that provide access to properties, and any breaks in the soundwall would render the wall less effective and therefore not reasonable. Also building such walls is not reasonable since the receivers are few and spread out along the project site, which makes them more expensive than the allowance for their construction. Furthermore, soundwalls would affect the visual resources in the area and would reflect noise, possibly affecting other residences.

Since no significant noise impact will occur as a result of the project, no abatement is proposed. The final decision on noise abatement will be made upon completion of the project design. Therefore, the physical characteristics of noise abatement described herein also may be subject to change.

If pertinent parameters change substantially during the final project design, the noise abatement decision may be changed or added to the final project design. A final decision to construct noise abatement will be made upon completion of the project design.

- Existing and Future Land Use
- Consistency with State, Regional and Local Plans and Programs
- Growth
- Community Character and Cohesion
- Environmental Justice
- Utilities and Emergency Services
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Wilderness Characteristics
- Visual/Aesthetics
- Geology, Soils, Seismicity, Topography
- Paleontology
- Hazardous Waste
- Air Quality
- Biological Resources—Natural Communities

- Invasive Species
- Cumulative Impacts

3.2.3 Significant Environmental Effects of the Proposed Project

Caltrans determined, with minimization and mitigation measures, the proposed project would have less than significant effects on the environmental resources listed below. Please refer to Chapter 2 for full discussions of the affected environments, environmental consequences and avoidance, and minimization and/or mitigation measures for environmental resources within the project area.

- Relocation Impacts
- Water Quality and Storm Water Runoff
- Biological Resources—Wetlands and Other Waters of the U.S.
- Biological Resources—Plant Species
- Biological Resources—Animal Communities
- Biological Resources—Threatened or Endangered Species

3.2.4 Unavoidable Significant Environmental Effects

Section 15126.2(b) of the California Environmental Quality Act Guidelines requires that an environmental impact report discuss significant impacts. When such impacts cannot be reduced to a less than significant level, the environmental impact report must describe their implications and the reasons why the project is being proposed in spite of the impacts.

- Cultural Resources

  A Finding of Adverse Effects was completed for the project in March of 2014. The nature of adverse effects would include the physical destruction of or damage to all or parts of properties. The effects will be the direct result of construction activity ranging from surface scraping/preparation throughout the Area of Potential Effects to deep cuts that have the potential to completely eliminate a property. Where the expressway will be built above grade, properties may be subject to burial under fill; however, even in these situations, extensive surface scraping and ground preparation is expected. Therefore, properties in the footprint of the project would potentially have at least some of their data destroyed.

  To resolve the adverse effects to cultural resources, Caltrans, on behalf of the Federal Highway Administration, will develop and implement a Historic Properties Treatment Plan per the project-specific Programmatic Agreement among the Federal Highway Administration, the Bureau of Land Management, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation. Cultural resources that can be avoided during construction will be designated as environmentally sensitive areas. An

Environmentally Sensitive Area Action Plan will be implemented to protect eligible sites from construction impacts associated with this project. Any sites discovered during construction would be addressed under the stipulations of the Programmatic Agreement and the Historic Properties Treatment Plan. See Section 2.1.11, Cultural Resources, for more details.

Because of the complexity of the project's cultural resources inventory and the need to further consult with the Owens Valley tribal community, Caltrans is reevaluating the National Register of Historic Places status of the archaeological sites and the resolution of any effects to eligible sites as outlined in the Programmatic Agreement and the Historic Properties Treatment Plan. Caltrans' design staff continue to work diligently with cultural resources staff, agencies, the Owens Valley tribal community, and any other stakeholders to ensure every effort has been made to avoid known sites. Caltrans anticipates that all impacts will be mitigated at a less than significant level.

3.2.5 Climate Change

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

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

In the United States, the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).[3]

[3] http://climatechange.transportation.org/ghg_mitigation/

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.[4]

Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

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

Executive Order (EO) S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

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

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the CARB to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" that integrates

[4] http://www.fhwa.dot.gov/environment/climate_change/mitigation/

transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the U.S. Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level GHG analysis. [5] FHWA supports the approach that 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 assist in 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 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.

The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance.*

Executive Order 13514 (October 5, 2009): This order is focused on reducing GHG internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

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

[5] To date, no national standards have been established regarding mobile source GHGs, nor has U.S. EPA established any ambient standards, criteria or thresholds for GHGs resulting from mobile sources.

December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and U.S. EPA's assessment of the scientific evidence that form the basis for U.S. EPA's regulatory actions. U.S. EPA in conjunction with National Highway Traffic Safety Administration issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.[6]

The U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations.

The final combined standards that made 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. The standards implemented by this program are expected to reduce GHG 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).

On August 28, 2012, U.S. EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is projected to save approximately four billion barrels of oil and two billion metric tons of GHG emissions.

The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

Project Analysis

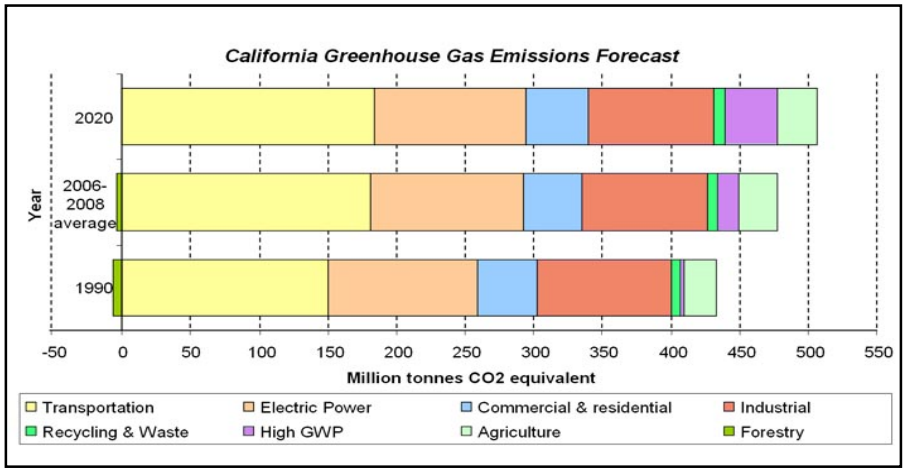
An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other

[6] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

sources of GHG.[7] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. 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.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the CARB released the GHG inventory for California (forecast last updated: October 28, 2010). See Figure 2.6. The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.



Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Figure 2.6 California Greenhouse Gas Forecast

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

One of the main strategies in Caltrans' Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see Figure 2.7). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO_2, may be reduced.

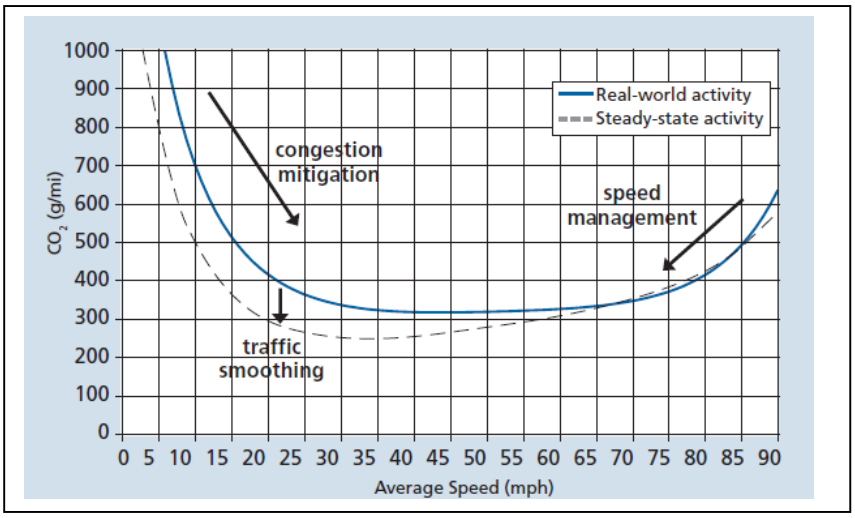


Figure 2.7 Possible Effect of Traffic Operation Strategies in Reducing On Road CO2 Emissions

The proposed project, included in the Inyo County Regional Transportation Plan and the 2001 Inyo County General Plan, would improve safety, traffic operations, and reduce delay under the build alternatives compared to the No-Build Alternative. These improvements are expected to result from the project's goal of increasing the number of lanes of the project segment of U.S. Highway 395 from two to four lanes.

The safety improvements and the improved level of service are expected to reduce the incidence of stop-and-go traffic, thereby also reducing the number of accidents within the project area. New pavement surfaces would also reduce the level of vehicle rolling resistance, improving overall vehicle efficiencies. The improved level of service will also reduce GHG emissions.

Using CT-EMFAC 2011 and the projected vehicle miles traveled, the CO_2 emissions presented in Table 2-30 are estimated to increase from 2012 (existing) when comparing to the future build (2019, 2029, 2039) conditions.

According to EMFAC modeling results, both the build alternatives and No-Build Alternative would result in more GHGs than the existing conditions. This is primarily because of EMFAC's focus on predicted traffic volumes and speeds. Subsequently,

emissions estimated by EMFAC would increase with the addition of more lanes and vehicles the project adds to the highway.

Table 2-30 Estimated Carbon Dioxide Emissions in Metric Tons Per Day

Year			2012		2019		2029		2039	
Alternative	**Length**	**Speed**	**CO_2-**	**CO2 – Pavley[1]-**	**CO_2**	**CO_2 – Pavley-**	**CO_2**	**CO_2 – Pavley-**	**CO_2**	**CO_2 – Pavley-**
Existing	11.06	55	29.86	32.04	X	X	X	X	X	X
No Build	11.06	55	X	X	32.21	26.93	34.36	26.72	36.81	28.43
1	11.06	55	X	X	32.21	26.93	34.36	26.72	36.81	28.43
2	11.08	65	X	X	36.11	29.96	38.41	29.50	41.06	31.29
2A	11.39	65	X	X	37.12	30.80	39.48	30.33	42.20	32.17
3	11.27	65	X	X	36.73	30.48	39.07	30.01	41.76	32.57
4	12.57	65	X	X	40.97	33.99	43.57	33.47	46.57	35.50
CT Preferred	12.14	65	X	X	39.57	32.83	42.08	32.32	44.99	34.29

Source: Caltrans Central Region Environmental Engineering using CT-EMFAC 2011 and Caltrans District 9 Traffic Calculations. Vehicle Miles Traveled (VMT) is derived by multiplying Annual Daily Traffic (AADT) times Length of Alternative.

[1] Pavley refers to the impacts of recently adopted diesel regulations including the Truck and Bus Rule and other diesel truck fleet rules: the Pavley Clean Car Standard, and the Low Carbon Fuel Standard.

Note that these numbers are not necessarily an accurate reflection of what the true CO_2 emissions will be because CO_2 emissions are dependent 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_2 emissions, not full fuel cycle emissions; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel component(s), rate of acceleration, and the aerodynamics and efficiency of the vehicles.

Construction Emissions

GHG for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result 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.

Because of the rural location of the project, Caltrans decided to study the possibility of including a material borrow site within the project area. A 49-acre expanded right-of-way would be made available to contractors as an optional source of material for production of aggregates for road base, asphalt concrete, rock slope protection, and embankment. The expanded right-of-way is bisected by Alternative 4 and next to the

Caltrans Preferred Alternative, but would be available for all build alternatives. It is located approximately equidistant from the beginning and end of the project, and would minimize haul distances, costs, and disruption to local traffic patterns. The material source is expected to yield an estimated 765,000 tons of in-situ material. This would satisfy the aggregate needs for any of the build alternatives. Equipment to be set up in the site for production of road base and asphalt concrete would include a portable hot plant, mixing drums, and rock crushers.

Use of the expanded right-of-way as a source of materials could result in an estimated $7 million in savings. The savings would come mostly from reduced production costs, trucking costs, and sales tax. If roadway materials are not produced onsite, the road base and asphalt concrete would likely be hauled from Ridgecrest, Bishop, or farther.

Additional benefits of providing an expanded right-of-way for material production would include:

- Reduced trucking related greenhouse gasses by an estimated 2,550 tons
- Reduced trucking related diesel fuel consumption by an estimated 230,000 gallons
- Enhanced safety and reduced wear and tear on the existing highway by reduced truck hauling distance of nearly 1.4 million miles
- Reduced project cost due to more competitive bidding on aggregate base and asphalt concrete
- Shorter the construction period due to higher production rates

The extended right-of-way was included in the study area for this project and impacts from the possible operation of the material area are addressed in Chapters 2 and 3. Any disturbed areas would be restored by contour grading, replacing topsoil and revegetating the site with native plant or seeds. The material area would then be closed after the project is complete and a decision will be made determining if Caltrans retains or relinquishes the site.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

California Environmental Quality Act Conclusion

As discussed above, both the future with project and future no build show increases in CO_2 emissions over the existing levels and future build CO_2 emissions are lower than the future no build emissions. Despite these estimated reductions, there are also limitations with EMFAC and with assessing what a given CO_2 emissions increase means for climate change. Therefore, 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 determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Caltrans continues to be involved on the Governor's Climate Action Team as the CARB works to implement EO S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in GHG emissions, while accommodating growth in population and the economy. The plan relies on a complete systems approach to attain CO_2 reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 2.8: Mobility Pyramid.

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 works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. EPA and CARB.

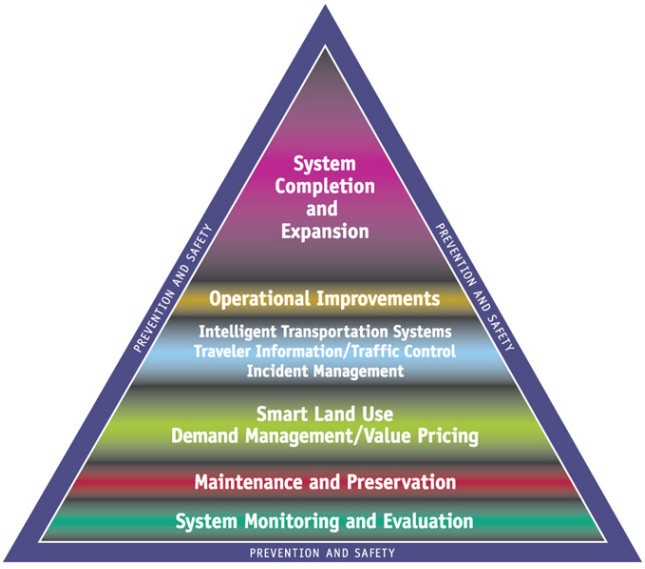


Figure 2.8 Mobility Pyramid

Caltrans is also working toward enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under SB 375 (Steinberg 2008), SB 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs.

Table 2-31 summarizes Caltrans' and statewide efforts that the Department is implementing to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

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

Table 2-31 Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 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	0.007	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 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
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 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not estimated	Not estimated
Total					2.72	18.18

Caltrans Activities to Address Climate Change (April 2013)[8] provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce GHG emissions resulting from agency operations.

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

1. Lighting—Using energy-efficient lighting, such as LED traffic signals, reduces the electricity needed to adequately illuminate the project. The project may install lighting at intersections.

2. Restricting idling time— According to the Caltrans' Standard Specifications, the contractor must comply with all local Air Pollution Control District's rules, ordinances, and regulations for air quality restrictions. Limiting the amount of time trucks and equipment are allowed to idle reduces GHG emissions from construction projects.

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, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011[9], outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

[8] http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml

[9] http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation

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 Arnold Schwarzenegger signed EO S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state, and federal public and private entities to develop. The California Climate Adaptation Strategy (Dec 2009)[10], which summarizes the best known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promoteresiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report[11] to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.

- The range of uncertainty in selected sea level rise projections.

[10] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF
[11] *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.

- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.

- A discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academy's Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are 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. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

All projects that have filed a Notice of Preparation as of the date of EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project is outside the coastal zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

Executive Order S-13-08 also 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. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans 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 effects, Caltrans 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, Caltrans will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

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. The Department is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

3.3 Mitigation Measures for Significant Impacts under the California Environmental Quality Act

The information in this section is repeated in Appendix E, Minimization and/or Mitigation Summary, as well as the proposed minimization and/or mitigation measures for impacts that are considered less than significant with mitigation.

The following are proposed mitigation measures for potentially significant impacts for cultural resources under CEQA.

Caltrans' design staff will continue to work diligently with cultural resources staff and outside agencies and stakeholders to ensure every effort has been made to avoid known sites. All of the proposed project's build alternatives would also incorporate the following measures to minimize harm to cultural resources:

- Cultural resources that can be avoided during construction will be designated as environmentally sensitive areas. An Environmentally Sensitive Area Action Plan will be implemented to protect eligible sites from construction impacts associated with this project.

- A project-specific Programmatic Agreement among the Federal Highway Administration, the Bureau of Land Management, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation was signed in July 2014. The project-specific Programmatic Agreement stipulates that Caltrans, on behalf of the Federal Highway Administration, will develop and implement a Historic Properties Treatment Plan that will complete the identification effort in the Area of Potential Effects, evaluate the potential properties for the National Register of Historic Places, and provide a resolution of adverse effects to historic properties.

- Specific aspects addressed will include, but will not be limited to (see Appendix K for a complete copy of the Programmatic Agreement), the following:

    - Frequent consultation with Tribes and other consulting parties;
    - Implementation of a tribal monitoring plan;
    - Methods to eliminate to the extent possible the overlap of site boundaries;
    - Implementation of a geomorphologic study to identify sensitivity for buried resources;
    - Consultation with the State Historic Preservation Officer concerning the National Register of Historic Places eligibility of potential properties;
    - Methods to identify and protect properties that can reasonably be preserved in conjunction with development of project design details;

  - A research design or plan for the mitigation, analysis and sharing of study results for properties which cannot be avoided, including integration of those results into a synthesis that can inform ongoing management of cultural resources in the project area and surrounding region to address cumulative and indirect effects and public outreach efforts.

- If additional cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission, who would then notify the Most Likely Descendent. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable. Federal agencies, such as the U.S. Bureau of Land Management, have additional, specific responsibilities under 43 Code of Federal Regulations 10 that must be met in the event human remains are discovered on land under their jurisdiction.

Chapter 4 Comments and Coordination

Early and continuing coordination with the general public, appropriate public agencies and Native American tribes is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for 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 Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

As part of the scoping process, Caltrans environmental technical staff gathered information for the project through record searches and field surveys. Based on these early results and observations, a Preliminary Environmental Analysis Report was completed in November 1998. The report presented an overview of potential environmental issues and constraints that might be encountered if the proposed project were to move forward with construction.

The draft environmental document (Initial Study with Proposed Mitigated Negative Declaration and Environmental Assessment) was circulated for public review from September 2, 2010 to October 22, 2010. A Public Hearing was held on September 22, 2010. Written comments received on the draft document were collected, and they will be responded to in the final environmental document.

After analyzing the impacts of the project and the comments received, Caltrans decided that impacts to cultural resources could not be mitigated below significance. Therefore, the CEQA document level was elevated and this Draft Environmental Impact Report was prepared. The section below describes the coordination efforts Caltrans and FHWA have carried out since the year 2000, when the idea of the project was first introduced. The section also discusses the circulation of the previous draft environmental document.

Public Participation

2000 – 2008: Caltrans has held three public information meetings for the Olancha/Cartago project since its inception in 1999. The first meeting occurred on April 10, 2000, and a total of 57 people attended the meeting. The second was held on July 25, 2002, with a total of 52 attendees. The third meeting took place on December 3, 2008 and a total of 81 people attended. All of these meetings were held at the Olancha School located at 123 School Road in Olancha from 4:00 p.m. to 7:00 p.m. Each meeting was publicly noticed in *The Inyo Register*. The purpose of the meetings was to provide the public and interested parties with an overview of the project and gain input on the five proposed build alternatives.

The participation in these meetings has been generally positive and the comments received from these meetings have been consistent. The majority of commenters

prefer improving the existing alignment (Alternative 1) because they feel it will provide the greatest benefit to the communities of Olancha and Cartago. They feel that the other alternatives that bypass the communities would be a detriment to the communities because they could indirectly impact the few existing businesses remaining along U.S. Highway 395. Other common requests include reducing vehicle speeds, providing turn lanes and other improvements that would improve access along the highway and ensure that the businesses along the highway remain in operation, not restricting access to the mountains to the west, and the desire to protect the cottonwood trees along the existing route.

March – June, 2010: To obtain input from regional and interregional travelers on the proposed project, Caltrans developed a survey pamphlet to solicit their comments. The surveys were advertised in the local media and pamphlets were distributed to a variety of local establishments, such as visitor centers, chambers of commerce, and local businesses. Pamphlets were also distributed at several significant regional events, such as the Sierra Fishing Opener and Mule Days. Caltrans was also allowed to distribute the pamphlets electronically to nearly 25,000 members of the Mammoth Mountain Ski Resort e-mail contact list.

As a result of the wide distribution, Caltrans received over 7,000 responses to the survey and gained valuable input on the project, especially from interregional travelers. Of the respondents that noted where they resided, 27 were from the Olancha area, 105 from Bishop, 327 were from Mammoth, and 4,700 were from southern California. Results of the survey showed that 52 % of respondents preferred a divided freeway around the towns of Olancha and Cartago, 32 % felt a divided freeway through the towns was preferred, and 16 % preferred an undivided highway.

September – October 2010: The Initial Study with Proposed Negative Declaration and Environmental Assessment were circulated for public review from September 2, 2010 to October 2, 2010. During this time, it became clear that the documents were not received in a timely manner. As a result, the circulation period was extended to October 22, 2010.

A public hearing was held on September 22, 2010 (during the circulation period for the Initial Study/Environmental Assessment) at the Olancha School located at 123 School Road in Olancha, from 4:00 p.m. to 7:00 p.m. Approximately 86 people attended. The purpose of the meeting was to obtain comments on the Initial Study/Environmental Assessment.

Seventy-two comments were submitted from the public and various agencies during the circulation period or at the public hearing. Additionally, twelve individuals gave a verbal comment to the court reporter at the public hearing. Fifty-two of the comments included the individuals alternative preference: 31 liked Alternative 1; one liked Alternative 2A; and 14 preferred an alternative that went around Olancha and/or Cartago (Alternatives 3 and 4). Comments submitted at the public hearing and/or during the circulation period, along with responses from Caltrans, will be included in the final environmental document.

In addition to the comments, two petitions were received during the circulation period. The first petition was dated September 5, 2010 and had 214 signatures. The letter being signed was regarding a "public meeting being held on Wednesday [September 8, 2010] at 9:00 am." The letter stated that the time of the meeting was "quite convenient for Caltrans as most of their options are strongly opposed by the locals" who would be working at the time of the meeting. The meeting in question was an Inyo County Local Transportation Commission special meeting. The second petition was dated August/September 2010 and had 1,064 signatures. Caltrans received this petition at an Inyo County Board of Supervisors meeting on September 28, 2010 from the owners of the Ranch House Café, Herman and Claudine Meylemans. The petition was titled *Petition Against Olancha/Cartago Bypass!*

Notice of Preparation

A Notice of Preparation of an Environmental Impact Report was sent to the State Clearinghouse on December 5, 2014. It was also mailed out to interested agencies, federal, state, and local officials, Native American groups, residences, and people who expressed interest in project. The Notice of Preparation informed the recipients of Caltrans' intent to prepare an Environmental Impact Report and provide the project description, alternatives under consideration, and the environmental resources the project has the potential to affect. Recipients were alerted to the state law requiring submittal of their comments to Caltrans no later than 30 days after receipt of the Notice of Preparation. Please see Chapter 6 for the distribution list.

In response to the Notice of Preparation, written comments were received from the following: Joanne Seago, the Law Office of Robert C. Hawkins (representing Common Sense Inyo County), Andre Long, Esquire, John E. Baxter, John and Betty Biros, the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, Scott Palamar, the Lahontan Regional Water Quality Control Board, Matt Kingsley, Chair, Inyo County Board of Supervisors, Jael Hoffman, Lawrence Kraus, Randall and Beth Porter, Paul Lamos (Rio Tinto Minerals), Janie Bradley, Marleen Meaney, Sam and Toshiko Masumoto, and Susan Patton.

Biology

June 2003: An official list of federally- endangered and threatened wildlife and plant species that may be affected by the proposed project was obtained from the U.S. Fish and Wildlife Service (USFWS), Ventura Office. The list was also updated in March, 2010 and December, 2012.

August 2008: Caltrans consulted with Tom Stevenson of the California Department of Fish and Wildlife (CDFW) Bishop Office regarding the potential for Sierra Nevada bighorn sheep to be affected during proposed project activities. In an email dated August 14, 2008, Mr. Stevenson stated that after consulting with his colleagues, they determined the area is not particularly sensitive and they would not expect a high level of use by bighorn sheep.

Caltrans consulted with Rocky Thompson, a CDFW biologist, regarding the migration of the Monache deer herd and providing deer crossings with Alternative 4.

Informal consultation was held with CDFW personnel Darryl Wong, Denyse Racine, and Adrienne Disbrow of Bishop and John Gustafson and Ronald Schlorff of Sacramento. These discussions included ratios for mitigation for Mohave ground squirrel, Swainson's hawk sightings and potential nest locations as well as survey protocol for desert tortoise.

March 24, 2009: A field review was conducted with U.S. Army Corps of Engineers liaison Theresa Stevens to review the project area.

December 2, 2009: The Jurisdictional Delineation Report for the Olancha/Cartago project was submitted to the U.S. Army Corps of Engineers for a jurisdictional determination.

May 18, 2010: The U.S. Army Corps of Engineers made a jurisdictional determination on wetlands and other waters of the U.S. The determination was consistent with the Jurisdictional Delineation Report submitted to the Corps.

November 2012: Caltrans initiated informal consultation with the USFWS to discuss avoidance and minimization measures for the federally- and state-threatened desert tortoise. Informal consultation was initiated with regard to a pre-project geotechnical bore, originally scheduled for December, 2012.

January 2013: Caltrans biologist contacted the USFWS and the CDFW to discuss the potential for fish habitat to occur in the project area for various species. Additional information was received via email and over the phone. It was confirmed that there was not any suitable habitat within the project site.

January 2013: Caltrans biologist contacted the CDFW regarding the possibility for presence of the southwestern willow flycatcher along Olancha Creek within the project boundaries. It was agreed that the habitat along Olancha Creek is unlikely to support nesting southwestern willow flycatchers, but that it is possible the species may use the area for foraging and/or migratory activities. CDFW recommended that any pre-construction surveys for the flycatcher be timed appropriately so as to be considered "focused" surveys, which would prevent Caltrans from having to mitigate unnecessarily if birds are not present. CDFW also recommended that, if possible, construction be timed during the non-breeding season to avoid any potential impacts to the birds. Caltrans was reminded that a 2080.1 Incidental Take Permit was required. Also, CDFW recommended that Caltrans use the CDFW-approved mitigation bank in Kern County.

January 2013: CDFW contacted Caltrans' biology confirming that the Sierra Nevada yellow-legged frog was not present in the project area.

January 30, 2013: Caltrans biology contact the USFWS to discuss the potential for the least Bell's vireo along Olancha Creek. The USFWS does not have recent information to indicate presence or absence. It was suggested to contact CDFW or a

local bird watching group to obtain more recent information on the potential presence of this species.

January 31, 2013: Caltrans biology contacted the USFWS about inferring presence for the southwestern willow flycatcher. The USFWS suggested that Caltrans decide what measures would be implemented to minimize and avoid take of the flycatcher and that when mitigation is being determined, ongoing impacts to the birds (resulting from continuous traffic noise) should be considered and emphasized the importance of providing avoidance measures during construction for any nesting migratory birds. Additionally, the USFWS mentioned that the necessity for considering both direct and indirect impacts to the desert tortoise and recommended that Caltrans provide undercrossings and permanent fencing as minimization and mitigation measures.

January and February 2013: Caltrans biology contacted numerous birders, biologists, and resource specialists to discuss the potential for the least Bell's vireo to be present on, or near the project site. The results from numerous sources suggested that the least Bell's vireo was not present in the project site.

February 15, 2013: Caltrans biology verified via phone with CDFW biologist that there are no concerns over the project with respect to the Sierra Nevada bighorn sheep.

February 20, 2013: Caltrans biology contacted CDFW to determine if Caltrans were to implement avoidance and minimization measures for desert tortoise (undercrossings at one-mile intervals, permanent tortoise fencing and cattle guards with tortoise escape ramps at access roads), to protect the existing population within the project site, if CDFW would be willing to negotiate on the ratios that would be required for off-site land replacement used to mitigate for permanent and temporary impacts to the on-site habitat. Caltrans would be inferring migratory presence for the southwestern willow flycatcher and that Caltrans is making the determination that the proposed project "may affect, but is not likely to adversely affect" the species. Caltrans also included that the proposed mitigation for impacts to migratory habitat would be accomplished through 2:1 and 1:1 replacement ratios for permanent and temporary impacts to habitat, respectively. It was also mentioned that Caltrans was planning to install some native tree and shrub plantings along the outer edge of the Caltrans right-of-way, at the Olancha Creek crossing, to provide a visual and audio buffer to the species, and other wildlife, to off-set cumulative impacts resulting from the presence of traffic. Lastly, it was mentioned that Caltrans planned to have an on-site monitor during construction if any southwestern willow flycatcher' are observed during the pre-construction surveys. On February 25, 2013, CDFW responded that they do not have a policy for mitigation "credit" with regard to land replacement ratios. CDFW indicated that mitigation ratios and avoidance/minimization measures are typically worked out during the processing of the application for an Incidental Take Permit, and that to try to negotiate those details at this time was contrary to their process.

February 25, 2013: Ms. Nordin provided specifications and photographs of a tortoise-modified cattle guard via email. Ms. Nordin relayed that it is advisable to locate tortoise undercrossings in washes as much as possible. Previously Caltrans inquired about the possibility of only installing permanent tortoise fencing in areas where recent tortoise occurrences are concentrated (for example, the area on the north side of Olancha Creek and the area just north of the southern project terminus). Ms. Nordin responded to this inquiry, commenting that she was not able to determine if the permanent tortoise fencing could be justifiably eliminated from the northern portions of the project site (based on a lack of recent tortoise occurrence data) at this time and that she would need to review the tortoise report results in their entirety prior to making that decision.

February 25, 2013: Caltrans biology contacted USFWS to let them know that Caltrans was proposing 2:1 and 1:1 off-site land replacement ratios for permanent and temporary impacts to migratory habitat, respectively, as well as the proposed installation of native tree and shrub plantings within the outer extent of the Caltrans right-of-way at the Olancha Creek crossing. USFWS responded that the proposed ratios for off-site land replacement, and the on-site native plantings sounded like a great approach to mitigating for the on-site migratory habitat. The USFWS suggested that Caltrans also include some language (in the mitigation proposal) that would provide for the permanent protection/conservation of the on-site native plantings. Lastly, the USFWS indicated that he was not aware of any mitigation banks for the southwestern willow flycatcher in Inyo County.

March 6, 2013: The CDFW contacted Caltrans to say that although the installation of tortoise undercrossings, permanent fencing and cattle guards may be of benefit to the on-site population of tortoise, at this time, CDFW has no way to accept avoidance/minimization measures towards the off-site compensatory mitigation requirement. CDFW further mentioned that there is no policy to reduce land replacement ratios and that policy requires projects to be fully mitigated. The CDFW also suggested that Caltrans not be premature by including overly detailed minimization/avoidance measures in the Biological Assessment and that it might be more appropriate to specify those details during the Incidental Take Permit application process. It was further suggested that down the road there could be different CDFW policies that could allow for negotiation of land replacement ratios, which may apply to the current project depending on the timing of its construction.

June 10, 2013: Formal consultation with the USFWS was initiated by FHWA through the submission of a Biological Assessment which specifically addressed the federally- and state-threatened desert tortoise and its presence within the proposed project site, as well as the federally endangered southwestern willow flycatcher and the least Bell's vireo.

July 23, 2013: The USFWS responded to FHWA's request to initiate formal consultation. The letter deemed the application was incomplete and outlined specific questions and requests for additional information.

September 23, 2013: FHWA submitted a response letter to the USFWS answering their questions and provided additional information on the project.

October 10, 2013: Caltrans biologist clarified details of the proposed project and participated in a teleconference with the USFWS.

November 19, 2013: FHWA submitted a revised Biological Assessment and the application was deemed complete, thus starting the 135-day review period, within which the USFWS would issue a Biological Opinion for the proposed project.

February 6, 2014: Caltrans biologists requested that formal consultation with the USFWS be put on hold so additional research could be completed on the avoidance, minimization, and mitigation measures proposed in the November 2013 Biological Assessment.

March 4, 2014: The USFWS received a letter from Caltrans (dated February 27, 2014) requesting that formal consultation continue so a Biological Opinion could be prepared for the proposed project.

May 28, 2014: The USFWS provided a draft Biological Opinion to Caltrans. A Caltrans biologist provided comments to the USFWS on May 29, 2014.

June 13, 2014: The USFWS issued the Biological Opinion for the project (see Appendix J).

Cultural

April 7, 2004: Caltrans submitted the Historic Property Survey Report to the State Historic Preservation Officer (SHPO) for review and concurrence.

May 24, 2004: The SHPO concurred with Caltrans' determinations on the National Register of Historic Places (NRHP) eligibility of several cultural resources in the proposed project's Area of Potential Effects.

January 20, 2010: Caltrans submitted the Supplemental Historic Property Survey Report to the SHPO for review and concurrence.

March 23, 2010: The SHPO concurred with Caltrans' determinations on the NRHP eligibility of several cultural resources in the proposed project's Area of Potential Effects identified in the Supplemental Historic Property Survey Report.

February 25, 2011, March 24, 2011, and April 11, 2011: Bureau of Land Management (BLM) attended Caltrans Project Development Team Meetings (PDTs) to discuss the Caltrans Preferred Alternative recommendation.

February 28, 2012: A teleconference was held between Caltrans Cultural staff, BLM, and Pacific Legacy to discuss Phase II work. A new meeting was scheduled for March 5, 2012.

March 5, 2012: A meeting was held between staff from Caltrans (Cultural and Generalist), BLM, and FHWA to further discuss BLM concerns. Section 106 lead, permit issues, and tribal consultation were some issues brought up.

March 12, 2012: Follow up teleconference between Caltrans Cultural staff, BLM, and Pacific Legacy was held.

April 10, 2012: Pacific Legacy delivered documents requested by BLM on this day. A phone call confirming receipt of documentation was received by Caltrans Cultural staff from BLM on April 12, 2012.

April 18, 2012: A teleconference was held between Caltrans Cultural staff and BLM discussing Phase II procedures and permit processing.

July 11, 2012: A meeting was held between BLM and Caltrans Cultural staff discussing permit issues.

July 31, 2012: A field review was held with BLM and Caltrans Cultural staff to visit sites and discuss a plan of action.

July 10, 2013: Caltrans submitted the 2013 Archaeological Survey Report to the SHPO to provide an update regarding the ongoing consultation for the project.

December 2013: An agreement between Caltrans, FHWA, and BLM was signed to clarify roles and responsibilities of agencies for this project.

April 11, 2014: Caltrans submitted the Finding of Adverse Effect to the SHPO for review and concurrence.

May 19, 2014: The SHPO concurred with Caltrans' determination of a Finding of Adverse Effect for the project.

July 25, 2014: The project-specific Programmatic Agreement between the FHWA, BLM, the California SHPO, and the Advisory Council on Historic Preservation was signed (see Appendix K).

November 13, 2014: Caltrans and the Advisory Council on Historic Preservation conducted a conference call to bring the Advisory Council representative up to speed on the history and current status of the project.

March 2013 – Current: Caltrans and FHWA are currently meeting monthly with BLM to discuss environmental concerns, the need for a transportation easement from the BLM, and other topics as they came up.

Native American Tribal Consultation

Caltrans contacted the Native American Heritage Commission to identify any local Native American groups and individuals who might have interest in the project. The commission responded by providing a list of six Native American individuals who

may have concerns about the proposed project or have special knowledge of the cultural resources in the project vicinity. On numerous occasions, Caltrans archaeologists met and corresponded with members and elders of tribes in the Owens Valley area.

June – August 2000: The Caltrans District Native American Coordinator contacted the Lone Pine Paiute-Shoshone Tribe chairperson to notify them of the proposed project and planned archaeological survey of the project area. The chairperson was asked to provide any special concerns.

January 31, 2001: A request was sent to the chairperson of the Lone Pine Paiute-Shoshone Reservation to appoint an Archaeological Monitor for Phase 2 archaeological excavations.

November 26, 2001: A request was sent to the chairperson of the Lone Pine Paiute-Shoshone Reservation to review the Phase 2 Research Design.

January 30, 2002: An Archaeological Survey Report (January 2002) was mailed to the Lone Pine Paiute-Shoshone Reservation Tribal Office and Archaeological Monitor for review.

February 5, 2002: Caltrans staff gave a presentation on the project and upcoming Phase 2 archaeological excavations to the Lone Pine Paiute-Shoshone Reservation tribal officers and BLM.

March 8, 2002: Caltrans staff gave a presentation to the Lone Pine Paiute-Shoshone Reservation tribal members. The presentation included a summary of the highway project, project history, archaeological studies, the ethno-historic study, and dates for the upcoming Phase 2 archaeological excavations (March – June 2002).

March 2002 – July 2003: Interviews were conducted with Native Americans living in the project area and tribal representatives from the Lone Pine Paiute-Shoshone Reservation. Information from the interviews and information from other research were combined to prepare the Olancha/Cartago Native American History. This effort was conducted under contract with Caltrans by Shelly Davis-King.

March 28, 2005: A progress report was submitted to the chairperson of the Lone Pine Paiute-Shoshone Reservation to provide updates on the status of the project. Copies of the following reports were also sent: *Lacustrine Lifestyles Along Owens Lake: NRHP Evaluation of 15 Prehistoric Sites for the Olancha/Cartago Four-Lane Project, U.S. Route 395, Inyo County, California* by Brian Byrd and Micah Hale; *Participants and Observers: Perspectives on Historic Native American Information From Independence to Haiwee Reservoir in Owens Valley for the Olancha/Cartago Four-Lane Project, U.S. Route 395, Inyo County, California* by Shelly Davis-King.

May 2, 2007: The Caltrans District Native American Coordinator contacted the Lone Pine Paiute-Shoshone Tribe chairperson, Ms. Marjianne Yonge, and Tribe member, Mr. Terald Goodwin, to notify them of the proposed study to identify the Native

American cemetery boundaries using forensic dogs. Their attendance during the study was requested, as well as any further knowledge they could provide regarding the area.

May 11, 2007 - May 12, 2007: Caltrans implemented a study using forensic dogs from the Institute for Canine Forensics to identify boundaries of a Native American cemetery located within the project area. Mr. Terald Goodwin, Lone Pine Paiute-Shoshone Tribal member, were onsite May 12, 2007.

January 27, 2009: The Caltrans District Native American Coordinator contacted the Native American Heritage Commission and the Lone Pine Paiute-Shoshone Tribe chairperson to notify them regarding potential human remains identified.

October 15, 2009: A Draft Archaeological Survey Report for the All-West Alternative was mailed to the Lone Pine Paiute-Shoshone Tribal Office for review.

March 16, 2010: A Final Archaeological Survey Report for the All-West Alternative was mailed to the Lone Pine Paiute-Shoshone Tribal Office.

September 1, 2011: The Caltrans District Native American Coordinator contacted the Lone Pine Paiute-Shoshone Tribe chairperson, Mr. Joseph, to notify him of the upcoming Phase II evaluation program for the Caltrans Preferred Alternative and request Tribal monitors during testing. Caltrans received a letter with the monitors' contact information on September 20, 2011.

December 20, 2011: An Archaeological Evaluation Proposal was mailed to the Lone Pine Paiute-Shoshone Reservation Tribal Office for review.

October 31, 2012: The Caltrans District Native American Coordinator met with the Lone Pine Paiute-Shoshone Tribe cultural resources coordinator, Ms. Kathy Bancroft, and discussed the status of the proposed Phase II evaluation program.

December 4, 2012: The Caltrans District Native American Coordinator contacted the Timbisha Tribe chairperson, Mr. George Gholson, and Tribal Historic Preservation Officer, Ross Dewey, to notify them of the proposed project and planned archaeological studies within the project area.

December 12, 2012: Caltrans met with the Lone Pine Paiute-Shoshone Reservation cultural committee to introduce new staff and discuss updates to the project.

June 20, 2013: The Caltrans District Native American Coordinator contacted the Kawaiisu Tribe chairperson, David Robison, and the Big Pine Tribe of Owens Valley chairperson, Virgil Moose, and Tribal Historic Preservation Officer, Bill Helmer, to notify them of the proposed project and planned archaeological studies within the project area.

October 18, 2013: The Archaeological Survey Report for the Caltrans Preferred Alternative was mailed to the Big Pine Paiute Tribe of Owens Valley, Bishop Paiute

Tribe, Independence Paiute Tribe, Lone Pine Paiute-Shoshone Tribe, and Timbisha Tribe for review.

January 10, 2014: The Caltrans District Native American Coordinator contacted the Kawaiisu Tribal representatives Cathy Paradise, David Robinson, Harold Williams, June Walker-Price, Patricia Henry, Ron Wermuth, and Robert Gomez to notify them of the proposed project and planned archaeological studies within the project area.

February 11, 2014: Caltrans met with representatives of the Big Pine Paiute Tribe of the Owens Valley, the Timbisha Tribe, the Lone Pine Paiute-Shoshone Tribe, the Bishop Paiute Tribe, and the Fort Independent Paiute Tribe to update them on the status of the project, including an update of the Section 106 compliance efforts and the draft Finding of Adverse Effect. Representatives from the BLM and FHWA were also in attendance.

March 2, 2014: A Draft Finding of Adverse Effect was mailed to the Big Pine Paiute Tribe of Owens Valley, Bishop Paiute Tribe, Independence Paiute Tribe, Lone Pine Paiute-Shoshone Tribe, and Timbisha Tribe for review.

March 17, 2014: Caltrans met with representatives of the Big Pine Paiute Tribe of the Owens Valley and Lone Pine Paiute-Shoshone Reservation to update them on the status of the project, including discussion of the draft Finding of Adverse Effect. Representatives from BLM and FHWA were also in attendance.

May 7, 2014: Caltrans held a field review with representatives from the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, and Bishop Paiute Tribe. Representatives from the BLM and the SHPO were also in attendance.

June 18, 2014: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Reservation, Big Pine Paiute Tribe of the Owens Valley, and Bishop Paiute Tribe, as well as staff from FHWA, the BLM, the California SHPO, and the Advisory Council on Historic Preservation to discuss details of the project-specific Programmatic Agreement. Far Western Anthropological Group, the consultant that will be preparing the Historic Properties Treatment Plan, also attended.

July 23, 2014: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, Timbisha Tribe, and Bishop Paiute Tribe, as well as staff from FHWA, BLM, the California SHPO, the Advisory Council on Historic Preservation, and Far Western Anthropological Group to discuss the Historic Properties Treatment Plan.

August 28, 2014: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, as well as staff from FHWA, BLM, the California SHPO, the Advisory Council on Historic Preservation, and Far Western Anthropological Group to discuss the 4(f) Exception and the Caltrans Preferred Alternative.

November 6, 2014: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Independence Tribe, as well as staff from FHWA, BLM, and Far Western Anthropological Group to obtain feedback on three components of the Historic Properties Treatment Plan (the burial plan, traditional cultural properties and construction monitoring) prior to completion of the draft document.

March 19, 2015: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Independence Tribe, as well as staff from FHWA, BLM, and Far Western Anthropological Group to obtain feedback on the draft Historic Properties Treatment Plan prior to completion of the final document.

May 6, 2015: The final Historic Properties Treatment Plan was mailed to the Big Pine Paiute Tribe of Owens Valley, Bishop Paiute Tribe, Independence Paiute Tribe, Lone Pine Paiute-Shoshone Tribe, Timbisha Tribe, BLM, ACHP, and the California SHPO office.

General

March 2013 – July 2014: Caltrans and FHWA meet monthly with BLM to discuss environmental concerns, the need for a transportation easement from BLM, and other topics as they came up.

February 19, 2014: Concurrence was received for the PM_{10} Hot-Spot Analysis from the FHWA.

February 26, 2014: The Great Basin Unified Air Pollution Control District sent an email to Caltrans stating “The commitment discussed in Section 2 of the report and the mitigation measures to control dust during the construction phase of the Olancha/Cartago Four-Lane project are appropriate and consistent with the transportation conformity requirements for the Owens Valley PM_{10} nonattainment area.”

Chapter 5 List of Preparers

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

Allam Alhabaly, Transportation Engineer. B.S., California State University, Fresno, School of Engineering; 13 years in the Environmental Engineering unit. Contribution: Noise Study.

Jamal Assi, Environmental Planner. Doctorate in Agricultural Sciences - Pannon University of Agriculture, Hungary; more than 5 years of postdoctoral environmental research experience in the Department of Animal Science at the University of California, Davis; more than 4 years of environmental planning experience at Caltrans. Contribution: Former generalist for the 2010 draft environmental document.

Christopher Bassar, Associate Environmental Planner. B.S., Environmental Resource Management, Pennsylvania State University; 10 years of environmental planning experience (5 years of technical and 5 years of generalist experience). Contribution: Noise Study.

Andrew Brandt, Transportation Engineer; 8 years of experience in floodplain evaluation and hydrology studies. Contribution: Floodplain Evaluation Report and Location Hydraulics Study.

Rajinder Brar, Environmental Planner. M.S., Agricultural Sciences, Punjab Ag University, India; M.S., Environmental Sciences, California State University, Fullerton; 15 years of environmental impact assessment experience and 7 years of health and safety experience. Contribution: Hazardous Waste Study.

Angela Calloway, Chief, Eastern Sierra Management Branch in Bishop. B.S., Anthropology, Indiana State University; 12 years of experience in California and Great Basin archaeology. Contribution: Cultural Resource Studies.

Wendy Campbell, Associate Environmental Planner, Natural Sciences. B.S., Applied Biology, California State University, Fresno; 23 years of wildlife biology and environmental planning experience. Contribution: 2003 Natural Environment Study.

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; 14 years of environmental technical studies experience. Contribution: Air Quality Study.

Ron Chegwidden, Transportation Engineer - Civil. P.E. B.S., Civil Engineering, University of California at Davis; 20 years' experience in public works engineering, administration, and management. Contribution: Project Engineer. Developed project alternatives and consulted with environmental and resource agencies in the development of the project.

Jaimee Cornwell, Associate Environmental Planner (Natural Sciences). B.A. Biology, University of Montana; 12 years of professional experience in the field of biology. Contribution: Biological Assessment, dated September 2013, Natural Environmental Study, Addendum October 2014 and biological coordination.

Ken Doran, Engineering Geologist. M.S., Geology, California State University, Fresno; B.S., Geology, California State University, Fresno; 10 years of hazardous waste assessment experience. Contribution: Hazardous Waste Study.

David Ewing, Graphic Designer III. B.A., Graphic Design, Minor Business Administration, California State University, Fresno; 15 years of graphic design experience. Contribution: Project mapping and graphics.

Terrence Fox, Engineering Geologist, P.G. M.S., Geology, California State University, Long Beach; B.A., Earth Science, California State University, Fullerton; 22 years of environmental experience. Contribution: Water Quality Study.

Brian Gassner, Associate Environmental Planner. B.A., Anthropology with emphasis in Archaeology, Northern Arizona University; 17 years of archaeology and cultural resource management experience. Contribution: Cultural Resource Studies.

Sarah Gassner, Former Chief, Southern Sierra Environmental Analysis Branch. M.A., Cultural Resources Management, Sonoma State University; B.A., Anthropology, California State University, Fresno; 14 years of archaeological experience; 9 years of cultural resource management and environmental planning experience with Caltrans. Contribution: Environmental unit supervisor for preparation of the 2010 draft environmental document.

Marie (Terry) Goewert, Associate Environmental Planner (Air Quality Specialist). B.S., Foods and Nutrition, Colorado State University; 14 years environmental compliance and 9 years environmental planning experience. Contribution: 2013 Air Quality update and 2014 addendum.

Peter Hansen, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; 1 year of hazardous waste experience, 9 years of paleontology/geology experience. Contribution: Paleontology Study.

Kirsten Helton, Chief, Central Region Special Projects Branch. B.A., Economics, California State University, Fresno; more than 20 years of environmental planning experience. Contribution: Environmental unit supervisor; prepared Section 4(f) Evaluation.

Jim Hibbert, District Landscape Architect. B.L.A., Landscape Architecture, University of Oregon; B.A., Geography with minor in Geology, University of Alaska-Fairbanks; California Licensed Landscape Architect. 15 years' experience in landscape architecture; Contribution: Visual Impacts Analysis, addendum.

Joseph Llanos, Graphic Designer III. B.A., Graphic Design, California State University, Fresno; 14 years of visual design and public participation experience. Contribution: Project mapping and graphics.

Jennifer Lugo, Associate Environmental Planner. M.A., History, California State University, Fresno; B.A., History, Minor Political Science, California State University, Fresno; 10 years of environmental planning experience. Contribution: Environmental Coordinator; prepared environmental document and Section 4(f) Evaluation.

Frank Meraz, Associate Environmental Planner (Natural Science). B.S., Biology, California State University, Fresno; 7 years of wildlife biology and environmental planning experience. Contribution: 2010 Amendment to Natural Environment Study.

R. Steve Miller, District Landscape Architect. Bachelors of Landscape Architecture, 1975, University of Idaho in Moscow, Idaho; registered to practice in California since 1987. Contribution: Visual Impact Assessment.

Tom Mills, Former Chief, Eastern Sierra Management Branch in Bishop and Professionally Qualified Staff – Principal Investigator Prehistoric Archaeology. M.A., Anthropology; 12 years of experience in California and Great Basin archaeology and environmental planning. Contribution: Cultural Resources.

Matthew Palmer, Environmental Planner. M.A., Organizational Management, University of Phoenix, Fresno; B.S., Environmental Science, California State University, Fresno; 10 years of environmental planning experience. Contribution: Prepared 2010 draft environmental document.

Robert Pavlik, Supervising Environmental Planner, Caltrans HQ Division of Environmental Analysis. M.A., History, University of California, Santa Barbara; 30 years of experience as an environmental planner and historian. Contribution: Central Region Environmental Coordinator and Project Development Team member for the project.

Lora Rischer, Associate Right-of-Way Agent. B.S., Sports Medicine, California State University, Sacramento; 16 years of experience in right-of-way. Contribution: Relocation Impact Report.

Susan Schilder-Thomas, Senior Environmental Planner. B.A., Geography with emphasis in Urban Studies, California State University, Fresno; 14 years of environmental planning and management experience. Contribution: Environmental document and environmental coordination.

Lea Spann, Associate Environmental Planner, Hazardous Waste. B.A., Environmental Studies, University of California at Santa Barbara; 21 years of hazardous waste experience. Contribution: 2014 Initial Site Assessment Addendum.

Stephanie M. Stoermer, Environmental Program Specialist/Archaeologist, FHWA Resource Center. M.S., Environmental Studies with a concentration in Environmental Archaeology, Baylor University, Waco, TX; B.A., Anthropology, Baylor University, Waco, TX; 25 years of archaeological and environmental planning experience. Contribution: Technical assistance for Section 4(f) and cultural studies.

Dave Tedrick, Senior Environmental Specialist, FHWA Program Development Unit. M.C., Project Management, George Washington University; B.A., Environmental Science/Biology, California State University, Sacramento; 23 years of environmental project management experience. Contribution: FHWA NEPA lead reviewer.

John Thomas, Associate Environmental Planner. B.A., Geography, California State University, Fresno; 13 years of environmental planning experience. Contribution: Former environmental coordinator.

Cedrik Zemitis, Project Manager, Senior Transportation Planner. M.A., History, California State University, Sacramento; B.A., Exercise Physiology, University of California at Davis; 17 years of finance, budgeting, and administration/management experience. Contribution: Project Manager.

Stacey Zolnoski, Environmental Planner (Archaeology). M.A. in progress, Cultural Resources Management, Sonoma State University, Rohnert Park; B.A., Anthropology, Sonoma State University, Rohnert Park; 7 years of archeological experience. Contribution: Native American coordinator for the project.

Chapter 6 Distribution List

Below is a list of agencies, Native American officials, as well as federal, state, and local officials who received copies of the Notice of Preparation.

Inyo County Planning Department
Joshua Hart, Director
P.O. Box L
Independence, CA 93526

Inyo County Sherriff's Department
Sherriff William Lutze
P.O. Box S
Independence, CA 93526

CA Department of Fish and Wildlife
Rose Banks, Region 6
407 West Line Street
Bishop, CA 93514

Olancha-Cartago Fire Department
P.O. Box 64
Olancha, CA 93549

BLM, Bishop Field Office
351 Pacu Lane, Suite 100
Bishop, CA 93514

Inyo and Mono Counties
Attn: Nate Reade, Ag Commissioner
207 West South Street
Bishop, CA 93514

BLM, Bishop Field Office
Attn: Martin Oliver
351 Pacu Lane, Suite 100
Bishop, CA 93514

FHWA
Attn: Dave Tedrick
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

BLM, Bishop Field Office
Attn: Steven L. Nelson
351 Pacu Lane, Suite 100
Bishop, CA 93514

City of Los Angeles DWP
Attn: James G. Yannotta
300 Mandich Street
Bishop, CA 93514

Pacific Railroad
1400 Douglas Street
Omaha, NE 68179

California Highway Patrol
469 South Main Street
Bishop, CA 93514

U.S. Fish and Wildlife Service
Attn: Ray Vizgirdas
2493 Portola Road, Suite B
Ventura, CA 93003

Lahontan RWQCB
Attn: Brianna Bergen
14440 Civic Drive, Suite 200
Victorville, CA 92392

U.S. Forest Service
351 Pacu Lane, Suite 200
Bishop, CA 93514

BLM, Ridgecrest Field Office
Attn: Carl B. Symons
300 South Richmond Road
Ridgecrest, CA 93555

Lone Pine Public Library
127 West Bush Street
Lone Pine, CA 93545

BLM, Bishop Field Office
Attn: Sherri Lisius
351 Pacu Lane, Suite 100
Bishop, CA 93514

BLM, Ridgecrest Field Office
Attn: Robert Pawelek
300 South Richmond Road
Ridgecrest, CA 93555

Inyo County LTC
Attn: Courtney Smith
P.O. Box Drawer Q
Independence, CA 93526

California Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825

Indian Wells Valley Water District
Attn: Don Zbeda
500 West Ridgecrest Blvd
Ridgecrest, CA 93555

Eastern Sierra Council of Governments
P.O. Box Drawer N
Independence, CA 93526

CA Department of Fish and Wildlife
Nick Buckmaster, Region 6
407 West Line Street
Bishop, CA 93514

City of Los Angeles DWP
Attn: Clarence E. Martin
300 Mandich Street
Bishop, CA 93514

U.S. Forest Service
Mt. Whitney Ranger Station
P.O. Box 8
Lone Pine, CA 93545

BLM Firestation
2079 South Highway 395
Olancha, CA 93545

Caltrans District 9
Attn: Florence Trainor
500 South Main Street
Bishop, CA 93514

Eastern Sierra Interagency Visitor Center
P.O. Box Drawer R
Lone Pine, CA 93545

Olancha Post Office
100 South Highway 395
Olancha, CA 93549

Inyo County LTC
Clint Quilter, Executive Director
P.O. Box Drawer Q
Independence, CA 93526

BLM, Bishop Field Office
Attn: Larry Primosch
351 Pacu Lane, Suite 100
Bishop, CA 93514

Verizon
Attn: Lewis Edrozo
520 South China Lake Blvd
Ridgecrest, CA 93555

Southern California Edison
Attn: Kyle Toohey
510 South China Lake Blvd
Ridgecrest, CA 93555

Fort Independence Paiute Tribe
Ms. Stephanie Arman, THPO
P.O. Box 67
Independence, CA 93526

The Big Pine Paiute of the Owens Valley
The Honorable Gina Jones, Chairperson
P.O. Box 700
Big Pine, CA 93513

Fort Independence Paiute Tribe
Wendy Stine, Chairperson
P.O. Box 67
Independence, CA 93526

Timbisha Shoshone Tribe
The Honorable George Gholson, Tribal Chairperson
P.O. Box 1779
Bishop, CA 93515

The Honorable Dianne Feinstein
United States Senate
2500 Tulare Street, Suite 4290
Fresno, CA 93721

The Honorable Connie Conway
California State Assembly
26th District
113 North Church Street, Suite 505
Visalia, CA 93291

Matt Kingsley, County of Inyo
Board of Supervisors Member
Inyo County LTC
P.O. Drawer Q
Independence, CA 93526

County of Inyo, District 1
Supervisor Linda Arcularius
225 N. Round Valley Road
Bishop, CA 93514

County of Inyo, District 3
Supervisor Rick Pucci
P.O. Box 128
Bishop, CA 93514

The Big Pine Paiute of the Owens Valley
Mr. Bill Helmer, THPO
P.O. Box 700
Big Pine, CA 93513

Lone Pine Paiute Shoshone Tribe
Ms. Kathy Bancroft, THPO
P.O. Box 747
Lone Pine, CA 93545

Bishop Paiute Tribe
Chad "Dale" Delgado, Chairperson
50 Tu Su Lane
Bishop, CA 93514

Fort Independence Paiute Tribe
Mr. Dennis Matthison, Environmental Director
P.O. Box 67
Independence, CA 93526

Lone Pine Paiute Shoshone Tribe
Mr. Mel Joseph, Environmental Director
P.O. Box 747
Lone Pine, CA 93545

The Honorable Paul Cook, 8th District
United States House of Representatives
14955 Dale Evans Parkway
Apple Valley, CA 92307

Jim Ellis, City of Bishop Councilmember
Inyo County LTC
P.O. Drawer Q
Independence, CA 93526

Laura Smith, City of Bishop
Council Member (Vice-Chair)
Inyo County LTC
P.O. Drawer Q
Independence, CA 93526

Doug Thompson, County of Inyo
Member At-Large (Chair)
Inyo County LTC
P.O. Drawer Q
Independence, CA 93526

County of Inyo, District 4
Supervisor Mark Tillemans
P.O. Box 612
Big Pine, CA 93513

Ahron R. Hakimi
KernCOG Executive Director
1401 19th Street, Suite 300
Bakersfield, CA 93301

Bishop Paiute Tribe
Mr. Raymond Andrews, THPO
50 Tu Su Lane
Bishop, CA 93514

Timbisha Shoshone Tribe
Ms. Barbara Durham, THPO
P.O. Box 358
Death Valley, CA 92328

Bishop Paiute Tribe
Mr. Brian Adkins, Environmental Director
50 Tu Su Lane
Bishop, CA 93514

Lone Pine Paiute Shoshone Tribe
The Honorable Mary Wuester, Chairperson
P.O. Box 747
Lone Pine, CA 93545

The Honorable Barbara Boxer
United States Senate
2500 Tulare Street, Suite 5290
Fresno, CA 93721

The Honorable Jean Fuller
California State Senate
18th District
5701 Truxtun Avenue, Suite 150
Bakersfield, CA 93309

Bob Kimball, City of Bishop
Member At-Large
Inyo County LTC
P.O. Drawer Q
Independence, CA 93526

Rick Pucci, County of Inyo
Board of Supervisors Member
Inyo County LTC
P.O. Drawer Q
Independence, CA 93526

County of Inyo, District 2
Supervisor Jeff Griffiths
387 Willow Street
Bishop, CA 93514

County of Inyo, District 5
Supervisor Matt Kingsley
P.O. Box 110
Lone Pine, CA 93545

Appendix A California Environmental Quality Act Checklist

Supporting documentation of all California Environmental Quality Act (CEQA) checklist determinations is provided in Chapters 2 and 3 of this Environmental Impact Report/Environmental Assessment (EIR/EA). 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 Chapters 2 and 3.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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

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?	☐	☒	☐	☐
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?	☐	☒	☐	☐

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☒	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of 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.

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?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒

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?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner 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?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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)?	☐	☐	☐	☒

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

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:	☐	☐	☐	☒
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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?	☐	☐	☐	☒

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider 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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Appendix B Section 4(f) Evaluation

Olancha/Cartago Four-Lane Project

On U.S. Highway 395 in Inyo County
from 2.1 miles south of LA Aqueduct Bridge (#48-10)
to 0.2 mile south of Ash Creek Bridge (#48-11)
09-INY-395-PM 29.2/PM 41.8
Project ID 09-0000-0030
SCH Number# 2010091023

Draft Section 4(f) Evaluation

Prepared by the
U.S. Department of Transportation
Federal Highway Administration
and the
State of California Department of Transportation

July 2015

09-INY-395-PM 29.2/41.8
09-0000-0030

Individual Section 4(F) Evaluation
for the Olancha/Cartago Four-Lane Project

Widen and realign U.S. Highway 395 to four lanes from post miles 29.2 to 41.8 in Inyo County

Submitted Pursuant to:

49 USC 303

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

Section 4(f) Evaluation for the Olancha – Cartago 4-Lane Project

Chapter 1 Introduction

This document discusses the individual Section 4(f) evaluation for the Olancha/Cartago Four-Lane project, which would widen and realign U.S. Highway 395 to four lanes from post miles 29.2 to 41.8 in Inyo County.

There are numerous prehistoric and historic-era archeological sites within the project limits. It is also possible that the project area contains National Register of Historic Places (NHRP) eligible districts that are within a potential traditional cultural landscape. These potential historic districts will be delineated and evaluated for NHRP eligibility as part of the Historic Properties Treatment Plan (HPTP), which is currently being prepared for the project.

Typically, archaeological sites are analyzed for Section 4(f) significance based on the qualities and attributes that make the sites eligible under Section 106 of the National Historic Preservation Act. This analysis considers historic properties in terms of their research and interpretive value, from the perspective of archaeologists and historians. This analysis cannot address all of the cultural values ascribed to the potential traditional cultural landscape and the sites by cultural affiliated tribes. However, this Section 4(f) evaluation will provide an opportunity for the cultural affiliated tribes to comment on the findings made here. Consultation with Native American tribes regarding significance ascribed by them to the sites is ongoing.

Section 4(f)—the Law

Section 4(f) of the Department of Transportation Act of 1966 is designed to protect and preserve public parks and recreation lands, wildlife refuges and historic sites.

Section 4(f) stipulates that the Federal Highway Administration (FHWA) and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply:

- There is no feasible and prudent alternative to the use of land.
- The action includes all possible planning to minimize harm to the property resulting from use.

Section 4(f) defines "use' as occurring when a Section 4(f) resource will be permanently incorporated into a transportation facility. The Section 4(f) resource may also be considered used where there is a temporary use (such as a construction easement or temporary restriction of access), or an impact created by a resource's proximity (nearness) to the new transportation facility (designated a "constructive use"), so that the values of a resource would be substantially impaired.

The project lead must consult with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands

protected by Section 4(f). If historic sites are involved, coordination with the officials with jurisdiction is also required. For this project, the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) are the officials with jurisdiction.

Section 4(f) and Historic Resources

Section 4(f) provides additional considerations for historic properties beyond those afforded by Section 106 of the National Historic Preservation Act, which determines a historic site's significance. In order for a historic site to be considered under Section 4(f), it must be considered significant. The Section 106 process is the method by which a historic site's significance is determined.

Section 106, by contrast, is a process by which historic properties are identified and project effects to them are considered. Section 106 and Section 4(f) are similar in their requirement that historic sites be considered in the planning of a federal undertaking, but they have certain key differences. An important distinction between them is that Section 106 considers project effects to historic properties, while Section 4(f) considers whether there is a "use" of historic properties. Under Section 4(f), Caltrans and the Federal Highway Administration (FHWA) must avoid the use of historic properties, if possible. If there is no prudent and feasible alternative that avoids the use, then the agency must use all possible planning to minimize harm to historic properties (and other Section 4(f) resources) resulting from use by the project.

Section 4(f) has a substantive requirement that requires historic sites to be avoided, while Section 106 requires historic properties to be identified and effects to historic properties be considered.

Another important difference between Section 4(f) and Section 106 is Section 4(f) applies only to programs and projects undertaken by agencies of the U.S. Department of Transportation, while Section 106 applies to actions of any federal agency.

FHWA cannot approve a project that uses land of a historic site. For purposes of this part, the term "historic site" includes any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that are included in, or are eligible for inclusion in, the National Register. In order for FHWA to approve such a project, it must determine that there is (1) no feasible and prudent avoidance alternative and all possible planning is accomplished to minimize harm to the property resulting from that use or (2) the use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant, will have a de minimis impact, as defined in Section 4(f) regulations, on the property.

There are exceptions to the requirement for Section 4(f) consideration. For example, an archaeological site that is considered "important chiefly because of what can be learned by data recovery and has minimal value for preservation in place" first would be

evaluated to see if the site is worthy of preservation in place. Archaeological sites must be important chiefly, but not necessarily exclusively, for their information value in order to be considered for the Section 4(f) archeological exception. An archeological site eligible under Criterion D ("have yielded, or may be likely to yield, information important in prehistory or history") and any of the other NRHP criteria could still meet this exception unless the site is primarily important for preservation in place. A site that is unusual, unique, or extraordinary or that has exceptional meaning to one or more Native American groups may warrant preservation in place.

FHWA, in implementing Section 4(f), understands that archaeological sites sometimes do not fit well into the regulatory procedures that guide Section 4(f). Paragraph 23 CFR 774.13(c) provides for an exception to Section 4(f) when there is a late designation of a Section 4(f) resource.

Section 4(f) applies to archeological sites that are on or eligible for the NRHP and that warrant preservation in place, including those sites discovered during construction. Section 4(f) does not apply if FHWA determines, after consultation with the State Historic Preservation Officer (SHPO) and the Tribal Historic Preservation Officer (THPO) if on tribal lands, federally recognized Indian tribes (as appropriate) and the ACHP that the archaeological resource is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place, and the SHPO, THPO (if on tribal lands), and the ACHP do not object to this determination (see 23 CFR 774.13(b)).

Once an archaeological site is identified, regardless of what stage the project is in (construction, planning, etc.), the Federal Highway Administration must make the determination whether the Section 4(f) exception applies or whether the site warrants preservation in place. FHWA and Caltrans will always make an effort to avoid and minimize effects consistent with Section 106. Avoidance of a resource is not the same as preserving it in place. There is an overlap between a project's area of potential effects under Section 106 and the limits within which possible impacts to Section 4(f) resources are recognized. Constructive use involves an indirect impact to the Section 4(f) resource of such magnitude as to effectively act as a permanent incorporation. Although the project does not physically incorporate the resource, it so severely impacts important features, activities or attributes associated with it, that it substantially impairs it. These may include such things as the noise from a newly built freeway ramp making conversation in a picnic area difficult, new restrictions to access created by highway changes that remove a driveway, a zoo experiencing vibration that affects one or more animal exhibits, ecological intrusions, such as fumes, soot, or bad odors, and visual impacts. In the case of historic properties, this would include effects that would diminish the integrity of values that make the resource eligible to the NRHP, such as obstruction of views of a historic building, or alterations in the setting of a historic property that derives its value in substantial part from its setting. These proximity impacts will typically be accounted for within an area of potential effects established for purposes of Section 106 which must also account for the potential for indirect effects to historic properties.

Archaeological or historic districts are also considered under both Section 4(f) and Section 106. The archaeological exception may be applied to individual elements of a district when those elements or features are important chiefly for what can be learned and have minimal value for preservation in place. The exception may be applied even if there are other elements of the district that might be worthy of preservation in place, provided those other elements would not be subject to use, including possible proximity impacts.

Caltrans and FHWA have committed to reevaluate all identified archaeological sites as part of the Historic Properties Treatment Plan (HPTP), so eligibility determinations for the NRHP were not considered in this Section 4(f) evaluation. Instead, in this evaluation, and for comparative purposes only, these resources are treated as potential Section 4(f) resources and given equal weight regardless of their previously established eligibility for listing. Sites are weighed based on components that make up the site, as discussed in Chapter 4. For this reason, the discussion of Section 106 resources contained in the draft environmental document is somewhat different from the evaluation of Section 4(f) resources contained in this document.

Ultimately, the use of any Section 4(f) resource would be dependent upon detailed design work under any alternative chosen.

Chapter 2 Description of Proposed Project and Alternatives

2.1 Project Description

The California Department of Transportation (Caltrans), as California Environmental Quality Act (CEQA) lead agency, and FHWA, as National Environmental Policy Act (NEPA) lead agency, propose to convert approximately 12.6 miles of existing U.S. Highway 395 from a two-lane conventional highway to a four-lane expressway or partial conventional four-lane highway, from post mile 29.2 to post mile 41.8 in Inyo County. The project proposes six alternatives with varying amounts of construction on new alignments. The new roadway will have four 12-foot-wide lanes with a median of variable width. There will be paved shoulders throughout the project, 5 feet wide on the inside and 10 feet wide on the outside. This project also proposes constructing new concrete bridges to cross the Los Angeles Aqueduct and installing concrete box culverts and smaller pipe culverts throughout the project limits to promote drainage. Under some of the proposed alternatives, this project may extend State Route 190 to intersect with the proposed improvements. A material site at the end of Fall Road and south of Olancha Creek would be available for use to provide soil and road materials for the project. See Figures 1 and 2 for the project vicinity and location maps, respectively.

Caltrans and FHWA also propose a route adoption for U.S. Highway 395 from approximately post mile 30.0 to post mile 40.0. The route adoption is necessary to adopt the constructed alignment and accommodate the change from a conventional highway to a controlled-access expressway on a new alignment. State Route 190 would need a route adoption to accommodate the extension to the new alignment or a route re-designation to use portions of the existing U.S. Highway 395 as State Route 190.

In the August 2010 draft Initial Study/Environmental Assessment, five build alternatives and the no-build alternative were presented. After reviewing the recommendation of the Project Development Team, the draft Initial Study/Environmental Assessment, other project studies, comments received, survey results, and information received at the public meeting and the public hearing, former Caltrans District 9 Director Tom Hallenbeck combined portions of Alternatives 3 and 4 to create a sixth alternative known as the Caltrans Preferred Alternative. The director's decision was publicized via a press release on June 29, 2011, and was also publicized in the September 17, 2011, issue of *The Inyo Register* in an article titled "Caltrans' Olancha/Cartago decision a balancing act." This new document includes the new Caltrans Preferred Alternative; however, final identification of a preferred alternative will occur after the public review and comment period.

Six build alternatives and the No-Build Alternative are proposed for this project (see Figures 3 through 8). The Caltrans Preferred Alternative is a combination of Alternatives 3 and 4.

Alternative 1 proposes constructing segments of conventional all-paved, conventional divided, and controlled-access four-lane divided highway along the existing U.S. Highway 395 alignment.

Alternative 2 proposes construction of a controlled-access four-lane divided expressway with the northbound and southbound lanes separated by at least a 100-foot wide unpaved median throughout the project along the existing U.S. Highway 395 alignment.

Alternative 2A is a variation of Alternative 2 and proposes that the controlled-access divided four-lane expressway be constructed west of the community of Cartago with the northbound and southbound lanes separated by at least a 100-foot-wide unpaved median throughout.

Alternative 3 proposes construction of a controlled-access divided four-lane expressway west of the community of Olancha with the northbound and southbound lanes separated by at least a 100-foot-wide unpaved median throughout the project.

Alternative 4 proposes construction of a controlled-access divided four-lane expressway west of the communities of Olancha and Cartago with northbound and southbound lanes separated by a variable-width median throughout the project to avoid utilities.

The Caltrans Preferred Alternative is a combination of Alternatives 3 and 4. The combined alternative will be a controlled-access four-lane divided expressway that will pass west of Olancha and the Los Angeles Aqueduct (Alternative 4). Once the alignment crosses Olancha Creek, the Caltrans Preferred Alternative will cross the Los Angeles Aqueduct and continue north through Cartago along the existing highway to meet up with the four-lane section of U.S. Highway 395 to the north (Alternative 3). The northbound and southbound lanes will be separated by a 100-foot wide unpaved median.

The No-Build Alternative proposes to leave the facility as it currently exists.

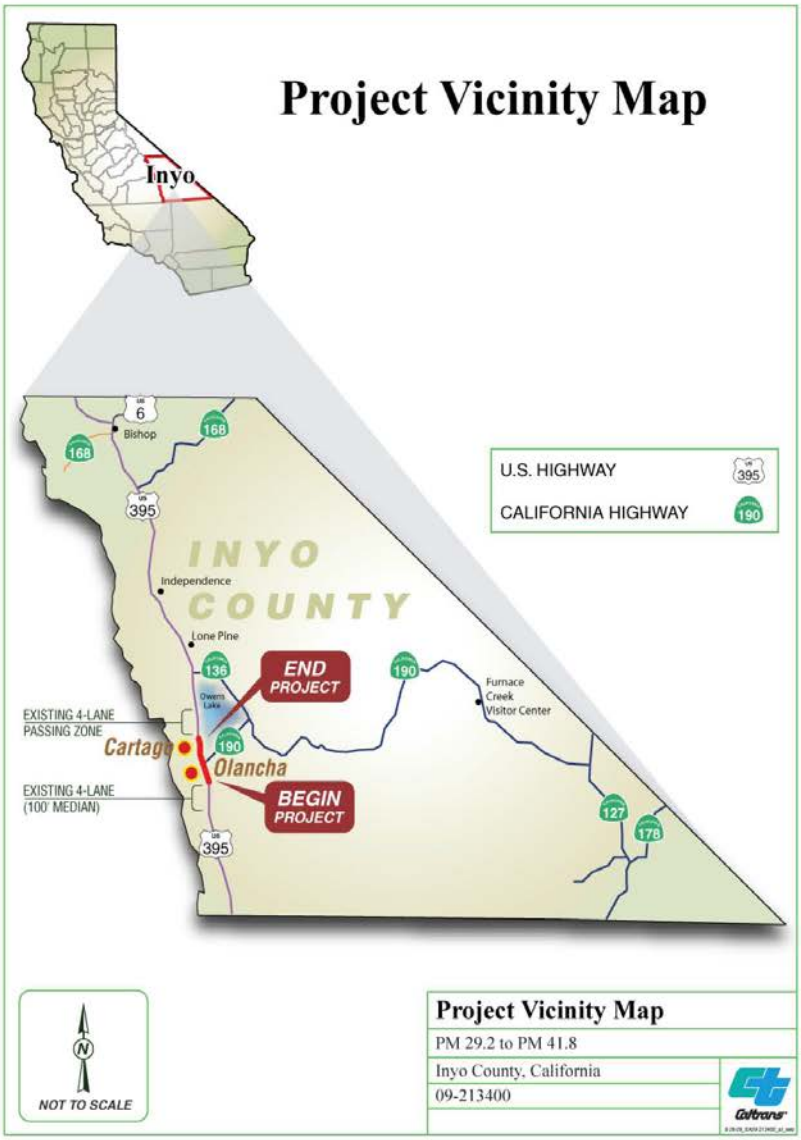


Figure 1 Project Vicinity Map

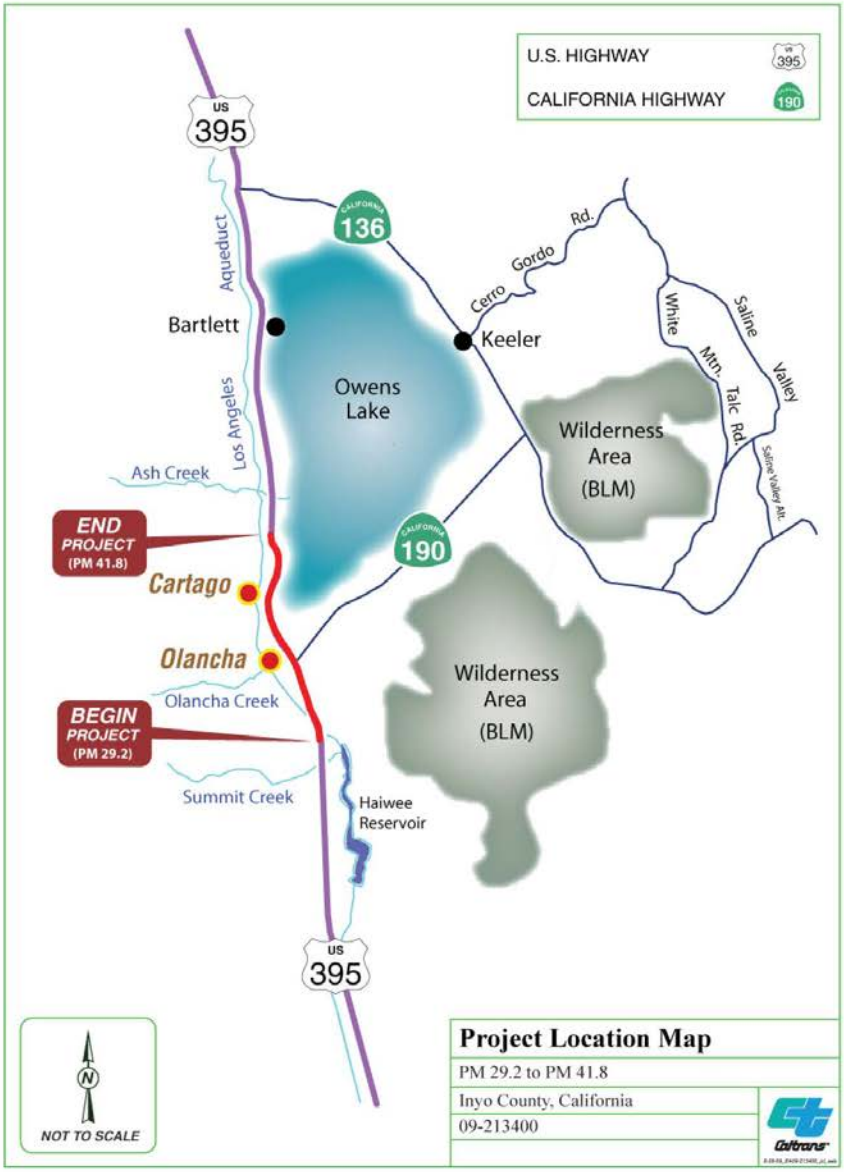


Figure 2 Project Location Map

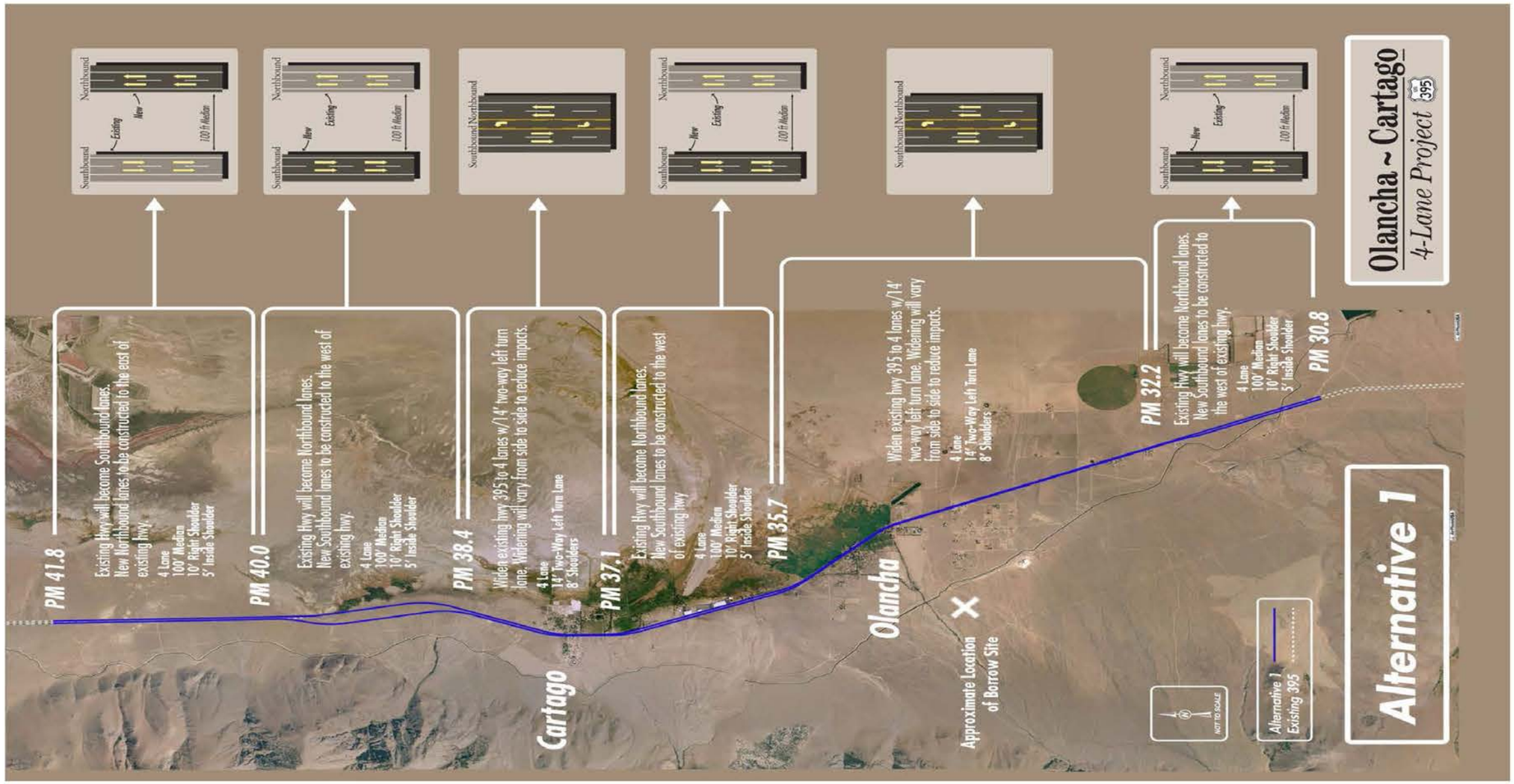


Figure 3 Alternative 1 Map

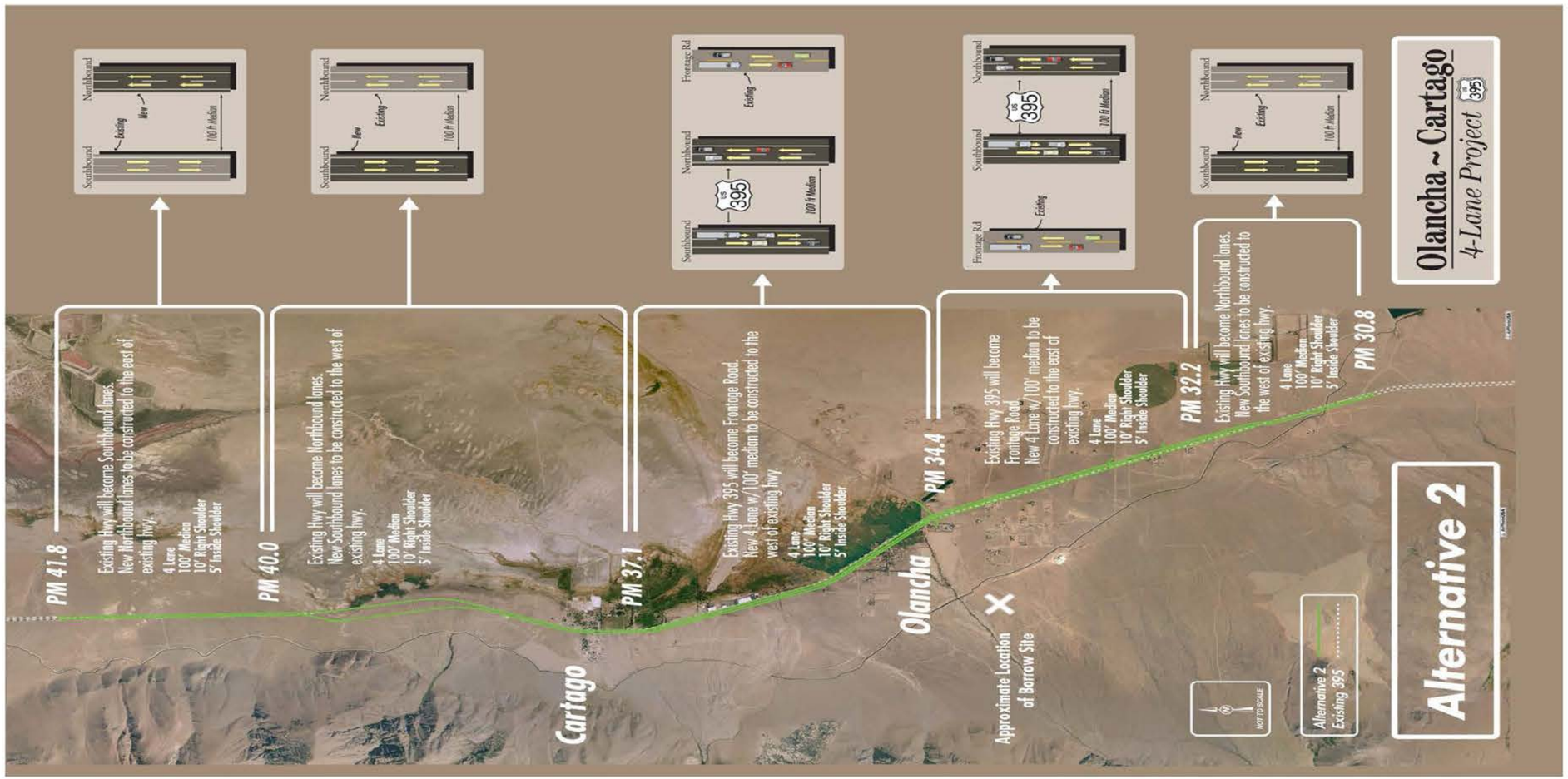


Figure 4 Alternative 2 Map

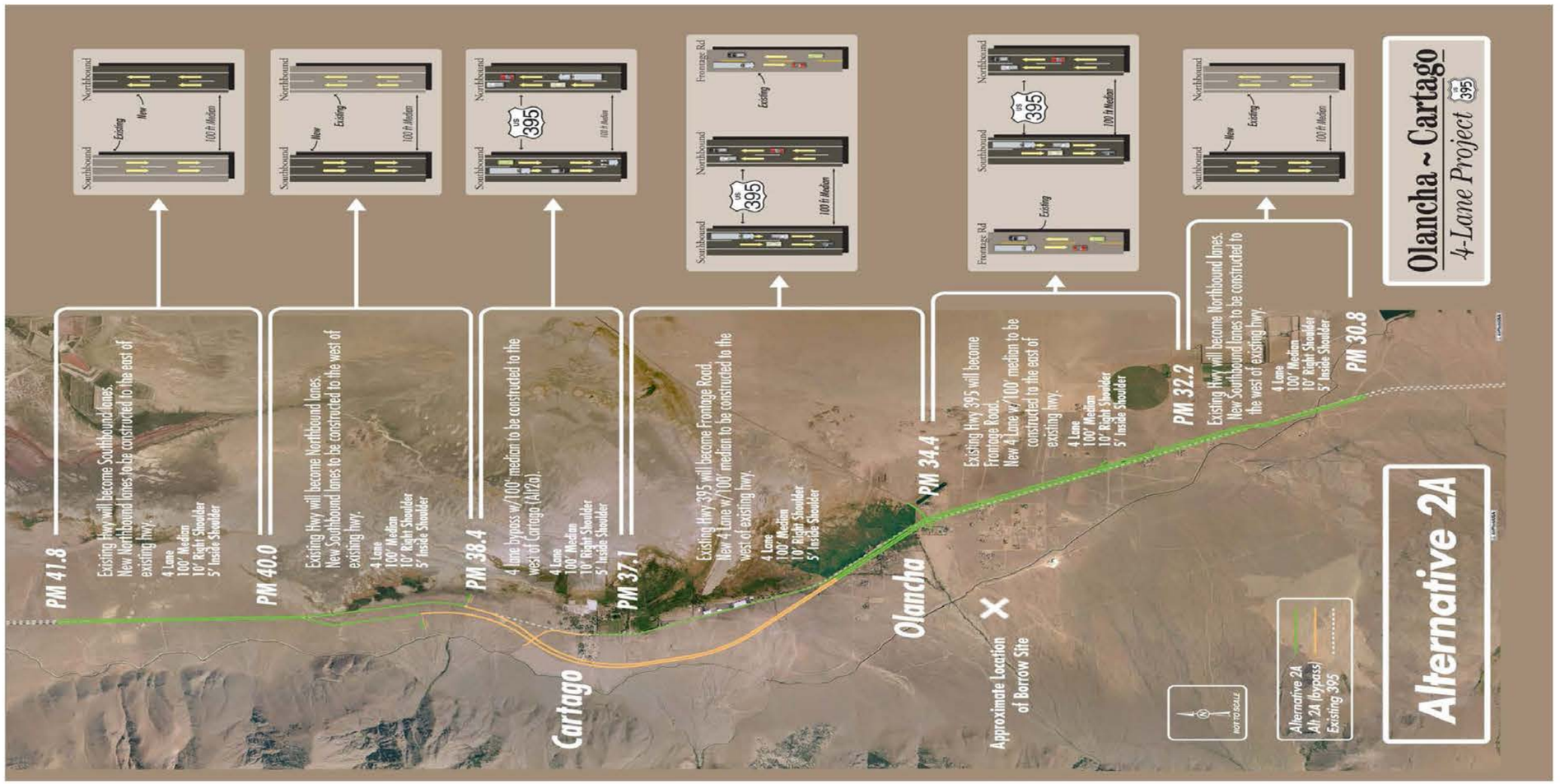


Figure 5 Alternative 2A Map

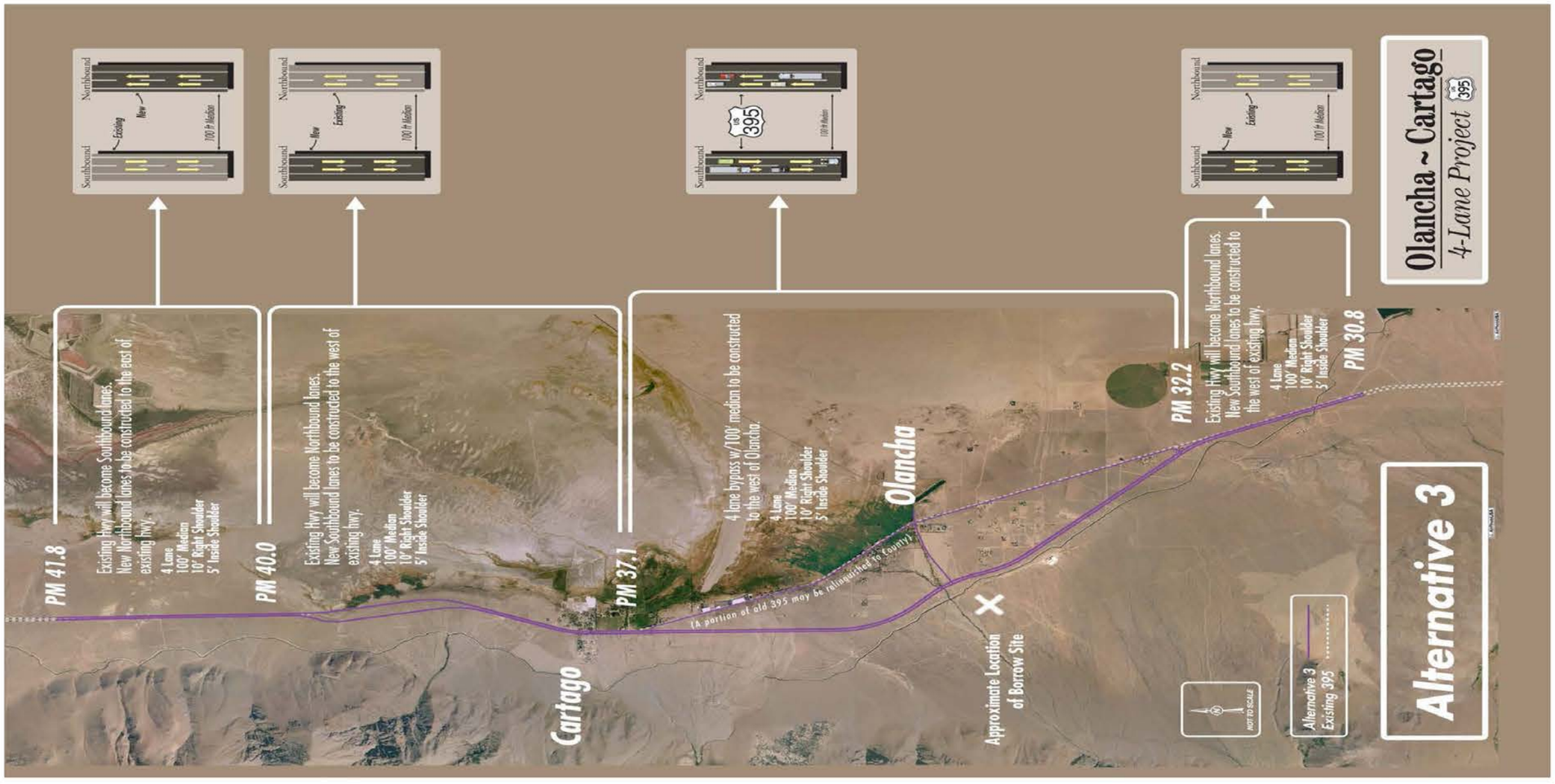


Figure 6 Alternative 3 Map

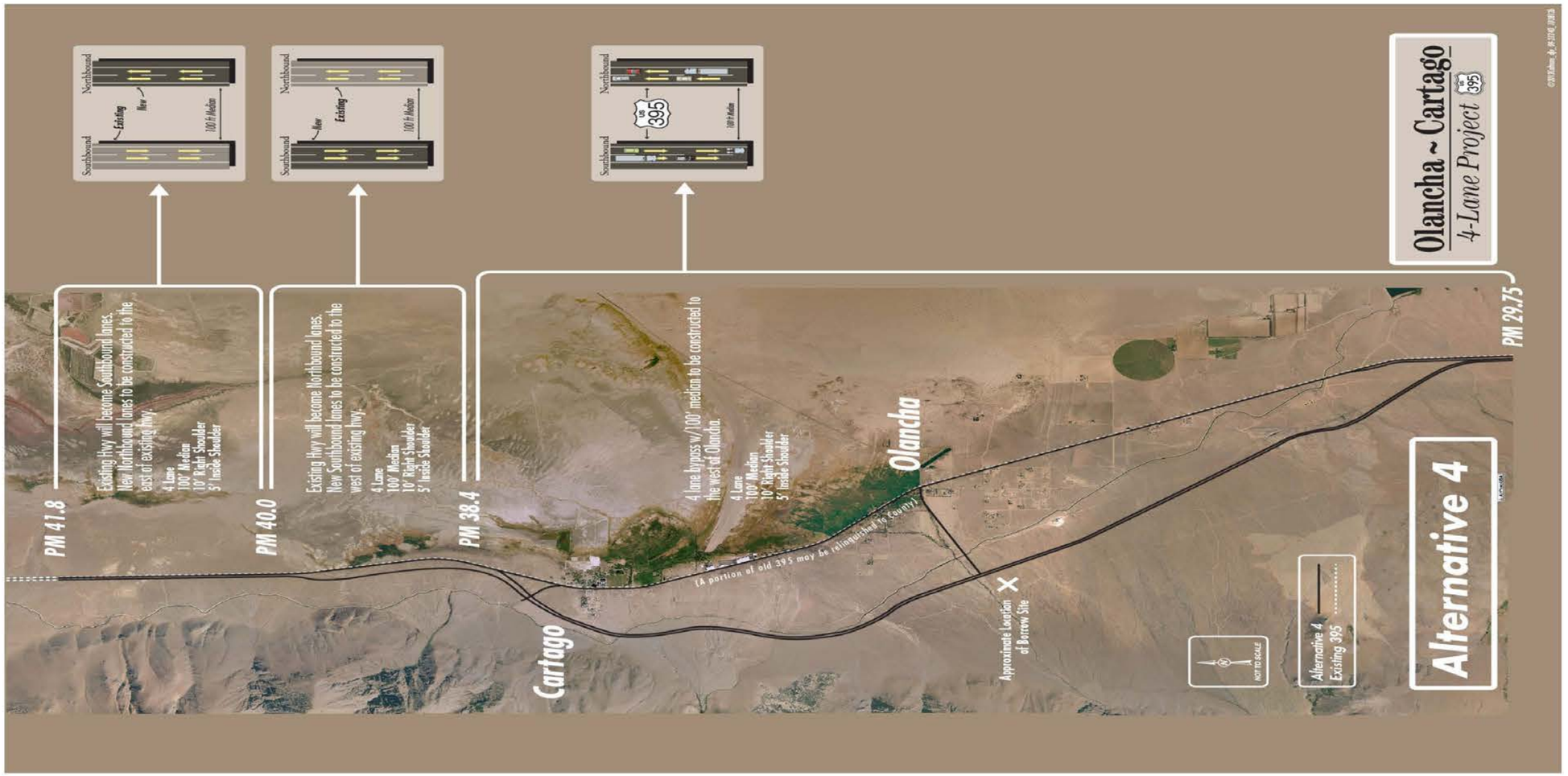


Figure 7 Alternative 4 Map

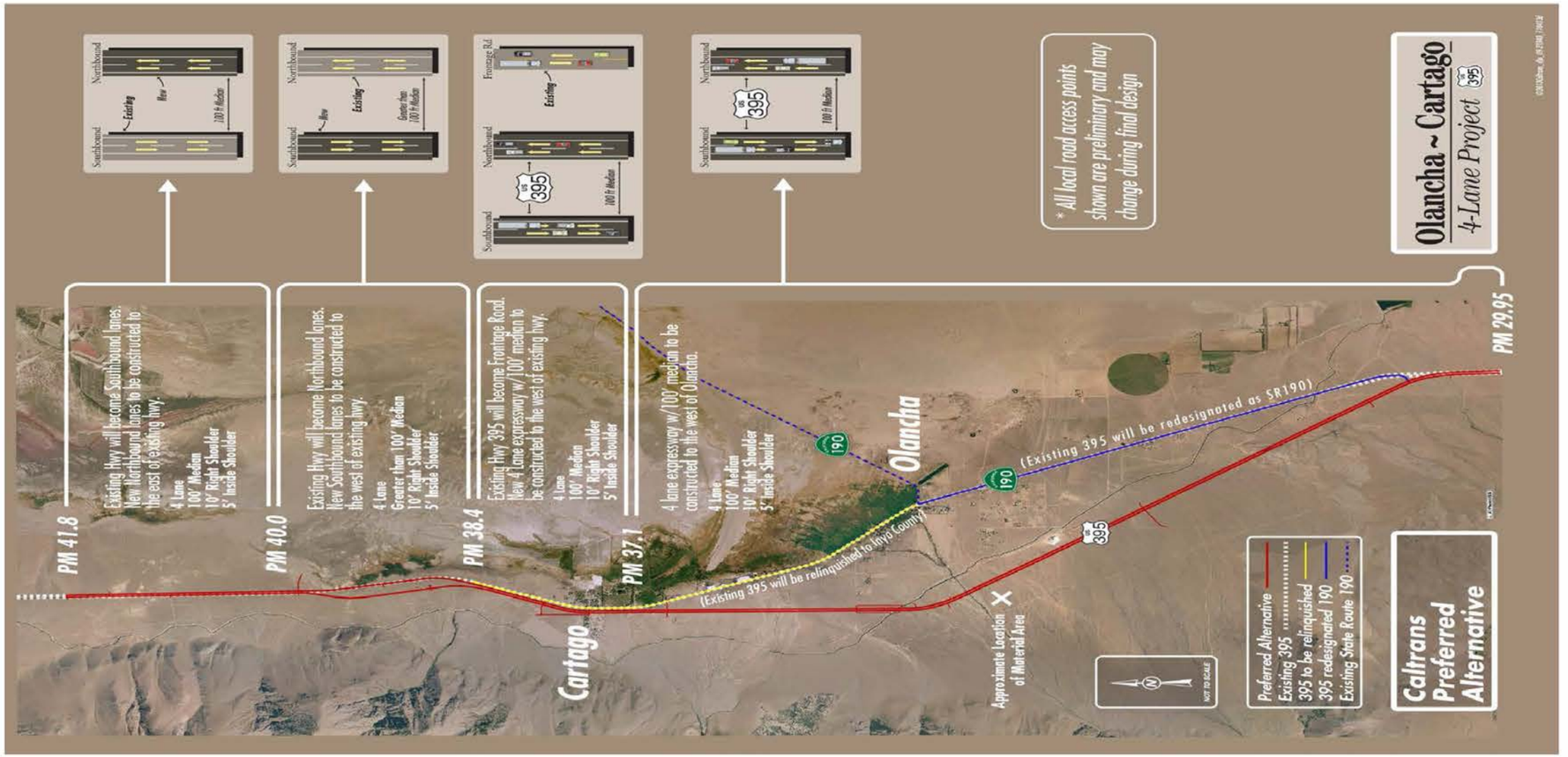


Figure 8 Caltrans Preferred Alternative Map

2.2 Purpose and Need

The purpose of the project is to:

- Accommodate increased traffic demands by improving level of service
- Improve safety by allowing faster-moving traffic to pass slower vehicles
- Provide route continuity

Increasing traffic demand on U.S. Highway 395 requires that the existing two-lane conventional highway be improved and upgraded to current highway design standards. Unlike the rest of U.S. Highway 395 in Inyo County, which is four lanes, this portion of the highway is a mostly two-lane conventional highway that consists of a 24-foot-wide traveled way with 8-foot paved shoulders. Through more than half the project limits, barrier striping prohibits drivers from passing slower-moving vehicles. In areas without barrier striping, the high traffic volumes further restrict passing opportunities. It is possible that the resulting longer travel time could create frustrated drivers who are willing to attempt unsafe maneuvers. These factors have led to a traffic accident fatality rate higher than the statewide average.

In addition, as mentioned above, this section of U.S. Highway 395 is the only part of the highway that is mostly a two-lane conventional highway. Thus, the north and south ends of the project limits currently connect to four-lane divided expressways, creating an inconsistent travel way, resulting in a lack of route continuity.

Traffic volume data, level of service projections and numerous safety issues support the improvement of U.S. Highway 395.

Traffic Volumes

U.S. Highway 395 is a major element of a transportation corridor connecting the eastern Sierra region (Inyo and Mono counties) and western central Nevada to the Southern California region. This transportation corridor is vital to the economy of the eastern Sierra region for the shipment of goods and materials because the region imports food, clothing, and other goods. In addition, this corridor sees major recreational traffic. An Origination and Destination Travel Study conducted in 2000 for U.S. Highway 395 through Inyo and Mono counties indicated that 55 percent of the traffic on U.S. Highway 395 was recreationally oriented and that recreation vehicles composed 3.2 percent of the vehicle mix. The study also found that 36 percent of the traffic originated in Southern California.

Summaries of the various current and projected traffic data are presented in Table 1, based on 2012 traffic volume counts. The future traffic volumes are based on a growth rate of 0.5 percent per year.

Table 1 Traffic Data

	2012	2019	2024	2029
Average Annual Daily Traffic	5,300	5,490	5,630	5,770
Percentage that is Trucks	20.3	20.3	20.3	20.3
20-Year Growth Rate (percent)	-	0.5	0.5	0.5

Source: December 2013 Caltrans Traffic Studies

According to the data in Table 1, increasing traffic volumes can be expected on U.S. Highway 395 well into the future.

Level of Service

Level of service is a measure of how free or constrained traffic is as it travels along a road segment or through an intersection. Levels of service are expressed as report-card-type grades, ranging from A (indicating free-flowing traffic) to F (indicating extremely congested traffic). A level of service rating of F equates to substantial congestion, with traffic demand exceeding roadway capacity. For two-lane rural highways, level of service is defined in terms of percent time spent following and average travel speed. A four-lane determination is based on a combination of factors including maximum density, average speed, maximum volume to capacity ratio and maximum service flow rate.

The existing facility is currently operating at a level of service D. This is especially evident on weekends and holidays when traffic volumes are extremely heavy. Complicating the situation is the relatively high volume of slower-moving vehicles using the route, with trucks and recreational vehicles making up more than a quarter of the traffic. Long lines of cars collect behind these slower vehicles, creating longer driver delays, which become a major factor when determining level of service. By 2039, the level of service is expected to drop to E. See Table 2.

Table 2 Level of Service within Project Limits

	2010	2019	2039
Level of service without improvements	D	D	E

Source: January 2010 Caltrans Traffic Studies

Safety Issues

Because there is sometimes more traffic using the existing roadway than the road is designed to carry, the highway often operates at a reduced level of service. This is especially evident on weekends and holidays when traffic volumes are extremely heavy. Because the study area is mostly rural, drivers of passenger cars tend to travel at a high rate of speed along the route. But trucks and recreational vehicles usually travel slower, so traffic starts to "queue" (line up) behind the larger, slower-moving vehicles. As slow-moving vehicles form longer queues, drivers can become frustrated and may attempt to

pass, often unsafely. In addition, through more than half of the project limits, barrier striping prohibits passing by those drivers who would prefer to travel faster. In areas without barrier striping, passing opportunities are further restricted by the high traffic volumes.

These factors have led to a traffic accident fatality rate higher than the statewide average (see Table 1-3). Between 2002 and 2011, 130 accidents were reported. Of these, 27 percent of the collisions involved hit objects, while almost 34 percent involved overturned vehicles (rollovers), and 14 percent involved sideswipes. Main collision factors were speeding (23 percent) and improper turns (30 percent).

Table 3 Ten-Year Traffic Accidents 2002-2011

Type of Accidents	Accident Rate/Million Vehicle Miles	
	Study Area Average	Statewide Average
Fatal	0.029	0.017
Injury	0.23	0.29
Total	0.48	0.67*

**Total Accident Rate/Million Vehicle Miles includes property damage accidents not shown.*
Source: December 2013 Caltrans Traffic Studies

All of the build alternatives would reduce the accident rate for this segment of U.S. Highway 395. With two lanes for each direction of travel, fast-moving traffic could safely pass slower-moving vehicles. Building a new roadway with a median separating the northbound from the southbound lanes would drastically reduce head-on collisions. Flattening embankment slopes and creating a wider roadside environment would reduce rollover-type accidents.

Route Continuity

U.S. Highway 395 in California is classified functionally as a Rural Principal Arterial and is included in the California Freeway and Expressway System. It is also included in the National Highway System as classified by the U.S. Department of Transportation (23 USC 103).

This project is the last section of U.S. Highway 395 in Inyo County that is not four lanes. With the completion of this project, a continuous four-lane section would be achieved on U.S. Highway 395 from the junction of U.S. Highway 395 and State Route 14 in Kern County to north of Lee Vining in Mono County.

Chapter 3 List and Description of Section 4(f) Resources

This project would require the use of Section 4(f) resources. The archeological sites include some that have been formally evaluated for inclusion to the NRHP and some that have not. The sites that have not been formally evaluated for the NRHP are either located outside of the limits of the draft environmental document's project study area, are unknown, are on private property, or were not excavated in order to avoid unnecessary disturbance of the site. Resources are divided into categories by type, specifically prehistoric, historic period and multi-component archaeological sites (sites that contain both prehistoric and historic period artifacts), as well as architectural resources.

3.1 Known Historic Period Sites Formally Evaluated and Determined Eligible for the National Register of Historic Places

For this project, FHWA has determined, in part due to consideration of comments made by the local Native American tribes, the ACHP, the SHPO, and the BLM, that there is not adequate information about identified archaeological sites to exempt the project from including a Section 4(f) Evaluation. The following properties are considered to be Section 4(f) resources for the purposes of this project. All the eligible sites would be impacted by one or more of the build alternatives. Although site limits were preliminarily drawn, due to the complex nature of archeological sites, some may overlap or extend beyond their currently assumed boundaries. Figure 10 (a, b, and c) show site locations within the project area, however these maps have been redacted from the public version of this document as described under 36 CFR 800.11(c). Information on archaeology sites is excempt from both the Freedom of Information Act and the California Public Records Act. Each of the following properties was found eligible under Criterion D:

- CA-INY-7741/H (PLI-29) is a historic period site associated with the construction of the Los Angeles Aqueduct or Southern Pacific Railroad and consists of a can and refuse dump; a 3-foot-deep pit; a dump of metal waste fragments; a three-sided cellar depression; and another metal waste fragment dump. Artifacts dating back to the early 1900s include large cans, many condensed milk cans, and simple domestic wares such as crockery, enamel ware, and kerosene lamps. The SHPO concurred with the eligibility determination by letter, dated March 23, 2010.
- CA-INY-7787/H (PLI-76) is a historic period site associated with the remains of a construction camp for the Los Angeles Aqueduct that existed in the area between 1909 and 1912. The site consists of extensive artifact scatter features. The features include terraces, an area with two metal hardware concentrations possibly representing portable blacksmithing, charcoal and metal waste fragment dumping, a trash pit, and a two-track road. Artifacts include bottle fragments, firebricks, porcelain and metal buttons, tins and canisters, hole-in-cap cans, and a 1906 Barber Dime.

3.2 Historic Period Sites and Components Not Yet Evaluated For Eligibility

There are numerous historic period sites throughout the project area that have been identified but have not yet been evaluated for eligibility for the NRHP. A key component of the Project-specific Programmatic Agreement is the preparation of a HPTP to address effects to historic properties. At this time, it is not known whether these sites will be determined eligible for inclusion in the NRHP and whether these sites warrant preservation in place. However, for the purposes of this analysis, all unevaluated sites are assumed to be Section 4(f) resources and have been grouped below into similar categories, based on assumed eligibility for the NRHP. Figure 10 (a, b, and c) show site locations within the project area, however these maps have been redacted from the public version of this document as described under 36 CFR 800.11(c). Information on archaeology sites is excempt from both the Freedom of Information Act and the California Public Records Act.

- CA-INY-2277H is a historic period refuse scatter that includes cans, bailing wire, blasting powder tins, metal waste fragments, and bottle glass.
- CA-INY-4590H is the route of the original north-south road in Inyo County, prior to its incorporation into the state road system in the 1920s. It is often referred to as the county "wagon road" in historic period documents. The route within the vicinity of the area of potential effects is described by Costello and Marvin (1992) as a "dirt track, ca. 6 feet wide."
- CA-INY-4591H is composed of the water conveyance system and related features of the Los Angeles Aqueduct. Within the project area, the recorded segment is the large concrete-lined open canal. Total length of the aqueduct measures 350 miles as it extends through four counties (Inyo, Mono, Kern, and Los Angeles).
- CA-INY-4763H encompasses the stone foundations of Farley's Mill, which processed silver ore from the Coso Mountains between approximately 1860 and 1867. An associated artifact scatter contains square nails, amethyst glass, hole-in-cap cans, and medicine bottle shards, among other things.
- CA-INY-5350H is the Cartago Townsite Dump, an extensive historic period/modern dump composed of mostly domestic material, including food and beverage containers, tablewares, furniture, appliances, personal items, and automobile parts. Artifacts date from the 1880s to modern. This site includes eight discrete dumping loci.
- CA-INY-5953H is a rectangular rock alignment, ovate depression, and an extensive refuse scatter composed mostly of 1910-1940's-era food containers.
- CA-INY-5973H is a relatively discrete trash scatter that includes vent-hole and hole-in-cap cans, amber and amethyst glass, stoneware fragments, and assorted car pieces from a Model T or Model A.
- CA-INY-5986H is a historic period trash dump with three loci. One locus contains hole-in-cap cans and amethyst glass, and the other two consist of coal

and metal waste fragment piles suggestive of blacksmithing. This site could be associated with construction of the Los Angeles Aqueduct or the Southern Pacific Railroad.

- CA-INY-6394H is a roughly half-mile segment of earthen ditch south of Cartago Creek, which diverted water from the creek into fields to the east and south. Thought to have been built by Augustus Walker in 1876, the ditch was in use until about 1929. Low rock walls and earthen berms helped control the flow of water at the ditch's lower (east) end. The westernmost and easternmost ends of the ditch have been destroyed by the Los Angeles Aqueduct and U.S. Highway 395, respectively.
- CA-INY-6397H is a shallow 3.5-mile-long hand-dug earthen ditch that crosses the project area roughly north to south. Parts of the southern portion of the ditch are lined with local stone.
- CA-INY-6398H is approximately 1.5 miles of hand-dug, unlined ditch designed to draw water from Olancha Creek toward an unnamed drainage to the north. The main ditch travels north, and a small spur departs the main ditch to the east. One collapsed wooden structure and two wooden sluice (water passage) gates are located along the main route.
- CA-INY-7768H (PLI-56) is a large site that contains a residential area and a work camp related to the construction of the Los Angeles Aqueduct between 1909 and 1912. The site contains extensive artifact scatter and 13 features. The features include structure locations, rock alignments, trash scatter, a blacksmithing area, a rock cairn, and a 1919 survey benchmark. Artifacts include glass, metal, ceramics, concrete, iron, fire bricks, and wood.
- CA-INY-9101H contains discontinuous segments of deteriorated roadbed parallel to the west side of U.S. Highway 395. See also INY-7816H.
- CA-INY-9103H is a discrete can dump consisting of food cans that are 90 percent the same-sized hole-in-cap cans.
- CA-INY-9116H is a roughly one-quarter-mile overgrown segment of former State Highway 23 (now dirt), south of Ash Creek. A small concentration of historic period cans alongside the road is recorded as Locus A. This site may correspond to INY-4590H.
- CA-INY-371/H is an extensive multi-component (prehistoric and historic period) site that contains prehistoric variable-density scatter of ground stone, flaked stone, and pottery, with patches of midden, a rock ring, and three bedrock milling features. Sparse scatters of historic period artifacts (mainly cans and glass) were also recorded. Two historic period linear features cross the site roughly north to south: INY-7816H is a segment of the old Los Angeles-Owens Valley/River Road, which was later incorporated into Highway 23; INY-6397H is a rock-lined ditch.
- CA-INY-5958/H is an extensive multi-component (prehistoric and historic period) site that contains prehistoric sparse scatter of flaked stone with an Elko

Series point, a mano, and a few ground stone fragments. The historic period component contains a scatter of ceramic insulators, sanitary cans, and other items, along with the remains of two wood and stone foundations.

- CA-INY-7259/7260/H is an extensive multi-component (prehistoric and historic period) site that contains prehistoric low-density scatter of flaked stone and non-diagnostic flaked stone tools, along with a historic period component that includes scattered refuse, a rock cairn, and a wood post. The Southern Pacific Railroad grade (INY-4607/H) crosses the site area.

3.3 Prehistoric Sites and Components (Regardless of National Register Eligibility)

While many of the prehistoric resources were evaluated previously for National Register eligibility, Caltrans has decided to revisit the eligibility determinations for the prehistoric sites. Therefore, current NRHP status was not considered for this scoring system. NRHP eligibility for these sites will be re-examined as a component of the HPTP. For the purposes of this Section 4(f) evaluation, all identified prehistoric sites are considered to be eligible for the NRHP. Figure 10 (a, b, and c) show site locations within the project area, however these maps have been redacted from the public version of this document as described under 36 CFR 800.11(c). Information on archaeology sites is excempt from both the Freedom of Information Act and the California Public Records Act.

- CA-INY-7785 (PLI-74) is a Native American ethnographic location. Potential associated features are indicated by rough alignments on terraced flats and a cluster of boulders.
- CA-INY-5967 contains projectile points and other bifaces, retouched flakes, flaked stone, ground stone, a bone awl, and a buried hearth. The hearth dates back to AD 245.
- CA-INY-5984 is a site that contains artifacts dating back to AD 1250. Artifacts include a house floor and associated hearth, bedrock milling features, projectile points, pottery, glass beads, and midden deposits.
- CA-INY-6021 contains a house floor, hearth, projectile points and other bifaces, retouched flakes, flaked stone, a bone awl, shell beads, and faunal remains. Artifacts are estimated to be between 55 BC and AD 600.
- CA-INY-6263 is a site with milling features and rock rings, and projectile points. Carbon dating suggests that this site is dated between AD 390 and AD 435.
- CA-INY-7748 (PLI-36) consists of flaked stone scatter, flaked and ground stone tools, and nine other features. Artifacts include projectile points, bifaces, flaked stone, and a portable milling slab.
- CA-INY-43 is a habitation site with two loci containing numerous milling features, obsidian flakes and tools, Owens Valley Brownware, portable groundstone, midden and glass beads.

- CA-INY-291/H is an artifact scatter with blue glass beads, amethyst glass, flaked stone, a single piece of pottery, and a "house ring" that consists of a shallow depression surrounded by about three dozen dispersed rocks.
- CA-INY-352 is a sparse scatter of sand-blasted flaked stone tools and flaked stone located on a deflated Pleistocene terrace.
- CA-INY-4835 is an extensive but sparse scatter of flaked stone and non-diagnostic flaked stone tools.
- CA-INY-4837 is an extremely sparse scatter of fewer than 100 flakes, located on either side of a dry drainage.
- CA-INY-5960 is a sparse scatter of lithics limited to one metate, two metate fragments, a Cottonwood point, and two flake tools.
- CA-INY-5964 is a low-density lithic scatter with two projectile points and three pieces of ground stone.
- CA-INY-5965 consists of four bedrock milling slicks in a 10-x-25-meter area. No associated artifacts were discovered here.
- CA-INY-5974 is a low-density flake scatter with four biface fragments.
- CA-INY-5975 is a medium-sized flaked and ground stone scatter with four bedrock milling slicks and a possible hearth. Artifacts include manos and metates, brownware shards, Cottonwood projectile points, a clay pipe fragment, and a sparse scatter of flaked stone.
- CA-INY-5979 is a sparse- to moderate-density scatter of 150-200 flakes.
- CA-INY-5981 is a sparse scatter of about 24 flakes, with a few non-diagnostic flaked stone tool fragments, a fragment of ground stone, and burned large mammal bone.
- CA-INY-5982 is a sparse flake scatter with two biface fragments, a mano, two potsherds, and a hammerstone.
- CA-INY-5987 is a sparse scatter of flakes with one Rose Spring projectile point and an obsidian flake tool.
- CA-INY-5991 is a small low-density flake scatter with one Elko Series projectile point.
- CA-INY-6263 is a variable-density scatter of flaked and ground stone artifacts, with 21 bedrock milling features, three rock rings, three rock art features (boulders with cupules), and visible surface midden.
- CA-INY-6498 is a small, discrete scatter of about 30 obsidian flakes and a biface fragment.
- CA-INY-7720 (PLI-5) is a site that contains prehistoric flaked stone scatter. The site contains obsidian flakes, a chert flake, and obsidian artifacts.

- CA-INY-7722 (PLI-7) contains obsidian flaked stone scatter. Flaked stone concentrations and granitic bedrock milling features with grinding sticks are also part of this site.
- CA-INY-7723 (PLI-8) contains obsidian flaked stone scatter. The scatter includes widely scattered obsidian flakes, biface fragments, and a bedrock milling slick.
- CA-INY-7727 (PLI-12) contains low-density obsidian flaked stone scatter.
- CA-INY-7729 (PLI-16) is a site that contains low-density flaked stone scatter that includes obsidian flakes and obsidian biface.
- CA-INY-7730 (PLI-17) contains low-density obsidian flaked stone scatter.
- CA-INY-7733 (PLI-20) is a discrete site that consists of light- to medium-density flaked stone scatter along with formed tools. Artifacts include obsidian projectile point fragments, bifaces, milling slab fragments, handstones, and pottery sherds. The pottery sherds indicate that the site dates to the Marana Period.
- CA-INY-7734 (PLI-22) is a widespread site with flaked and ground stone scatter and one bedrock milling feature. Artifacts include millings slabs and scatter, handstones, pottery fragments, biface fragments, projectile points, and a steatite vessel wall fragment. The site was used in the Marana Period and also the earlier Haiwee Period.
- CA-INY-7740 (PLI-28) is a small site that contains the flaked stone scatter of obsidian flakes and biface fragments.
- CA-INY-7747 (PLI-35) contains low density obsidian flaked stone scatter. Material observed consisted of flakes, flaked stone concentration, and a small piece of incised slate found at the site.
- CA-INY-7749 (PLI-37) is a large site that contains widespread flaked stone scatter of 13 tools, over 100 obsidian flakes, and one milling feature. The evidence collected at the site suggests that there are Haiwee Period deposits in the area.
- CA-INY-7753 (PLI-41) is a small site with diffuse obsidian flaked stone scatters. Materials include nine artifacts and about 50 flakes.
- CA-INY-7754 (PLI-42) is a small discrete site that contains one bedrock mortar outcrop and pestle. The bedrock mortar is a low, flat granite fieldstone that showed signs of use. The pestle was found nearby.
- CA-INY-7755 (PLI-43) is a large prehistoric flaked stone scatter site that contains numerous artifacts and flaked stone of various toolstone materials. Thirty-two artifacts were recorded. Flaked stone consisting of thousands of obsidian flakes was recorded.
- CA-INY-7756 (PLI-44) is a site that consists of milling equipment and pottery. Bedrock mortars and worn milled milling slicks were located, as well as pottery fragments. The site use is dated to the late Marana Period.

- CA-INY-7757 (PLI-45) is a small site that consists of just two obsidian tools, both projectile points. This site is dated to the late Archaic/Marana Period.
- CA-INY-7765 (PLI-53) is a flaked stone scatter site. Artifacts include tools, obsidian flakes, and one rare basalt flake. The site also includes a bedrock mortar.
- CA-INY-7773 (PLI-62) is a site that contains prehistoric and historic period artifacts and features, such as pottery sherds, beads, flaked stone, and rock shelters. Historic period artifacts include cans, wire cables, wood, and a small metal tag. The pottery fragments may suggest the site was used for food and water storage.
- CA-INY-7778 (PLI-67) is a large site that contains milling features, flakes, pieces of pottery.
- CA-INY-7780 (PLI-69) is a low-density site that contains prehistoric flaked stone scatter. The site is one of the few locations that contain basalt flakes. The site dates to the Newberry Period.
- CA-INY-7781 (PLI-70) is a site that contains a single granite outcrop with one milling surface.
- CA-INY-7784 (PLI-73) is a low-density site that contains ceramic and flaked stone scatter. Examples of cultural materials found at the site are pottery sherds, obsidian flakes, biface fragments, and a baked clay object.
- CA-INY-9114 is a low- to moderate-density scatter of flaked stone with five biface fragments.
- CA-INY-371/H is an extensive multi-component (prehistoric and historic period) site that contains prehistoric variable-density scatter of ground stone, flaked stone, and pottery, with patches of midden, a rock ring, and three bedrock milling features. Sparse scatters of historic period artifacts (mainly cans and glass) were also recorded. Two historic period linear features cross the site roughly north to south: INY-7816H is a segment of the old Los Angeles-Owens Valley/River Road, which was later incorporated into Highway 23; INY-6397H is a rock-lined ditch.
- CA-INY-5958/H is an extensive multi-component (prehistoric and historic period) site that contains prehistoric sparse scatter of flaked stone with an Elko Series point, a mano, and a few ground stone fragments. The historic period component contains a scatter of ceramic insulators, sanitary cans, and other items, along with the remains of two wood and stone foundations.
- CA-INY-7259/7260/H is an extensive multi-component (prehistoric and historic period) site that contains prehistoric low-density scatter of flaked stone and non-diagnostic flaked stone tools, along with a historic period component that includes scattered refuse, a rock cairn, and a wood post. The Southern Pacific Railroad grade (INY-4607/H) crosses the site area.

3.4 Cultural Landscape/Traditional Cultural Property Not Yet Evaluated for Inclusion to the National Register

Owens Lake Traditional Cultural Landscape

The area surrounding the Owens Lake may be recognized as a traditional cultural landscape that may contain potential NRHP-eligible districts or Traditional Cultural Properties. These potential historic districts will be delineated and evaluated for NHRP eligibility as part of the HPTP, which is currently being prepared for the project. Archaeological sites contained within the project area (both those that are individually eligible for the NRHP and some sites that may be found ineligible on their own) could be viewed as contributors to such a district and provide information to understanding the culture and history of the region as a whole. An Owens Lake traditional cultural landscape would also include traditional resource gathering areas in and around the Owens Lake area. After careful consideration and taking into account recent ethnographic studies and Native American concerns, Caltrans, BLM, and FHWA decided on a preliminary set of boundaries to use in this Section 4(f) Evaluation to represent the potential traditional cultural landscape (see Figure 9 below). The boundaries listed in this report are subjective and are likely to change depending on comments received during the circulation period. For this document, lines were drawn from the crests of the Sierra Nevada Mountain range and the Inyo-White Mountains surrounding the Owens Lake.

The Programmatic Agreement provides for development of an ethnographic study to identify and avoid, minimize or mitigate any effects to a potential cultural landscape as an element of the HPTP. In the interim, and for the purposes of this Section 4(f) evaluation, the Owens Lake traditional cultural landscape is considered to be a Section 4(f) resource.

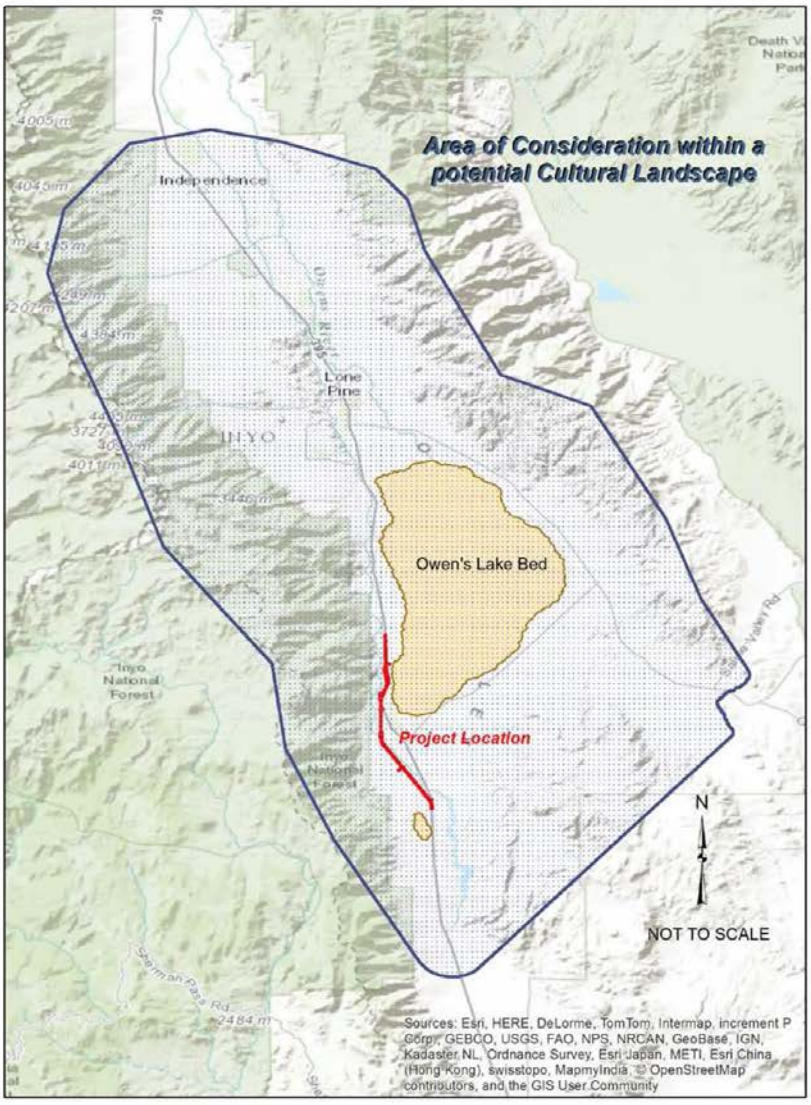


Figure 9 Area of Consideration for the Owens Lake Traditional Cultural Landscape

3.5 Undiscovered Sites

There is a high potential that there are archeological sites in the immediate area that have not yet been identified and could be discovered either during further evaluation or project construction. These sites would be treated as late discoveries as outlined in the Programmatic Agreement. A key component of the Project-specific Programmatic Agreement is the preparation of a HPTP to address effects to resources that may be discovered in the course of implementing the undertaking. Elements of the HPTP include provisions for identifying new sites that may be currently undiscovered. At this time, we cannot know whether these sites warrant preservation in place.

If archaeological sites are discovered during construction, FHWA would determine if a Section 4(f) exception applies under 23 CFR 774.13(c) or if an evaluation is necessary. The Section 4(f) process would be expedited in situations where preservation in place is warranted and a Section 4(f) evaluation is required. In such cases, the evaluation of feasible and prudent alternatives would take into account the level of investment already made. The review process, including consultation with other agencies, would be shortened as appropriate consistent with the process set forth in Section 106 of the National Historic Preservation Act regulations, and will include Native American tribes that may attach religious and cultural significance to sites discovered.

Because the U.S. Department of the Interior has a responsibility to review individual Section 4(f) evaluations and is not usually a party to the Section 106 process, the department would be notified and any comments they provide would be considered within a shortened response period.

Chapter 4 Description of Use and Impacts on the 4(f) Properties by Alternative

This section describes how the project build alternatives would use land from the Section 4(f) resources.

A Finding of Adverse Effects under Section 106 was completed for the project in March 2014. Adverse effects to archaeological sites and historic properties would include the physical destruction of or damage to all or parts of properties. Adverse effects to the Owens Lake traditional cultural landscape would similarly include physical destruction or damage to portions of the landscape, though on a much smaller scale as the landscape encompasses a large area (see Figure 9). The effects would be the result of construction activity, ranging from surface scraping/preparation to deep cuts that have the potential to completely eliminate a site. Where the expressway will be built above grade, sites may be subject to burial under fill; however, even in these situations, extensive surface scraping and ground preparation are expected. Impacts are anticipated only from permanent incorporation, or right-of-way acquisition, of Section 4(f) land.

For purposes of this Section 4(f) Evaluation, each alternative was defined as encompassing an areas of use that extending 120 feet from the edges of the new roadway. For most parts of the proposed alignments, which are designed with separated travel directions, the area of use is approximately 450 feet wide. Figure 10 (a, b, and c) show site locations within the project area, however these maps have been redacted from the public version of this document as described under 36 CFR 800.11(c). Information on archaeology sites is excempt from both the Freedom of Information Act and the California Public Records Act.

For purposes this Section 4(f) evaluation, resources have been considered by type that are categorized as prehistoric, historic period, and multi-component (sites that contain both prehistoric and historic period artifacts) archaeological sites, as well as architectural resources.

The No-Build Alternative is not discussed in this section, as it would not include any of the elements proposed by the build alternatives and would not result in any use of Section 4(f) resources. The No-Build Alternative is discussed in Section 1.5, Avoidance Alternatives.

Table 4 provides a summary of direct use by category type and alternative. A master table, including site numbers impacted by alternative, is included in Chapter 11 of this evaluation document.

Table 4 Direct Use of Identified 4(f) Properties by Alternative

	Alt 1	Alt 2	Alt 2A	Alt 3	Alt 4	CT Pref Alt	All
Archaeological Sites (Prehistoric)	9	11	8	16	22	17	45
Archaeological Sites (Historic Period)	13	14	20	20	19	21	35
Archaeological Sites (Multi-Component)	6	6	5	7	9	10	15
Owens Lake Traditional Cultural Landscape	1	1	1	1	1	1	1
Total	29	32	34	44	51	49	96

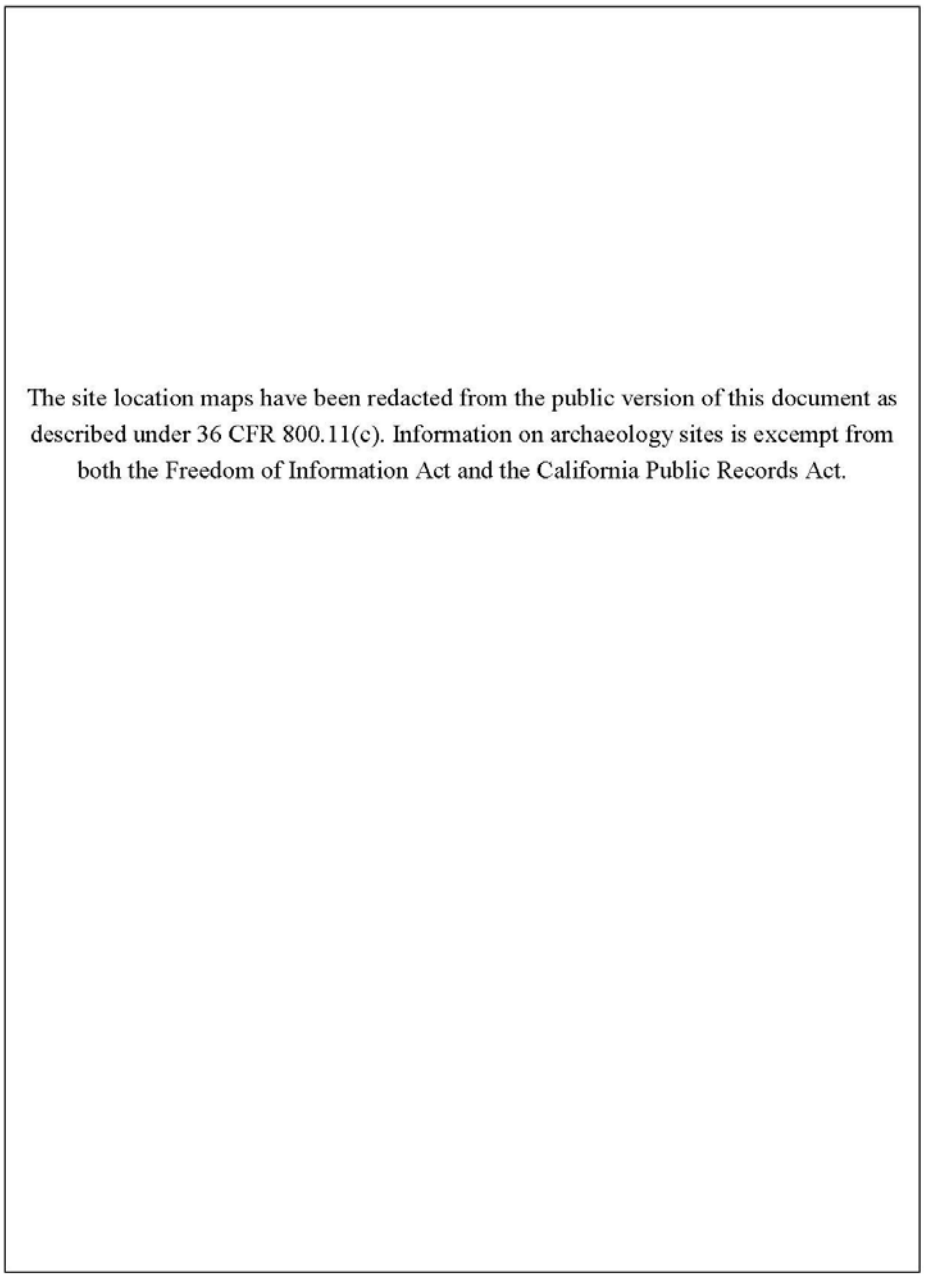


Figure 10a Cultural Resources with Study Area and Site Locations

Section 4(f) Evaluation for the Olancha – Cartago 4-Lane Project

The site location maps have been redacted from the public version of this document as described under 36 CFR 800.11(c). Information on archaeology sites is excempt from both the Freedom of Information Act and the California Public Records Act.

Figure 10b Cultural Resources with Study Area and Site Locations

The site location maps have been redacted from the public version of this document as described under 36 CFR 800.11(c). Information on archaeology sites is excempt from both the Freedom of Information Act and the California Public Records Act.

Figure 10c Cultural Resources with Study Area and Site Locations

In addition to direct effects to Section 4(f) resources, Caltrans evaluated whether proposed alignments would result in additional effects (beyond direct use) to such properties. Additional effects are impacts that would substantially impair the activities, features, and/or attributes that qualify those properties for coverage under the Section.

At this time, no traditional gathering areas have been identified within the project area. Known archaeological sites are not open or available to the general public and the location and attributes of each site are kept confidential as required under the provisions of:

- Section 304 of the National Historic Preservation Act
- Archaeological Resources Protection Act
- Regulations 43 Code of Federal Regulations Section 7.18
- Section 6254.10 of the California Government Code relating to the disclosure of archaeological site information and information obtained in consultation with tribes
- Section 6254(r) of the California Government Code regarding records of certain Native American places.

As stated earlier, the location of identified archaeological sites is confidential. The build alternatives would destroy and/or alter both identified and unidentified sites. However, the sites are not intended to be accessible to the general public, so construction of the proposed project would have no impact on accessibility of the sites.

Chapter 5 Avoidance Alternatives Analysis

Section 774.17 of 23 CFR states that an alternative that would avoid the use of Section 4(f) resources [avoidance alternative] must be selected if it is determined to be feasible and prudent. An avoidance alternative is feasible and prudent if it "does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property."

The purpose of this chapter is to analyze any avoidance alternatives to determine whether they can be considered both feasible and prudent. Alternatives which result in the use of Section 4(f) resources are analyzed in Chapter 8 – Least Overall Harm Analysis.

The regulations define an alternative as not feasible "if it cannot be built as a matter of sound engineering judgment," and provide direction for determining whether an alternative is prudent. An alternative is not prudent if:

i. It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
ii. It results in unacceptable safety or operational problems;
iii. After reasonable mitigation, it still causes:
    a) Severe social, economic, or environmental impacts;
    b) Severe disruption to established communities;
    c) Severe disproportionate impacts to minority or low-income populations; or
    d) Severe impacts to other federally protected resources;
iv. It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
v. It causes other unique problems or unusual factors; or
vi. It involves multiple factors listed above, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

A total of six build alternatives were developed for this project, spanning a variety of locations along and to the west of the existing alignment (see Figures 3 through 8 for alternative locations).

The development of alternatives to the east of the existing alignment was not possible due to the constraint of Owens Lake. First, moving the project toward the east would place the alignment within the historic boundary of Owens Lake, which has been determined to be a jurisdictional waterway by the U.S. Army Corps of Engineers. Additionally, the Cartago Wildlife Area, a 218 acre freshwater wetlands and springs protected habitat located directly east of Cartago, is considered a Section 4(f) property. Another eastern alternative route that was considered would pass through grasslands just to the east of the existing alignment near State Route 190 in Olancha. However, large areas of jurisdictional wetlands are located within the boundaries of this proposed alternative, and the State is required to consider alternatives that avoid jurisdictional wetlands. Even with reasonable mitigation, each of these three proposed eastern alternatives would severely

impact other federally protected resources and cause severe environmental impacts. Accordingly, none of these eastern alternatives are both prudent and feasible, and on that basis were rejected.

As to moving the project further west of the existing Highway 396 alignment, there is no feasible and prudent alternative that can be built any further west than the current proposed build alternatives. Any other possible western alternatives would end up encroaching on the alluvial slopes toward the granitic block of the Sierra Nevada, rendering the project impossible to build as a matter of sound engineering judgment because of the steep and rocky mountain slopes, and therefore infeasible (see Figure 9).

Moreover, the Owens Lake traditional cultural landscape (treated for purposes of this evaluation as a Section 4(f) resource) surrounds Owens Lake and runs to the base of the surrounding mountain ranges (see Figure 9). As stated above, an alternative that encroaches on the mountain slopes would not be feasible. Also, an alternative in this area would infringe on the traditional cultural landscape and result in severe environmental impacts, and would therefore not be prudent. Finally, an alternative in this area would most likely require acquisition of National Forest lands and could potentially impact protected Sierra Nevada bighorn sheep (a federal endangered species), resulting in severe impacts to the environment and to other federally protected resources. As a result of all of the above, there is no feasible and prudent alternative further east or west of the current proposed alternatives.

A No-Build Alternative was also included for analysis.

The Owens Lake traditional cultural landscape, treated for purposes of this evaluation as a Section 4(f) resource, encompasses much of the area surrounding the Owens Lake, as shown in Figure 9. It is wedged between the eastern edge of the Sierra Nevada Mountain range and the Inyo-White Mountains. Numerous known archaeological sites dot the valley floor throughout the project area as well as the mountain areas that border the project.

In order to identify historic properties in the project area, Caltrans consulted archival sources and conducted field investigations within the project study area for each alternative under consideration. Additionally, Caltrans used forensic dogs to identify boundaries of a Native American cemetery located within the project area. Each study area encompasses the existing and proposed right-of-way and extends beyond the existing right-of-way boundaries to include complete archaeological site boundaries. In addition, Caltrans consulted the Native American Heritage Commission and the Owens Valley Indian Community, which included representatives of the Big Pine Paiute Tribe, the Timbisha Tribe, the Lone Pine Paiute-Shoshone Tribe, the Bishop Paiute Tribe, and the Fort Independence Paiute Tribe, about potential historic properties within the project area.

As a result of these investigations, Caltrans obtained a significant amount of data regarding historical properties located within the study areas for each project alternative. For example, current data shows that 50 archaeological sites exist throughout the entire

length of the study area of Alternative 3, and 59 archaeological sites exist throughout the entire length of the study area of Alternative 2. Calculating the greatest distance between these two project study areas shows a distance of 2900 linear feet. The area between these two alternatives' study areas has not been surveyed for archaeological sites. However, the probability of encountering unidentified sites anywhere in this area, in proximity to Owens Lake and between mountain ranges, is very high. Table 5, below, shows the total number of known archaeological sites in each study area, as well as the distances between them. An evaluation as to the type, significance and value of each site is shown in Chapter 8 Least Overall Harm Analysis. However, pursuant to Section 304 of the National Historic Preservation Act (NHPA), FHWA has withheld from disclosure to the public all information relating to the location or character of these archaeological sites to prevent any risk of harm to the resource that may result from disclosure.

Table 5 Impacted Sites by Alternative

	Alt 1	Distance Between Alts	Alt 2	Distance Between Alts	Alt 2A	Distance Between Alts	Alt 3	Distance Between Alts	Alt 4	Distance Between Alts	CT Pref Alt
Archaeological Sites (Prehistoric)	9		11		8		16		22		17
Archaeological Sites (Historic Period)	13		14		20		20		19		21
Archaeological Sites (Multi-Component)	6		6		5		7		9		10
Total Sites	28	0 Feet	31	1600 Feet	33	3750 Feet	43	2900 Feet	50	2700 Feet	48

Based on the relatively consistent findings among the study areas of all the alternatives shown above, as well as the many known sites in areas that border the project area, it is reasonable to conclude that additional similar sites would likely be found in similar quantities in these unexplored areas. Additionally, Caltrans has obtained anecdotal evidence through consultation with other agencies and Native American Tribes that there may be undiscovered archaeological sites as well as sacred or religious sites within the project area. Caltrans was unfortunately unable to learn specifics as to locations or type and potential significance of these probable sites.

Following its analysis of the existing data, Caltrans then explored possible avoidance of the use of Section 4(f) resources. As a result of these considerations, Caltrans determined that there were no avoidance alternatives that would not unacceptably compromise design and safety standards to the point that the project could not be approved. Avoidance alternatives investigated included:

- Weaving around known sites: This would result in curvature that would be both much less safe for the travelling public and more difficult to build and maintain.

- Developing an alternative that would bring the roadway closer to the mountains (and therefore away from known sites within the Owens Valley floor): This would create safety hazards due to the intensity of natural events that frequently occur in the area, such as flash floods, heavy snow, and high winds. Alternative 4 is as far west as possible due to the proximity to the Sierra Nevada mountain range. It is also highly likely that there are cultural resources in the area closer to the mountains that would be impacted and therefore would not constitute an avoidance alternative. Likewise, it is not possible to move towards Owens Lake, nor is it prudent to relocate the highway east of the lake, because of both potential impacts to cultural resources and jurisdictional wetlands and the Cartago Wildlife Area as well as the greater amount of out of direction travel that would be required.

Additionally, the probability of encountering undiscovered sites under all of these scenarios is very high, as discussed above.

Based upon all the existing data, it was determined that a feasible build alternative that would avoid known and probable undiscovered archaeological sites, and would thus avoid the use of Section 4(f) resources, could not be developed. Therefore, the No-Build Alternative is the only alternative that avoids the use of Section 4(f) resources. Therefore, because the No-Build alternative is feasible from an engineering standpoint, it is evaluated below for a determination of prudence.

No-Build Alternative

The No-Build Alternative is the only alternative that would completely avoid the use of Section 4(f) resources within the project area. The No-Build Alternative would not upgrade this segment of U.S. Highway 395 to current highway design standards and would instead keep it in its current condition.

The No-Build Alternative does not meet the purpose and need for the project as discussed in 23 CFR 774.17, criterion i, as it would not accommodate increased traffic demand, would not improve safety, and would not provide route continuity.

The No-Build Alternative would keep in place the existing two-lane conventional highway at a time when traffic volumes are continuing to increase, thus resulting in unacceptable safety and operational problems, as discussed in criterion ii, above. The existing roadway will not accommodate the forecasted larger traffic volumes without further reduction of the level of service. Level of service is currently at D and is anticipated to be reduced to E in the future as more vehicles use this roadway. Faster moving traffic would continue to pass slower-moving vehicles in an unsafe manner, and the potential for head-on collisions would remain high because there is no protective median. Total accidents are already higher than the statewide average. This would not improve under the No-Build Alternative, and indeed is likely to become worse.

The No-Build Alternative does not cause severe impacts after mitigation as described in criterion iii, result in additional costs of an extraordinary magnitude as described in criterion iv, cause other unique problems or unusual factors as described in criterion v, or

cumulatively cause unique problems or impacts of extraordinary magnitude as described in criterion vi. Therefore, these criteria are not discussed further.

Because the No-Build Alternative does not meet the purpose and need for the project as outlined in criterion i and would result in unacceptable safety and operational problems as outlined in criterion ii, this alternative has been determined not to be a prudent alternative under Section 4(f).

Based on this evaluation, there are no feasible and prudent alternatives that would avoid impacts to Section 4(f) resources.

Chapter 6 Measures to Minimize Harm

Caltrans has coordinated with cultural resources staff, agencies, the Owens Valley tribal community, and stakeholders to ensure that every effort has been made to avoid identified sites. (See Chapter 7 Coordination for a discussion of all that has been done to date.)

Based upon ideas resulting from this coordination, Caltrans has incorporated various design modifications that might reduce impacts to Section 4(f) resources. These include:

- Reducing right-of-way for the Caltrans Preferred Alternative to avoid two known archaeological sites
- Making adjustments in local road connections to avoid known archaeological sites
- Using steeper side slopes to reduce potential impacts to known and probable undiscovered sites
- Adjusting the vertical profile of the roadway to cap archaeological sites if it is determined that they should be encapsulated in situ.

In addition, all of the proposed project's build alternatives would also incorporate the following measures to minimize harm to Section 4(f) resources:

1. Cultural resources that can be avoided during construction will be designated as environmentally sensitive areas. An Environmentally Sensitive Area Action Plan will be implemented to protect eligible sites from construction impacts associated with this project.

2. A project-specific Programmatic Agreement among FHWA, the BLM, the SHPO, and the ACHP was signed July 25, 2014. The project-specific Programmatic Agreement stipulates that Caltrans, on behalf of FHWA, will develop and implement a HPTP that will complete the identification effort (after access is gained to all properties) in the Area of Potential Effects, evaluate the potential properties for the NRHP, and provide a resolution of adverse effects to historic properties.

   Specific aspects addressed will include, but will not be limited to (see Appendix A for a complete copy of the Programmatic Agreement), the following:

   - Frequent consultation with tribes and other consulting parties;
   - Use of methods to eliminate the overlap of site boundaries as much as possible;
   - Implementation of a geomorphologic study to identify sensitivity for buried resources;
   - Consultation with the SHPO concerning the NRHP eligibility of potential properties;

- Design of methods to identify and protect properties that can reasonably be preserved in conjunction with development of project design details;
- Definition of a research design or plan for the mitigation, analysis and sharing of study results for properties which cannot be avoided, including management of cultural resources in the project area and surrounding region to address cumulative and indirect effects and public outreach efforts.

3. When archaeological sites are discovered during construction, FHWA would determine if a Section 4(f) exception applies under 23 CFR 774.13(c) or if an approval is necessary. Where preservation in place is warranted and a Section 4(f) approval would be required, the Section 4(f) process would be expedited. In such cases, the evaluation of feasible and prudent alternatives would take into account the level of investment already made. The review process, including the consultation with other agencies, would be shortened as appropriate consistent with the process set forth in Section 106 of the National Historic Preservation Act regulations and would include Native American tribes that may attach religious and cultural significance to the discovered sites. Because the U.S. Department of the Interior has a responsibility to review individual Section 4(f) evaluations and is not usually a party to the Section 106 process, they would be notified and any comments they provide would be considered within a shortened response period. Any sites discovered during construction would be addressed under the stipulations of the Project-specific Programmatic Agreement and the HPTP.

4. If additional cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission, who would then notify the Most Likely Descendent. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable. Federal agencies, such as the BLM, have additional, specific responsibilities under 43 Code of Federal Regulations 10 that must be met in the event human remains are discovered on land under their jurisdiction. Pursuant to the Project-specific Programmatic Agreement , a plan consistent with PRC 5097.98 and 43 CFR 10 for the respectful treatment of human remains and associated items will be developed in consultation with the Most Likely Descendent, consulting tribes upon request of the Most Likely descendent, and the BLM.

Chapter 7 Coordination

A Section 4(f) evaluation must include documentation of the Section 106 process. Prior to making Section 4(f) approvals under Section 774.3(a), the Section 4(f) evaluation must be provided for coordination and comment to the official(s) with jurisdiction over the Section 4(f) resource and to the Department of the Interior. For historic sites, the officials with jurisdiction are the SHPO and the ACHP. Since many of the historic sites are also on land managed by a federal agency, the Bureau of Land Management, coordination must also occur with that agency.

A Section 4(f) evaluation prepared under Section 774.3(a) must include sufficient supporting documentation to demonstrate why there is no feasible and prudent avoidance alternative, and it must summarize the results of all possible planning to minimize harm to the Section 4(f) resource. For this project, agency coordination includes coordination with the SHPO, ACHP, and the BLM (the federal land managing agency). A summary of this coordination is listed below.

FHWA and Caltrans initiated consultation with the SHPO in August 2004 with the submittal of the 2003 Historic Property Survey Report. The SHPO concurred with the eligibility determinations in a letter dated May 27, 2004. Consultation with the SHPO continued with the submittal of the 2010 Supplemental Historic Property Survey Report. The SHPO concurred with the eligibility determination by letter dated March 23, 2010. A revised Archaeological Survey Report was submitted to the SHPO in July 2013.

A Finding of Adverse Effects was completed for the project in March 2014. The nature of adverse effects would include the physical destruction of or damage to all or parts of properties. FHWA and Caltrans consulted with the SHPO on this finding. In a letter dated May 19, 2014, the SHPO concurred with the finding in the Finding of Adverse Effect and agreed that Caltrans should proceed with the development of a HPTP.

Native American consultation efforts included sending an information request to the Native American Heritage Commission and the Owens Valley Indian Community, which included representatives of the Big Pine Paiute Tribe, the Timbisha Tribe, the Lone Pine Paiute-Shoshone Tribe, the Bishop Paiute Tribe, and the Fort Independence Paiute Tribe. Throughout the course of cultural surveys and the preparation of studies, Caltrans continued to meet with the Owens Valley Indian Community to update members on the status of the project, including updates of the Section 106 compliance efforts.

Summary of Coordination

Agency Consultation

April 7, 2004: Caltrans submitted the Historic Property Survey Report to the SHPO for review and concurrence.

May 24, 2004: The SHPO concurred with Caltrans' determinations on the NRHP eligibility of several cultural resources in the proposed project's Area of Potential Effects.

January 20, 2010: Caltrans submitted the Supplemental Historic Property Survey Report to the SHPO for review and concurrence.

March 23, 2010: The SHPO concurred with Caltrans' determinations on the NRHP eligibility of several cultural resources in the proposed project's Area of Potential Effects identified in the Supplemental Historic Property Survey Report.

February 25, 2011, March 24, 2011, and April 11, 2011: BLM attended Caltrans Project Development Team Meetings (PDTs) to discuss the Preferred Alternative recommendation.

February 28, 2012: A teleconference was held between Caltrans Cultural staff, BLM, and Pacific Legacy to discuss Phase II work. A new meeting was scheduled for March 5, 2012.

March 5, 2012: A meeting was held between staff from Caltrans (Cultural and Generalist), BLM, and FHWA to further discuss BLM concerns, including Section 106 lead, obtaining a permit to enter BLM land to perform archaeological studies, and the results of tribal consultation.

March 12, 2012: Follow up teleconference between Caltrans Cultural staff, BLM, and Pacific Legacy was held.

April 10, 2012: Pacific Legacy delivered documents requested by BLM on this day. A phone call confirming receipt of documentation was received by Caltrans Cultural staff from BLM on April 12, 2012.

April 18, 2012: A teleconference was held between Caltrans Cultural staff and BLM discussing Phase II procedures and permit processing.

July 11, 2012: A meeting was held between BLM and Caltrans Cultural staff discussing permit issues.

July 31, 2012: A field review was held with BLM and Caltrans Cultural staff to visit sites and discuss a plan of action.

July 10, 2013: Caltrans submitted the 2013 Archaeological Survey Report to the SHPO to provide an update regarding the ongoing consultation for the project.

December 2013: An agreement between Caltrans, the Federal Highway Administration, and the Bureau of Land Management was signed to clarify roles and responsibilities of agencies for this project.

April 11, 2014: Caltrans submitted the Finding of Adverse Effect to the SHPO for review and concurrence.

May 19, 2014: The SHPO concurred with Caltrans' determination of a Finding of Adverse Effect for the project.

July 25, 2014: The project-specific Programmatic Agreement between FHWA, the BLM, the California SHPO, and the ACHP was signed.

March 2013 – Current: Caltrans and FHWA met with the BLM to discuss environmental concerns and the finalization of this document, the need for a transportation easement from the BLM, and other topics as they came up.

November 13, 2014 – Caltrans and the ACHP conducted a conference call to bring the Advisory Council representative up to speed on the history and current status of the project.

Native American Tribal Consultation

Caltrans contacted the Native American Heritage Commission to identify any local Native American groups and individuals who might have interest in the project. The commission responded by providing a list of six Native American individuals who may have concerns about the proposed project or have special knowledge of the cultural resources in the project vicinity. On numerous occasions, Caltrans archaeologists met and corresponded with members and elders of tribes in the Owens Valley area.

June – August 2000: The Caltrans District Native American Coordinator contacted the Lone Pine Paiute-Shoshone Tribe chairperson to notify them of the proposed project and planned archaeological survey of the project area. The Tribal chairperson was asked to inform Caltrans of any special concerns.

January 31, 2001: A request was sent to the chairperson of the Lone Pine Paiute-Shoshone Reservation to appoint an Archaeological Monitor for Phase 2 archaeological excavations.

November 26, 2001: A request was sent to the chairperson of the Lone Pine Paiute-Shoshone Reservation to review the Phase 2 Research Design.

January 30, 2002: An Archaeological Survey Report (January 2002) was mailed to the Lone Pine Paiute-Shoshone Reservation Tribal Office and Archaeological Monitor for review.

February 5, 2002: Caltrans staff gave a presentation on the project and upcoming Phase 2 archaeological excavations to the Lone Pine Paiute-Shoshone Reservation tribal officers and the BLM.

March 8, 2002: Caltrans staff gave a presentation to the Lone Pine Paiute-Shoshone Reservation tribal members. The presentation included a summary of the highway project, project history, archaeological studies, the ethno-historic study, and dates for the upcoming Phase 2 archaeological excavations (March – June 2002).

March 2002 – July 2003: Interviews were conducted with Native Americans living in the project area and tribal representatives from the Lone Pine Paiute-Shoshone Reservation. Information from the interviews and information from other research were combined to

prepare the Olancha/Cartago Native American History. This effort was conducted under contract with Caltrans by Shelly Davis-King.

March 28, 2005: A progress report was submitted to the chairperson of the Lone Pine Paiute-Shoshone Reservation to provide updates on the status of the project. Copies of the following reports were also sent: *Lacustrine Lifestyles Along Owens Lake: NRHP Evaluation of 15 Prehistoric Sites for the Olancha/Cartago Four-Lane Project, U.S. Route 395, Inyo County, California* by Brian Byrd and Micah Hale; *Participants and Observers: Perspectives on Historic Native American Information From Independence to Haiwee Reservoir in Owens Valley for the Olancha/Cartago Four-Lane Project, U.S. Route 395, Inyo County, California* by Shelly Davis-King.

May 2, 2007: The Caltrans District Native American Coordinator contacted the Lone Pine Paiute-Shoshone Tribe chairperson, Ms. Marjianne Yonge, and tribal member, Mr. Terald Goodwin, to notify them of the proposed study to identify the Native American cemetery boundaries using forensic dogs. Their attendance during the study was requested, as well as any further knowledge they could provide regarding the area.

May 11, 2007 - May 12, 2007: Caltrans implemented a study using forensic dogs from the Institute for Canine Forensics to identify boundaries of a Native American cemetery located within the project area. Mr. Terald Goodwin, Lone Pine Paiute-Shoshone Tribal member, was onsite May 12, 2007.

January 27, 2009: The Caltrans District Native American Coordinator contacted the Native American Heritage Commission and the Lone Pine Paiute-Shoshone Tribal chairperson to notify them regarding potential human remains identified.

October 15, 2009: A Draft Archaeological Survey Report for the All-West Alternative was mailed to the Lone Pine Paiute-Shoshone Tribal Office for review.

March 16, 2010: A Final Archaeological Survey Report for the All-West Alternative was mailed to the Lone Pine Paiute-Shoshone Tribal Office.

September 1, 2011: The Caltrans District Native American Coordinator contacted the Lone Pine Paiute-Shoshone Tribe chairperson, Mr. Joseph, to notify him of the upcoming Phase II evaluation program for the Caltrans Preferred Alternative and request Tribal monitors during testing. Caltrans received a letter with the monitors' contact information on September 20, 2011.

December 20, 2011: An Archaeological Evaluation Proposal was mailed to the Lone Pine Paiute-Shoshone Reservation Tribal Office for review.

October 31, 2012: The Caltrans District Native American Coordinator met with the Lone Pine Paiute-Shoshone Tribal cultural resources coordinator, Ms. Kathy Bancroft, and discussed the status of the proposed Phase II evaluation program.

December 4, 2012: The Caltrans District Native American Coordinator contacted the Timbisha Tribe chairperson, Mr. George Gholson, and Tribal Historic Preservation

Officer, Ross Dewey, to notify them of the proposed project and planned archaeological studies within the project area.

December 12, 2012: Caltrans met with the Lone Pine Paiute-Shoshone Reservation cultural committee to introduce new staff and discuss updates to the project.

June 20, 2013: The Caltrans District Native American Coordinator contacted the Kawaiisu Tribe chairperson, David Robison, and the Big Pine Tribe of Owens Valley chairperson, Virgil Moose, and Tribal Historic Preservation Officer, Bill Helmer, to notify them of the proposed project and planned archaeological studies within the project area.

October 18, 2013: The Archaeological Survey Report for the Caltrans Preferred Alternative was mailed to the Big Pine Paiute Tribe of Owens Valley, Bishop Paiute Tribe, Independence Paiute Tribe, Lone Pine Paiute-Shoshone Tribe, and Timbisha Tribe for review.

January 10, 2014: The Caltrans District Native American Coordinator contacted the Kawaiisu Tribal representatives Cathy Paradise, David Robinson, Harold Williams, June Walker-Price, Patricia Henry, Ron Wermuth, and Robert Gomez to notify them of the proposed project and planned archaeological studies within the project area.

February 11, 2014: Caltrans met with representatives of the Big Pine Paiute Tribe of the Owens Valley, the Timbisha Tribe, the Lone Pine Paiute-Shoshone Tribe, the Bishop Paiute Tribe, and the Fort Independence Paiute Tribe to update them on the status of the project, including an update of the Section 106 compliance efforts and the draft Finding of Adverse Effect. Representatives from the BLM and FHWA were also in attendance.

March 2, 2014: A Draft Finding of Adverse Effect was mailed to the Big Pine Paiute Tribe of Owens Valley, Bishop Paiute Tribe, Independence Paiute Tribe, Lone Pine Paiute-Shoshone Tribe, and Timbisha Tribe for review.

March 17, 2014: Caltrans met with representatives of the Big Pine Paiute Tribe of the Owens Valley and Lone Pine Paiute-Shoshone Reservation to update them on the status of the project, including discussing the draft Finding of Adverse Effect. Representatives from the BLM and FHWA were also in attendance.

May 7, 2014: Caltrans held a field review with representatives from the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, and Bishop Paiute Tribe. Representatives from the BLM and the State Historic Preservation Office were also in attendance.

June 18, 2014: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Reservation, Big Pine Paiute Tribe of the Owens Valley, and Bishop Paiute Tribe, as well as staff from FHWA, the BLM, the California State Historic Preservation Office, and the ACHP to discuss details of the Project-specific Programmatic Agreement. Far Western Anthropological Group, the consultant that will be preparing the HPTP, also attended.

July 23, 2014: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, Timbisha Tribe, and Bishop Paiute Tribe, as well as staff from FHWA, the BLM, the California State Historic Preservation Office, the ACHP, and Far Western Anthropological Group to discuss the HPTP.

August 28, 2014: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, as well as staff from FHWA, the BLM, the California State Historic Preservation Office, the ACHP, and Far Western Anthropological Group to discuss the 4(f) Exception and the Caltrans Preferred Alternative.

November 6, 2014: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Independence Tribe, as well as staff from FHWA, the BLM, and Far Western Anthropological Group to obtain feedback on three components of the HPTP (the burial plan, traditional cultural properties and construction monitoring) prior to completion of the draft document.

March 19, 2015: Caltrans met with representatives of the Lone Pine Paiute-Shoshone Tribe, Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Independence Tribe, as well as staff from FHWA, BLM, and Far Western Anthropological Group to obtain feedback on the draft Historic Properties Treatment Plan prior to completion of the final document.

May 6, 2015: The final Historic Properties Treatment Plan was mailed to the Big Pine Paiute Tribe of Owens Valley, Bishop Paiute Tribe, Independence Paiute Tribe, Lone Pine Paiute-Shoshone Tribe, Timbisha Tribe, BLM, ACHP, and the California SHPO office.

Chapter 8 Least Overall Harm Analysis

If there is no prudent and feasible alternative to avoid harm to the Section 4(f) resource as determined in Chapter 5 – Avoidance Alternatives, then only the alternative that causes the least overall harm, in light of the statute's preservation purpose, can be chosen. While analysis of alternatives that would cause the least harm will be completed in the final Section 4(f) evaluation for the proposed project (which will be completed for the Final Environmental Document), some preliminary information about least harm is known at this stage. The least overall harm is determined by balancing the following:

i. Ability to mitigate adverse impacts to each Section 4(f) resource;

ii. Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features (document even if harm is substantially equal);

iii. Relative significance of each Section 4(f) property;

iv. Views of the officials with jurisdiction over each Section 4(f) property;

v. Degree to which each alternative meets the purpose and need;

vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and

vii. Substantial differences in costs among alternatives.

Not all uses of Section 4(f) resources have the same magnitude of impact, and not all features of Section 4(f) resources have the same quality or significance.

This analysis considers the impacts of each build alternative on the identified archaeological sites, both those that have been evaluated for the NRHP and those that have not, as well as impacts to the Owens Lake traditional cultural landscape. (See Table 4 – Direct Use of Identified 4(f) Properties by Alternative.) Impacts after implementation of the avoidance, minimization, and mitigation measures were analyzed. An analysis of the least overall harm to Section 4(f) resources by alternative is located in Section 8.2.

8.1 Methodology

In order to determine whether any build alternative would minimize impacts to Section 4(f) resources, Far Western Anthropological Research Group conducted an evaluation to provide a scoring system for known archeological sites. This scoring system was developed from the perspectives of archeologists and historians and then applied to the resources listed in Section 3.1, List and Description of Section 4(f) resources. Scores were calculated separately for prehistoric and historic period components, since evaluation and mitigation efforts generally follow different paths for each.

For prehistoric period archeological sites, a simple site typology was developed and a score assigned to each type (see Table 6). The score is an estimate of the relative research value of each type, and the attendant costs of any archaeological fieldwork required as

part of the project's compliance with cultural resource preservation law. For example, sites containing human remains are scored particularly high because of the many complications that the fieldwork would require at these sites. Caltrans and FHWA have committed to reevaluate all identified prehistoric period archaeological sites as part of the Historic Properties Treatment Plan (HPTP), so eligibility determinations for the National Register of Historic Places (NRHP) were not considered.

For historic period archaeological sites, NRHP status was considered for recently evaluated sites. Sites recommended or determined ineligible to the NRHP received a score of zero because they were judged to have no (or no remaining) research or interpretive value. The remaining historic period sites were classified under a general historic theme, such as water conveyance systems, railroads, work camps, ranches, and homesteads. All themes were assigned a score of five except for unassociated refuse scatters, which were assigned a score of two.

The scoring relates to the qualities and attributes that make the sites eligible under Criterion D of the National Historic Preservation Act. This means that this analysis considers historic properties in terms of their research and interpretive value, from the perspective of archaeologists and historians. This analysis does not address all of the cultural values ascribed to the potential traditional cultural landscape and the sites by culturally affiliated tribes. This Section 4(f) evaluation will provide an opportunity for these tribes to comment on the findings made here.

This analysis cannot with complete surety evaluate all potential impacts to the Owens Lake traditional cultural landscape and corresponding archeological sites, as there are many sites presumed to exist, but that are not yet discovered. However, the analysis provides a method to quantify impacts to cultural resources and to compare alternatives with one another. The ranking system helps to determine which alternative might have a reduced impact to Section 4(f) resources.

Prehistoric Sites Scoring Results

For prehistoric archaeological sites, a simple site typology was developed, with a score assigned to each type. The score is an estimate of the relative research value of each site type, as described in Table 6 below.

Table 6 – Assigned Scores for Each Type of Site

Site Type	Constituents	Score
Isolated Milling Feature	Milling slick or mortar without associated artifacts	1
Simple Flaked Stone	Flaked stone, no diagnostic artifacts	1
Complex Flaked Stone	Flaked stone, diagnostic artifacts	2
Simple Habitation	Flaked stone, ground stone, and/or pottery	5
Complex Habitation	Flaked stone, ground stone, and/or pottery, residential or thermal features	10
Complex Habitation/Human Remains	As above, but additional containing human remains	20

While many of the prehistoric resources have already been formally evaluated for the NRHP eligibility, both evaluated and unevaluated sites were considered in this scoring system. Current NRHP status was not considered. The results of this scoring, using the assigned score ranking system, are shown here in Table 7.

Table 7 Prehistoric Archaeological Site Types and Scoring for Alternatives

Type (score)	Alt 1		Alt 2		Alt 2A		Alt 3		Alt 4		CT Pref Alt	
	# Sites	Score	# Sites	Score	# Sites	Score	# Sites	Score	# Sites	Score	# Sites	Score
Isolated Milling Feature (1)	0	**0**	0	**0**	0	**0**	1	**1**	2	**2**	0	**0**
Simple Flaked Stone (1)	3	**3**	3	**3**	5	**5**	5	**5**	9	**9**	11	**11**
Complex Flaked Stone (2)	1	**2**	1	**2**	1	**2**	3	**6**	4	**8**	3	**6**
Simple Habitation (5)	3	**15**	5	**25**	4	**20**	5	**25**	10	**50**	8	**40**
Complex Habitation (10)	5	**50**	5	**50**	2	**20**	6	**60**	1	**10**	3	**30**
Complex Habitation/Human Remains (20)	3	**60**	3	**60**	1	**20**	3	**60**	5	**100**	2	**40**
Total Score		**130**		**140**		**67**		**157**		**179**		**127**

Historic Period Sites Scoring Results

For historic period archaeological sites, the NRHP eligibility was considered. Some sites received a score of zero because they were judged to have no (or no remaining) research or interpretive value. The remaining historic period sites (i.e., those unevaluated or recommended/determined eligible) were classified according to general historic period site types (water conveyance systems, railroads, work camps, ranches, homesteads/ranches, etc.). All site types were assigned a score of 5 except for unassociated refuse scatters, which were assigned a score of 2.

Results of the scoring for the historic period sites are shown in Table 8. The sites that were previously found ineligible are not individual 4(f) resources, and do not contribute to the score. These sites are, however, included as they may contribute to a cultural landscape.

Table 8 Historic Period Archaeological Site Types and Scoring for Alternatives

Site Types (score) *Ineligible*	Alt 1		Alt 2		Alt 2A		Alt 3		Alt 4		CT Pref Alt	
	# Sites	Score	# Sites	Score	# Sites	Score	# Sites	Score	# Sites	Score	# Sites	Score
Isolated Feature (0)	0	**0**	0	**0**	1	**0**	2	**0**	2	**0**	2	**0**
Refuse Deposit (0)	2	**0**	2	**0**	2	**0**	3	**0**	6	**0**	7	**0**
Work Camp (0)	0	**0**	0	**0**	1	**0**	1	**0**	3	**0**	2	**0**
Ranch/Homestead (0)	0	**0**	0	**0**	0	**0**	1	**0**	0	**0**	1	**0**
Mining/Industrial (0)	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	1	**0**
Utility Line (0)	1	**0**	1	**0**	2	**0**	2	**0**	2	**0**	2	**0**
Road System (0)	1	**0**	1	**0**	1	**0**	1	**0**	1	**0**	1	**0**
Railroad (0)	2	**0**	3	**0**	4	**0**	3	**0**	3	**0**	3	**0**
Water Conveyance (0)	0	**0**	0	**0**	0	**0**	0	**0**	1	**0**	1	**0**
Sub-Total		**0**		**0**		**0**		**0**		**0**		**0**
Site Types (score) *Eligible/or Not Evaluated*	**Alt 1**		**Alt 2**		**Alt 2A**		**Alt 3**		**Alt 4**		**CT Pref Alt**	
Refuse Deposit (2)	3	**6**	3	**6**	4	**8**	3	**6**	2	**4**	3	**6**
Work Camp (5)	1	**5**	1	**5**	1	**5**	2	**10**	3	**15**	2	**10**
Ranch/Homestead (5)	2	**10**	2	**10**	2	**10**	1	**5**	0	**0**	0	**0**
Mining/Industrial (5)	0	**0**	0	**0**	0	**0**	1	**5**	0	**0**	0	**0**
Road System (5)	3	**15**	3	**15**	3	**15**	3	**15**	3	**15**	3	**15**
Water Conveyance (5)	4	**20**	4	**20**	4	**20**	4	**20**	2	**10**	3	**15**
Total Score		**56**		**56**		**58**		**61**		**44**		**46**

Section 4(f) Evaluation for the Olancha – Cartago 4-Lane Project

Cumulative Scores
The cumulative scores for each alternative are shown in Table 9. While Alternative 2A has the lowest overall scores, the Caltrans Preferred Alternative has the second-lowest. Alternative 4 has the highest score.

Table 9 Overall Scores for Alternatives

Resource Type	Alt 1	Alt 2	Alt 2A	Alt 3	Alt 4	CT Pref Alt
Prehistoric	130	140	67	157	179	127
Historic Period	56	56	58	61	44	46
Total	**186**	**196**	**125**	**218**	**223**	**173**

8.2 Least Overall Harm Analysis

As stated above, if there is no prudent and feasible alternative to avoid harm to the Section 4(f) resource, then only the alternative that causes the least overall harm, in light of the statute's preservation purpose, can be chosen. The scoring system discussed above provides a method to quantify impacts by alternative, so that identification of the alternative that provides the least harm to Section 4(f) resources can be identified. As indicated above, the least overall harm is determined by balancing the following:

i. Ability to mitigate adverse impacts to each Section 4(f) resource;
ii. Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features (document even if harm is substantially equal);
iii. Relative significance of each Section 4(f) property;
iv. Views of the officials with jurisdiction over each Section 4(f) property ;
v. Degree to which each alternative meets the purpose and need;
vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
vii. Substantial differences in costs among alternatives.

i. Ability to Mitigate Adverse Impacts to Each Section 4(f) Resource

Identified, Individually Eligible Archaeological Sites
Construction of any of the build alternatives would result in the destruction of archaeological sites found to be individually eligible for inclusion in the NRHP. Mitigation of these impacts would include data recovery and the collection and curation

of important artifacts from each site. This mitigation, however, would not avoid impacting the sites. Therefore, under any build alternative, the adverse effect of the proposed project on the site would be destructive in nature.

Each alternative was evaluated by scoring the impacts on archaeological sites using the system described above. The potential to mitigate the impacts for each alternative, as described in that evaluation, was then rated with a score between 1 and 5, with 5 representing the highest potential to mitigate for adverse impacts. The results of this rating are shown in Table 11, below. The summaries below reference values from tables 7 (Prehistoric Site Types and Scoring), 8 (Historic Site Types and Scoring), and 9 (Overall Scores by Alternative), on pages 53 – 58. The overall scores for all alternatives ranged from a low of 125 to a high of 223.

Construction of Alternative 1 would use 15 prehistoric sites with a scoring of 130 (Table 7). It would use 19 historic period sites with a scoring of 56 (Table 8), which would result in a cumulative score of 186 (Table 9). This overall score placed Alternative 1 in the mid-range when compared with the other alternatives.

Construction of Alternative 2 would use 17 prehistoric sites with a scoring of 140 (Table 7). It would use 20 historic period sites with a scoring of 56 (Table 8), which would result in a cumulative score of 196 (Table 9). This overall score placed Alternative 2 in mid-range when compared with the other alternatives.

Alternative 2A would use 13 prehistoric sites with a scoring of 67 (Table 7), and 25 historic period sites with a scoring of 58 (Table 8), which would result in a cumulative score of 125 (Table 9). This overall score was the lowest of all scored alternatives.

Construction of Alternative 3 would use 23 prehistoric sites with a scoring of 157 (Table 7). It would use 27 historic period sites with a scoring of 61 (Table 8), which would result in a cumulative score of 218 (Table 9). This overall score placed very high when compared with the other alternatives.

Construction of Alternative 4 would use 31 prehistoric sites with a scoring of 179 (Table 7). It would use 28 historic period sites with a scoring of 44 (Table 8), which would result in a cumulative score of 223 (Table 9). This was the highest overall score of the evaluated alternatives.

Construction of the Caltrans Preferred Alternative would use 27 prehistoric sites with a scoring of 127 (Table 7). It would use 31 historic period sites with a scoring of 46 (Table 8), which would result in a cumulative score of 173 (Table 9). This alternative's overall score was in the low to mid-range when compared with the other alternatives.

Alternatives with higher scores would produce greater impacts to Section 4(f) resources. Because mitigation measures would be similar for any site affected, a greater ability to mitigate would be assumed for sites with lower scores as described above. Therefore, Alternative 2A would offer the greatest potential to mitigate for impacts, Alternatives 1, 2, and the Caltrans Preferred Alternative would have mid-range mitigation potential, and Alternatives 3 and 4 would have the lowest potential to mitigate for impacts.

The Owens Lake traditional cultural landscape, treated for purposes of this project as a Section 4(f) resource, encompasses much of the area surrounding the Owens Lake (as shown in Figure 9) and is wedged between the eastern edge of the Sierra Nevada Mountain range and the Inyo-White Mountains. All of the build alternatives would impact the sites and corresponding potential historic districts contained within Owens Lake traditional cultural landscape equally, as the impacts are linear. At this time, analysis shows that any impact would be small when compared to the area that the Owens Lake traditional cultural landscape encompasses. However, impacts may be revisited after comments are received on this document.

The impacted sites within the likely historic district (and corresponding cultural landscape) could include sites that were formally evaluated and were deemed eligible or ineligible for the NRHP, sites known but not formally evaluated, and unknown sites. Any impacts to individual archaeological sites could be mitigated by using data recovery and the collection and curation of specific artifact types from each site in accordance with the HPTP and other stipulations of the Project-specific Programmatic Agreement. Potentially eligible historic districts will be evaluated for individual Section 4(f) eligibility per the HPTP. However, even with the implementation of mitigation plans, the build alternatives would require partial destruction of some known and possibly unknown sites. Certain prehistoric sites are culturally important to some Native American tribes. Therefore, it is possible that the impacts to these sites, potential historic districts, and the related traditional cultural landscape cannot be mitigated.

ii. Relative Severity of the Remaining Harm, After Mitigation, to the Protected Activities and Attributes or Features

As discussed above, construction of any of the build alternatives would destroy archaeological sites found to be individually eligible for inclusion in the NRHP. Although mitigation efforts would be undertaken for each impacted site that includes collection and curation of important artifacts, mitigation would not avoid the potential or partial elimination of each site. For that reason, after mitigation, the remaining harm to each affected site is severe.

An evaluation of the impacts of each alternative was completed by using the scoring system for archaeological sites described above. The severity of remaining harm after mitigation for each alternative was then rated with a score between 1 and 5 with 5 representing the lowest remaining harm. In essence, the rating system evaluates how well mitigation works to lessen the remaining harm to protected activities and attributes or features. The results of this rating are shown in 11 below.

As mitigation for each impacted site would be comparable to its scoring in the earlier discussion, the remaining harm after mitigation would follow the same ranges as shown for the impacts discussed in Section i above. Consequently, Alternative 2A would have the lowest severity of remaining harm after mitigation, Alternatives 1, 2 and the Caltrans Preferred Alternative would have mid-range severity, and Alternatives 3 and 4 would have the highest level of severity of remaining harm after mitigation.

Construction of any of the build alternatives would result in destroying or disturbing some archaeological sites that may be part of potentially historic districts within the corresponding Owens Lake traditional cultural landscape. At this time, analysis shows that any impact would be small when compared to the area that the Owens Lake traditional cultural landscape encompasses. However, this may be revisited after comments are received on this document.

iii. Relative Significance of Each Section 4(f) Property

There are 96 properties considered to have a potential use as defined under Section 4(f) within the proposed right-of-way boundaries of all project build alternatives. These include both properties that have been formally evaluated and found eligible for inclusion in the NRHP and properties that have not yet been evaluated, as described in Tables 7, 8, and 9 above.

The relative significance of 4(f) properties impacted by each alternative was then rated with a score between 1 and 5 with 5 representing the lowest level of significance. Because impacts to more significant 4(f) properties are less desirable, the highest level of significance is given the lowest rating. The results of this rating are shown in Table 11 below.

The relative significance of each archaeological site has been evaluated and outlined in Tables 7, 8 and 9, which discuss the values of prehistoric archaeological sites, historic period archaeological sites and the cumulative values of both. Although only two sites—CA-INY-7741H (PLI-29) and CA-INY-7787H—are shown as eligible for inclusion in the NRHP, the other sites shown have the potential, after evaluation, to be determined to be eligible. Therefore, no additional weight is given to sites currently determined eligible for the NRHP, and the relative significance of each archaeological site is considered equal.

The Owens Lake traditional cultural landscape contains the properties listed above as well as numerous unknown sites, sites formally evaluated and deemed eligible for inclusion into the NRHP, sites formally evaluated and deemed not eligible for inclusion into the NRHP, and sites not formally evaluated. All of these sites could be part of a potential historic district or districts within the traditional cultural landscape, which may be eligible for inclusion in the NRHP. These potential historic districts will be delineated and evaluated for the NHRP as part of the Historic Properties Treatment Plan (HPTP), which is currently being prepared for the project.

Because all the properties are being treated as if they are eligible for the NRHP, all of the properties affected by the proposed project are considered significant at the national level.

iv. Views of the Officials with Jurisdiction

The Project-specific Programmatic Agreement outlines stipulations required to resolve the effect of the proposed project on historic properties. Execution of this agreement involved coordination between all parties and opportunities to comment by all parties.

The officials with jurisdiction (SHPO, ACHP) will have the opportunity to comment during the circulation of this draft Section 4(f) evaluation. Comments and coordination with officials with jurisdiction as a result of this draft document will be included in the final Section 4(f) evaluation.

Since this criterion will be evaluated in the Final Least Overall Harm evaluation, no score is given at this time.

v. Degree to Which Each Alternative Meets the Purpose and Need

The ability of each alternative to meet the stated Purpose and Need was evaluated using the scoring system described above. Each alternative was given a score between 1 and 5, with 5 representing greatest ability to meet the Purpose and Need of the project. The results of this rating are shown in Table 11 below.

The purpose of the project is to:

- *Accommodate increased traffic demands by improving level of service*

  Each of the build alternatives would improve the level of service compared to the existing highway. However, because Alternative 1 does not provide a divided four-lane facility with controlled access, potential conflicts would exist with vehicles entering/exiting from the median or adjacent driveways and side streets, and level of service improvements would not be maximized.

- *Improve safety by allowing faster-moving traffic to pass slower vehicles*

  The median turn lane configuration with no divided median and uncontrolled access included in Alternative 1 resulted in the lowest safety rating of all of the build alternatives.

  Alternatives 2, 2A and 3 had high safety ratings because of their divided expressway configuration and controlled access, which would eliminate potential conflicts with vehicles entering/exiting from the median or adjacent driveways and side streets. In addition to eliminating the potential conflicts with vehicles entering/exiting, the divided median would also greatly reduce the potential for head-on collisions.

  Alternative 4 and the Caltrans Preferred Alternative had the highest safety ratings because of their divided expressway configuration, controlled access, and minimal access points, which would eliminate potential conflicts with vehicles entering/exiting from the median or adjacent driveways and side streets. In

addition to eliminating the potential conflicts with vehicles entering/exiting, the divided median would also greatly reduce the potential for head-on collisions.

All of these alternatives would allow faster-moving traffic to pass slower vehicles because each alternative provides four traffic lanes. However, Alternative 4 and the Caltrans Preferred Alternative both best meet this criterion due to their highest safety ratings.

- *Provide route continuity*

  The project area is the last section of U.S. Highway 395 in Inyo County that is not four lanes. With the completion of any of the build alternatives, a continuous four-lane section would be achieved on U.S. Highway 395 from the junction of U.S. Highway 395 and State Route 14 in Kern County to north of Lee Vining in Mono County. Each of the build alternatives would adequately address this criterion.

vi. After Reasonable Mitigation, the Magnitude of Any Adverse Impacts to Resources Not Protected by Section 4(f)

The level of adverse impacts, by alternative, to resources not protected by Section 4(f) was evaluated using the scoring system described above. Each alternative was given a score between 1 and 5, with 5 representing the lowest amount of adverse, non-4(f) impacts. The results of this rating are shown in Table 11 below.

Alternative 1
Alternative 1 would have less impact to habitat for the desert tortoise, but more impact to wetlands. It would require the least amount of private lands (about 66 acres), but those lands are the most developed, resulting in the displacement of four businesses, including the local post office.

Alternative 2
Alternative 2 has no impacts to the Mohave ground squirrel but still impacts the desert tortoise and wetlands. Its location within the existing corridor would require a sizeable amount of private lands (about 168 acres), and the alternative would displace six residences and eight businesses.

Alternative 2A
Due to Alternative 2A's alignment around Cartago, it would have less direct impact on the community of Cartago. But, it would still require a sizable amount of private lands (about 147 acres) and displace seven residences and eight businesses. Though the alignment would pass through undeveloped lands west of Cartago, it would still impact the desert tortoise and wetlands.

Alternative 3
Due to its alignment around Olancha, Alternative 3 would have less direct impact on the community of Olancha than Alternatives 1, 2 and 2A. It also would have fewer impacts on existing ranching operations than Alternatives 1, 2 and 2A. However, it still would require a sizeable amount of private land (about 148 acres) and displace three residences

and two businesses. Because of the alignment through undeveloped lands west of Olancha, Alternative 3 would have a similar natural and physical environmental impact as the Caltrans Preferred Alternative.

Alternative 4

Due to Alternative 4's alignment around both Olancha and Cartago, it would have the least direct impact on the communities and displace only one residence and no businesses. It also would require about 85 acres of private lands and would have minimal impact on existing ranching operations. However, due to the location of the alignment on the west side of the Los Angeles Aqueduct, Alternative 4 would cause more impacts to the natural environment than other build alternatives.

Caltrans Preferred Alternative

The Caltrans Preferred Alternative would not relocate any residences or active businesses and would minimize the number of private properties affected for the right-of-way. The Caltrans Preferred Alternative would require about 150 acres of private land; of that acreage, 44.2 acres are undeveloped land belonging to the Indian Wells Valley Water District. Due to its alignment through undeveloped lands west of Olancha, the Caltrans Preferred Alternative would have more impacts to habitat for the desert tortoise and Mohave ground squirrel than Alternatives 1, 2, 2A, and 3.

vii. Substantial Differences in Costs Among Alternatives

The cost of each alternative was evaluated using the scoring system described above. Each alternative was given a score between 1 and 5, with 5 representing the lowest cost. The results of this rating are shown in Table 11 below.

The estimated cost for each alternative is shown in Table 10.

Table 10 -- Cost for Each Build Alternative (in Millions)

Alt 1	Alt 2	Alt 2A	Alt 3	Alt 4	CT Pref Alt
$90.9	$108.6	$102.2	$92.1	$123.0	$84.9

Source: Olancha/Cartago Four-Lane Project Final Initial Study with Mitigated Negative Declaration/Environmental Assessment with Finding of No Significant Impact

The Caltrans Preferred Alternative has the lowest cost at $84.9 million. Alternatives 1 and 3 are comparable, in the $90 million range. Alternative 2 and 2A are more expensive, costing in the $100 million range, approximately $17-$24 million more than the Caltrans Preferred Alternative. Alternative 4 is the most expensive alternative at $123 million, about $38 million more than the Caltrans Preferred Alternative.

The final least overall harm analysis and conclusion will be reported in the final Section 4(f) evaluation.

Page added here to aid two-sided printing

Table 11 Summary of Least Overall Harm Analysis by Alternatives

	Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	Caltrans Preferred Alternative
i. Ability to mitigate adverse impacts to each Section 4(f) resource	Prehistoric Sites: 3 Historic Period Sites: 2 Landscape: 4 **Total: 3.0** *(Total of above scores divided by 3)*	Prehistoric Sites: 2 Historic Period Sites: 2 Landscape: 4 **Total: 2.7** *(Total of above scores divided by 3)*	Prehistoric Sites: 5 Historic Period Sites: 1 Landscape: 4 **Total: 3.3** *(Total of above scores divided by 3)*	Prehistoric Sites: 2 Historic Period Sites: 1 Landscape: 4 **Total: 2.3** *(Total of above scores divided by 3)*	Prehistoric Sites: 1 Historic Period Sites: 5 Landscape: 4 **Total: 3.3** *(Total of above scores divided by 3)*	Prehistoric Sites: 3 Historic Period Sites: 4 Landscape: 4 **Total: 3.7** *(Total of above scores divided by 3)*
Prehistoric Archaeological Sites Potential to mitigate would be greatest for sites with lesser impacts. Using a comparative scale and assigning values from the lowest to the highest scores as follows: 66-89=5 90-112=4 113-135=3 136-157=2 158-180=1 ***(Less mitigation potential equals a lower score)***	The site types total for this alternative is 15, with a final scoring of 130. Mitigation under Criterion D would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 3.	The site types total for this alternative is 17, with a final scoring of 140. Mitigation under Criterion D would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 2.	The site types total for this alternative is 15, with a final scoring of 67. Mitigation under Criterion D would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 5.	The site types total for this alternative is 23, with a final scoring of 157. Mitigation under Criterion D would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 2.	The site types total for this alternative is 31, with a final scoring of 179. Mitigation under Criterion D would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 1.	The site types total for this is 27, with a final scoring of 127. Mitigation under Criterion D would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 3.
Historic Period Archaeological Sites Potential to mitigate would be greatest for sites with lesser impacts. Using a comparative scale and assigning values from the lowest to the highest scores as follows: 42-45=5 46-49=4 50-53=3 54-57=2 58-61=1 ***(Less mitigation potential equals a lower score)***	The theme type total for this alternative is 19, with a final scoring of 56. Mitigation would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 2.	The theme type total for this alternative is 20, with a final scoring of 56. Mitigation would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 2.	The theme type total for this this alternative is 25, with a final scoring of 58. Mitigation would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 1.	The theme type total for this alternative is 27, with a final scoring of 61. Mitigation would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 1.	The theme type total for this alternative is 28, with a final scoring of 44. Mitigation would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 5.	The theme type total of this alternative is 31, with a final scoring of 46. Mitigation would include the collection and curation of specific artifact types in accordance with the HPTP. This alternative is rated 4.

	Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	Caltrans Preferred Alternative
Cultural Landscape ***(Less mitigation potential equals a lower score)***	Impacts could include affected sites that were formally evaluated and were deemed eligible or ineligible for the NRHP, sites known but not formally evaluated, and unknown sites. Impacts to these sites would be mitigated by utilizing data recovery and the collection and curation of specific artifact types in accordance with the HPTP. Each site would be evaluated as part of a historic district as specified in the HPTP. At this time analysis shows that any impact would be small when compared to the area that the Owens Lake traditional cultural landscape encompasses. Each of the build alternatives impacts the cultural landscape equally and minimally, so all are given a score of 4.	Impacts could include affected sites that were formally evaluated and were deemed eligible or ineligible for the NRHP, sites known but not formally evaluated, and unknown sites. Impacts to these sites would be mitigated by utilizing data recovery and the collection and curation of specific artifact types in accordance with the HPTP. Each site would be evaluated as part of a historic district as specified in the HPTP. At this time analysis shows that any impact would be small when compared to the area that the Owens Lake traditional cultural landscape encompasses. Each of the build alternatives impacts the cultural landscape equally and minimally, so all are given a score of 4.	Impacts could include affected sites that were formally evaluated and were deemed eligible or ineligible for the NRHP, sites known but not formally evaluated, and unknown sites. Impacts to these sites would be mitigated by utilizing data recovery and the collection and curation of specific artifact types in accordance with the HPTP. Each site would be evaluated as part of a historic district as specified in the HPTP. At this time analysis shows that any impact would be small when compared to the area that the Owens Lake traditional cultural landscape encompasses. Each of the build alternatives impacts the cultural landscape equally and minimally, so all are given a score of 4.	Impacts could include affected sites that were formally evaluated and were deemed eligible or ineligible for the NRHP, sites known but not formally evaluated, and unknown sites. Impacts to these sites would be mitigated by utilizing data recovery and the collection and curation of specific artifact types in accordance with the HPTP. Each site would be evaluated as part of a historic district as specified in the HPTP. At this time analysis shows that any impact would be small when compared to the area that the Owens Lake traditional cultural landscape encompasses. Each of the build alternatives impacts the cultural landscape equally and minimally, so all are given a score of 4.	Impacts could include affected sites that were formally evaluated and were deemed eligible or ineligible for the NRHP, sites known but not formally evaluated, and unknown sites. Impacts to these sites would be mitigated by utilizing data recovery and the collection and curation of specific artifact types in accordance with the HPTP. Each site would be evaluated as part of a historic district as specified in the HPTP. At this time analysis shows that any impact would be small when compared to the area that the Owens Lake traditional cultural landscape encompasses. Each of the build alternatives impacts the cultural landscape equally and minimally, so all are given a score of 4.	Impacts could include affected sites that were formally evaluated and were deemed eligible or ineligible for the NRHP, sites known but not formally evaluated, and unknown sites. Impacts to these sites would be mitigated by utilizing data recovery and the collection and curation of specific artifact types in accordance with the HPTP. Each site would be evaluated as part of a historic district as specified in the HPTP. At this time analysis shows that any impact would be small when compared to the area that the Owens Lake traditional cultural landscape encompasses. Each of the build alternatives impacts the cultural landscape equally and minimally, so all are given a score of 4.
ii. Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features *(How well does mitigation lessen the remaining harm to protected activities and attributes or features?)*	Prehistoric Sites: 3 Historic Period Sites: 2 Landscape: 4 **Total: 3.0** *(Total of above scores divided by 3)*	Prehistoric Sites: 2 Historic Period Sites: 2 Landscape: 4 **Total: 2.7** *(Total of above scores divided by 3)*	Prehistoric Sites: 5 Historic Period Sites: 1 Landscape: 4 **Total: 3.3** *(Total of above scores divided by 3)*	Prehistoric Sites: 2 Historic Period Sites: 1 Landscape: 4 **Total: 2.3** *(Total of above scores divided by 3)*	Prehistoric Sites: 1 Historic Period Sites: 5 Landscape: 4 **Total: 3.3** *(Total of above scores divided by 3)*	Prehistoric Sites: 3 Historic Period Sites: 4 Landscape: 4 **Total: 3.7** *(Total of above scores divided by 3)*
Prehistoric Archaeological Sites Remaining harm after mitigation would be greatest for sites with higher impact scores. Using a comparative scale, lowest values were assigned to alternatives with	The site types total for this alternative is 15, with a final scoring of 130. Mitigation would be equivalent for all sites. This alternative is rated 3.	The site types total for this alternative is 17, with a final scoring of 140. Mitigation would be equivalent for all sites. This alternative is rated 2.	The site types total for this alternative is 15, with a final scoring of 67. Mitigation would be equivalent for all sites. This alternative is rated 5.	The site types total for this alternative is 23, with a final scoring of 157. Mitigation would be equivalent for all sites. This alternative is rated 2.	The site types total for this alternative is 31, with a final scoring of 179. Mitigation would be equivalent for all sites. This alternative is rated 1.	The site types total for this is 27, with a final scoring of 127. Mitigation would be equivalent for all sites. This alternative is rated 3.

	Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	Caltrans Preferred Alternative
the greatest remaining harm, as follows: 66-89=5 90-112=4 113-135=3 136-157=2 158-180=1						
Historic Period Archaeological Sites Remaining harm after mitigation would be greatest for sites with greater impact scores. Using a comparative scale and assigning lowest values for alternatives with the greatest remaining harm, as follows: 42-45=5 46-49=4 50-53=3 54-57=2 58-61=1	The theme type total for this alternative is 19, with a final scoring of 56. This alternative is rated 2.	The theme type total for this alternative is 20, with a final scoring of 56. This alternative is rated 2.	The theme type total for this this alternative is 25, with a final scoring of 58. This alternative is rated 1.	The theme type total for this alternative is 27, with a final scoring of 61. This alternative is rated 1.	The theme type total for this alternative is 28, with a final scoring of 44. This alternative is rated 5.	The theme type total of this alternative is 31, with a final scoring of 46. This alternative is rated 4.
Cultural Landscape Because remaining harm is virtually equal among alternative and is minimal, each alternative is given the same score	4	4	4	4	4	Because remaining harm is virtually equal among alternatives and is minimal, each alternative is given a score of 4.
iii. Relative significance of each Section 4(f) property.	**1**	**1**	**1**	**1**	**1**	**1**
National significance = lowest rating State significance = moderate rating Local significance = highest rating *(Since impacts to more significant 4(f) properties are less desirable, the highest level of significance is given the lowest rating)*	Because equal significance was given to archaeological sites eligible for inclusion in the NRHP and sites that have not yet been evaluated, all archaeological sites are considered to be of national significance. The unevaluated Owens Lake traditional cultural	Because equal significance was given to archaeological sites eligible for inclusion in the NRHP and sites that have not yet been evaluated, all archaeological sites are considered to be of national significance. The unevaluated Owens Lake traditional cultural	Because equal significance was given to archaeological sites eligible for inclusion in the NRHP and sites that have not yet been evaluated, all archaeological sites are considered to be of national significance. The unevaluated Owens Lake traditional cultural	Because equal significance was given to archaeological sites eligible for inclusion in the NRHP and sites that have not yet been evaluated, all archaeological sites are considered to be of national significance. The unevaluated Owens Lake traditional cultural	Because equal significance was given to archaeological sites eligible for inclusion in the NRHP and sites that have not yet been evaluated, all archaeological sites are considered to be of national significance. The unevaluated Owens Lake traditional cultural	Because equal significance was given to archaeological sites eligible for inclusion in the NRHP and sites that have not yet been evaluated, all archaeological sites are considered to be of national significance. The unevaluated Owens Lake traditional cultural

	Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	Caltrans Preferred Alternative
	landscape is also considered to be significant at the national level. Therefore, all alternatives are given a score of 5.	landscape is also considered to be significant at the national level. Therefore, all alternatives are given a score of 5.	landscape is also considered to be significant at the national level. Therefore, all alternatives are given a score of 5.	landscape is also considered to be significant at the national level. Therefore, all alternatives are given a score of 5.	landscape is also considered to be significant at the national level. Therefore, all alternatives are given a score of 5.	landscape is also considered to be significant at the national level. Therefore, all alternatives are given a score of 5.
iv. Views of the officials with jurisdiction over each Section 4(f) property	N/A for Draft Section 4(f) Evaluation	N/A for Draft Section 4(f) Evaluation	N/A for Draft Section 4(f) Evaluation	N/A for Draft Section 4(f) Evaluation	N/A for Draft Section 4(f) Evaluation	N/A for Draft Section 4(f) Evaluation
Views of the State Historic Preservation Officer	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.
Views of the Advisory Council On Historic Preservation	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.	To be added after Draft Section 4(f) Evaluation circulation period.
v. Degree to which each alternative meets Purpose and Need	**2**	**4**	**4**	**4**	**5**	**5**
Accommodate increased traffic demands by improving level of service (LOS)	Reduced LOS improvements because the lack of a divided facility with controlled access provides potential for conflicts with vehicles entering/exiting from the median or adjacent driveways and side streets.	LOS significantly improved over existing highway. Comparable to Alternatives 2A, 3, 4, and the Caltrans Preferred Alternative. Greater improvement than is anticipated under Alternative 1.	LOS significantly improved over existing highway. Comparable to Alternatives 2, 3, 4, and the Caltrans Preferred Alternative. Greater improvement than is anticipated under Alternative 1.	LOS significantly improved over existing highway. Comparable to Alternatives 2, 2A, 4, and the Caltrans Preferred Alternative. Greater improvement than is anticipated under Alternative 1.	LOS significantly improved over existing highway. Comparable to Alternatives 2, 2A, 3, and the Caltrans Preferred Alternative. Greater improvement than is anticipated under Alternative 1.	LOS significantly improved over existing highway. Comparable to Alternatives 2, 2A, 3, and 4. Greater improvement than is anticipated under Alternative 1.
Improve safety by allowing faster-moving traffic to pass slower vehicles	Lowest safety rating due to median turn lane configuration with no divided median and uncontrolled access.	High safety rating because of divided expressway configuration and controlled access, less potential for conflicts with vehicles entering/exiting highway.	High safety rating because of divided expressway configuration and controlled access, less potential for conflicts with vehicles entering/exiting highway.	High safety rating because of divided expressway configuration and controlled access, less potential for conflicts with vehicles entering/exiting highway.	Highest safety rating because of divided expressway configuration and controlled access, as well as minimal access points. Best reduction of potential for conflicts with vehicles entering/exiting highway.	Highest safety rating because of divided expressway configuration and controlled access, as well as minimal access points. Best reduction of potential for conflicts with vehicles entering/exiting highway.
Provide route continuity	Route continuity provided.	Route continuity provided.	Route continuity provided.	Route continuity provided.	Route continuity provided.	Route continuity provided.
vi. After reasonable mitigation, the magnitude of any adverse impacts to	**3**	**2**	**2**	**3**	**4**	**4**

	Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	Caltrans Preferred Alternative
resources not protected by Section 4(f)						
Impacts to non-protected resources	Less impact to habitat for the desert tortoise and Mohave ground squirrel, but more impact to wetlands than the Caltrans Preferred Alternative (all impacts are less than significant with mitigation). Requires least amount of private lands (66 acres), but those lands are mostly developed. Displaces four businesses.	Fewer natural and physical environmental impacts than the Caltrans Preferred Alternative due to the location within the existing highway corridor (all impacts are less than significant with mitigation). Requires a sizeable amount of private lands (about 168 acres) and would displace six residences and eight businesses.	Fewer natural and physical environmental impacts than the Caltrans Preferred Alternative (all impacts are less than significant with mitigation). Less impact on the community of Cartago than the Caltrans Preferred Alternative. Requires a sizable amount of private lands (about 147 acres) and displaces seven residences and eight businesses. It was also the least favorite alternative of the local community.	Similar natural and physical environmental impact as the Caltrans Preferred Alternative (all impacts are less than significant with mitigation). Less impact on the community of Olancha than Alternatives 1, 2, and 2A. Fewer impacts on existing ranching operations than Alternatives 1, 2, and 2A. Requires a sizeable amount of private land (about 148 acres) and displaces three residences and two businesses.	More impacts to the natural environment than the Caltrans Preferred Alternative (all impacts are less than significant with mitigation). Least direct impact on the communities of Olancha and Cartago. Displaces one residence and no businesses. Requires about 85 acres of private lands and would have minimal impacts on existing ranching operations.	More impacts to habitat for the desert tortoise and Mohave ground squirrel than Alternatives 1, 2, or 2A (all impacts are less than significant with mitigation). Would not relocate any residences or active businesses and minimizes the number of private properties affected for the right-of-way. Would require about 150 acres of private land, of which 44.2 acres is undeveloped land.
vii. Substantial differences in costs among alternatives	**4**	**3**	**3**	**4**	**1**	**5**
Cost by alternative.	$90.9 million	$108.6 million	$102.2 million	$92.1 million	$123 million	$84.9 million
Total Score	**16**	**15.4**	**16.6**	**16.6**	**17.6**	**19.4**

5 – Best meets all elements of the criterion
4 – Meets most elements of the criterion very well
3 – Meets a majority of the elements of the criterion to some degree
2 – Meets some elements of the criterion to a lesser degree
1 – Does not meet the criterion at all

Page added here to aid two-sided printing

Chapter 9 Resources Evaluated Relative to the Requirements of Section 4(f)

This section discusses sites found eligible for the NRHP that do not trigger the protections of Section 4(f).

Olancha Schoolhouse

The Olancha schoolhouse was built in 1914 to serve the community of Olancha and distant settlements such as Darwin and Haiwee. The schoolhouse was a typical one-room country school with one teacher responsible for instructing children in different grades. The schoolhouse was in service until 1949 when a new, larger multiple-room school was built.

The building was the first formal schoolhouse in the community and therefore played an important role in the social and cultural development of the town. The schoolhouse is eligible for listing in the NRHP under Criterion A, at the local level of significance. The SHPO concurred with the eligibility determination by letter dated May 27, 2004.

The schoolhouse sits at 45 Shop Street, Olancha, CA 93549 (APN 33-080-07), directly west of the existing U.S. Highway 395. It is zoned Residential and is privately owned.

The Olancha Schoolhouse is located within the project area, but the project would not permanently use the property and would not hinder the preservation of the property.

Alternative 1 would widen the existing U.S. Highway 395 to accommodate an all-paved configuration with a center turn lane. There are no impacts or use of the property with this alternative. There are also no anticipated construction-related impacts from Alternative 1.

Alternatives 2 and 2A would be built about 50 feet away from the northeast corner of the parcel where the schoolhouse is located. There are no impacts or use of the property with these alternatives. There are also no anticipated construction-related impacts from Alternative 2 or 2A.

Alternative 3 was originally envisioned to require an extension of State Route 190 to connect with the new U.S. Highway 395 alignment, which would have required a small amount of right-of-way from this parcel. However, with creation of the Caltrans Preferred Alternative, this idea was removed to propose redesignating the existing highway as State Route 190, resulting in Alternative 3 completely avoiding the parcel. Therefore, there are no impacts or use of the schoolhouse with Alternative 3. There are also no anticipated construction-related impacts from this alternative.

Alternative 4 and the Caltrans Preferred Alternative travel west of Olancha and would completely avoid this Section (4) resource. There are also no anticipated construction-related impacts from these alternatives.

The project would not result in temporary use, such as a construction easement or temporary restriction of access. Also, no proximity impacts (constructive use) are anticipated because construction of one or more of the alternatives is at least 50 feet or more away from property. The value of the resource would not be substantially impaired.

Unidentified Sites (Late Discoveries)

Unknown sites in the project area could be identified during construction. After evaluation, these sites could be found eligible for the NRHP and could possibly trigger Section 4(f) protection.

The construction of any build alternative could result in the discovery of currently unknown sites. A Post Review Discovery Plan to address archaeological resources identified subsequent to the execution of the Programmatic Agreement will be developed, as well as for reporting and consultation requirements, as part of the HPTP.

Chapter 10 Master List of Sites by Alternative

Page added here to aid two-sided printing

Resource type	Trinomial (CA-INY-)	Primary (P-14-)	Other ID	Pref	Alt 1	Alt 2	Alt 2a	Alt 3	Alt 4	Resource age	Prehist type	Score	Hist Site Types	Score
Building/structure		8108	Rustic Motel	-	+	-	-	+	-	Historic Period				
Building/Structure		8109	Olancha RV Park	-	+	-	-	+	-	Historic Period				
Building/Structure		8110	Ed Roman House	-	+	+	+	-	-	Historic Period				
Building/Structure		8111	Olancha BLM Fire Station	-	+	-	-	-	-	Historic Period				
Building/Structure		8112	Ranch Motel	-	+	-	-	-	-	Historic Period				
Building/Structure		8113	Grant Service Station	-	+	-	-	-	-	Historic Period				
Building/Structure		8114	Grant Garage & Store	-	+	+	+	-	-	Historic Period				
Building/Structure		8115	Mobil Station	-	+	-	-	-	-	Historic Period				
Building/Structure		8116	Castner Service Station	-	+	+	+	-	-	Historic Period				
Building/Structure		8117	Still Life Café	-	+	+	+	-	-	Historic Period				
Building/Structure		8124	Calloway Motel & Store	-	+	+	+	-	-	Historic Period				
Building/Structure		8125	Olancha Post Office	-	+	+	+	-	-	Historic Period				
Building/Structure		8126	Food Mart	-	+	+	+	-	-	Historic Period				
Building/Structure		8127	Spainhower Anchor Ranch	-	+	+	+	-	-	Historic Period				
Building/Structure		8130	Ranch House Café	-	+	+	+	-	-	Historic Period				
Building/Structure		8131	Jot-em Down Store	-	+	-	-	-	-	Historic Period				
Building/Structure		8132	Associate Oil Station	-	+	-	-	-	-	Historic Period				
Building/Structure		8133	Lacey Ranch	-	+	+	+	-	-	Historic Period				
Building/structure		8135	Cabin Bar Café	-	+	-	-	-	-	Historic Period				
Building/structure		8136	Cabin Bar Ranch	-	+	+	-	+	-	Historic Period				
Building/structure		8140	Sportsman's Lodge	-	+	+	-	+	-	Historic Period				
Site		10222		+	-	-	+	+	+	Historic Period			Utility line (N)	0
Site	43			+	-	+	+	+	-	Prehistoric	SH	5		
Site	291/H			+	+	+	-	+	-	Prehistoric	CH	10		
Site	323/H			-	-	-	-	-	+	Multi-component	SH	5	Refuse deposit (N)	0
Site	352			+	+	+	+	+	+	Prehistoric	CFS	2		
Site	371/H			+	+	+	+	+	+	Multi-component	CH	10	Refuse deposit (U)	2
Site	1317/H			+	+	+	+	+	+	Multi-component	CH/HR	20	Utility line (N)	0
Site	1991/5968/H			+	+	+	-	+	-	Multi-component	CH/HR	20	Refuse deposit (N)	0
Site	2277H			+	-	-	-	-	-	Historic Period			Refuse deposit (U)	2
Site	4590H			+	+	+	+	+	+	Historic Period			Road system (U)	5
Site	4591H			+	+	+	+	+	+	Historic Period			Water conveyance system (U)	5
Site	4607H			+	+	+	+	+	+	Historic Period			Railroad (N)	0
Site	4763H			-	-	-	-	+	-	Historic Period			Mining/industrial (U)	5
Site	4835			+	-	-	-	-	+	Prehistoric	SFS	1		
Site	4837			-	+	+	+	+	-	Prehistoric	SFS	1		
Site	5350H			-	+	+	+	+	-	Historic Period			Refuse deposit (U)	2

Resource type	Trinomial (CA-INY-)	Primary (P-14-)	Other ID	CT Pref	Alt 1	Alt 2	Alt 2A	Alt 3	Alt 4	Resource age	Prehist type	Score	Hist Site Types	Score
Site	5953H			-	+	+	+	+	-	Historic Period			Ranch/homestead (U)	5
Site	5958/H			-	+	+	+	-	-	Multi-component	SH	5	Ranch/homestead (U)	5
Site	5959H			+	-	-	+	+	-	Historic Period			Refuse deposit (N)	0
Site	5960			-	-	-	-	+	-	Prehistoric	SH	5		
Site	5961H			+	-	-	-	+	-	Historic Period			Isolated feature (N)	0
Site	5962/H			+	-	-	+	+	-	Multi-component	SFS	1	Isolated feature (N)	0
Site	5964			-	+	+	+	-	-	Prehistoric	SH	5		
Site	5965			-	-	-	-	+	-	Prehistoric	MF	1		
Site	5967			-	+	+	-	+	-	Prehistoric	CH	10		
Site	5969/5971/H			+	-	-	-	+	-	Multi-component	SH	5	Ranch/homestead (N)	0
Site	5973H			-	-	-	+	-	-	Historic Period			Refuse deposit (U)	2
Site	5974			+	-	-	-	+	-	Prehistoric	SFS	1		
Site	5975			-	-	-	-	+	-	Prehistoric	CH	10		
Site	5979			-	-	-	+	-	-	Prehistoric	SFS	1		
Site	5981			-	-	+	+	-	-	Prehistoric	SH	5		
Site	5982			-	-	-	-	+	-	Prehistoric	SH	5		
Site	5984			+	+	+	-	+	-	Prehistoric	CH	10		
Site	5986H			-	-	-	-	+	-	Historic Period			Work camp (U)	5
Site	5987			-	-	-	-	+	-	Prehistoric	CFS	2		
Site	5990/H			+	+	+	-	+	-	Multi-component	SH	5	Refuse deposit (N)	0
Site	5991			+	-	-	-	+	-	Prehistoric	CFS	2		
Site	6021			-	+	+	-	+	-	Prehistoric	CH/HR	20		
Site	6263			-	+	+	+	+	-	Prehistoric	CH	10		
Site	6394H			+	+	+	+	+	-	Historic Period			Water conveyance system (U)	5
Site	6396H			+	+	+	+	+	+	Historic Period			Railroad (N)	0
Site	6397H			+	+	+	+	+	+	Historic Period			Water conveyance system (U)	5
Site	6398H			-	+	+	+	+	-	Historic Period			Water conveyance system (U)	5
Site	6498			+	-	-	-	-	-	Prehistoric	SFS	1		
Site	7259/7260/H			+	+	+	+	+	+	Multi-component	SFS	1	Refuse deposit (U)	2
Site	7720			+	-	-	-	-	+	Prehistoric	SFS	1		
Site	7722			-	-	-	-	-	+	Prehistoric	SH	5		
Site	7723			+	-	-	-	-	+	Prehistoric	SH	5		
Site	7724/H			+	-	-	-	-	+	Multi-component	SFS	1	Refuse deposit (N)	0
Site	7725/H			-	-	-	-	-	+	Multi-component	CFS	2	Refuse deposit (N)	0
Site	7727			-	-	-	-	-	+	Prehistoric	SFS	1		
Site	7729			+	-	-	-	-	-	Prehistoric	SFS	1		
Site	7730			+	-	-	-	-	-	Prehistoric	SFS	1		
Site	7731H			-	-	-	-	-	+	Historic Period			Work camp (N)	0
Site	7732/H			+	-	-	-	-	-	Multi-component	SH	5	Refuse deposit (N)	0
Site	7733			-	-	-	-	-	+	Prehistoric	SH	5		
Site	7734			+	-	-	-	-	-	Prehistoric	SH	5		
Site	7735/H			+	-	-	-	-	+	Multi-component	SH	5	Refuse deposit (N)	0

Resource type	Trinomial (CA-INY-)	Primary (P-14-)	Other ID	CT Pref	Alt 1	Alt 2	Alt 2A	Alt 3	Alt 4	Resource age	Prehist type	Score	Hist Site Types	Score
Site	7736H			+	-	-	-	-	+	Historic Period			Work camp (N)	0
Site	7740			-	-	-	-	-	+	Prehistoric	SFS	1		
Site	7741H			+	-	-	-	-	-	Historic Period			Work camp (E	5
Site	7744H			+	-	-	-	-	-	Historic Period			Refuse deposit (N)	0
Site	7747			-	-	-	-	-	+	Prehistoric	SFS	1		
Site	7748			-	-	-	-	-	+	Prehistoric	CH/HR	20		
Site	7749			+	-	-	-	-	-	Prehistoric	SH	5		
Site	7753			-	-	-	-	-	+	Prehistoric	SFS	1		
Site	7754			-	-	-	-	-	+	Prehistoric	MF	1		
Site	7755			+	-	-	-	-	+	Prehistoric	CFS	2		
Site	7756			-	-	-	-	-	+	Prehistoric	SH	5		
Site	7757			+	-	-	-	-	-	Prehistoric	SFS	1		
Site	7765			-	-	-	-	-	+	Prehistoric	SH	5		
Site	7767H			-	-	-	-	-	+	Historic Period			Isolated feature (N)	0
Site	7768H			-	-	-	-	-	+	Historic Period			Work camp (U)	5
Site	7770H			-	-	-	-	-	+	Historic Period			Isolated feature (N)	0
Site	7772/H			-	-	-	-	-	+	Multi-component	CH/HR	20	Refuse deposit (N)	0
Site	7773			-	-	-	-	-	+	Prehistoric	CH/HR	20		
Site	7778			-	-	-	-	-	+	Prehistoric	SH	5		
Site	7779/H			-	-	-	-	-	+	Multi-component	SH	5	Refuse deposit (N)	0
Site	7780			-	-	-	-	-	+	Prehistoric	CFS	2		
Site	7781			-	-	-	-	-	+	Prehistoric	MF	1		
Site	7784			-	-	-	-	-	+	Prehistoric	SH	5		
Site	7785			-	-	-	-	-	+	Prehistoric	CH/HR	20		
Site	7786H			-	-	-	+	-	-	Historic Period			Refuse deposit (N)	0
Site	7787H			-	-	-	-	-	+	Historic Period			Work camp (E)	5
Site	7789H			-	-	-	+	-	+	Historic Period			Work camp (N)	0
Site	7791H			-	-	-	+	-	-	Historic Period			Railroad (N)	0
Site	7792H			+	-	+	+	+	+	Historic Period			Railroad (N)	0
Site	7806H			+	-	-	-	-	+	Historic Period			Water conveyance system (N)	0
Site	7808H			+	-	-	-	-	-	Historic Period			Mining/industrial (N)	0
Site	7816H			+	+	+	+	+	+	Historic Period			Road system (N)	0
Site	9100H			+	-	-	-	+	-	Historic Period			Work camp (N)	0
Site	9101H			+	+	+	+	+	+	Historic Period			Road system (U)	5
Site	9103H			+	+	+	+	+	+	Historic Period			Work camp (U)	5
Site	9114			+	+	+	+	+	+	Prehistoric	SFS	1		
Site	9116H			+	+	+	+	+	+	Historic Period			Road system (U)	5

Page added here to aid two-sided printing

Appendix C Title VI Policy Statement

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

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

Flex your power!
Be energy efficient!

March 2013

NON-DISCRIMINATION
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, religion, sexual orientation, 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, religion, sexual orientation, or age, please visit the following web page: 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 the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

Appendix D Summary of Relocation Benefits

California Department of Transportation Relocation Assistance Program

Relocation Assistance Advisory Services

The California Department of Transportation (Caltrans) would provide relocation advisory assistance to any person, business, farm, or non-profit organization displaced as a result of Caltrans' acquisition of real property for public use. Caltrans would assist residential displacees in obtaining comparable decent, safe, and sanitary replacement housing by providing current and continuing information on sales prices and rental rates of available housing. Non-residential displacees would receive information on comparable properties for lease or purchase.

Residential replacement dwellings would be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, displacees would be offered comparable replacement dwellings that are open to all persons regardless of race, color, religion, sex, or national origin, and are consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance would also include supplying information concerning federal- and state-assisted housing programs, and any other known services being offered by public and private agencies in the area.

Residential Relocation Payments Program

For more information or a brochure on the residential relocation program, please contact:

State of California
Department of Transportation, District 9
500 South Main Street
Bishop, CA 93514

The brochure on the residential relocation program is also available in English at http://www.dot.ca.gov/hq/row/pubs/residential_english.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/residential_spanish.pdf.

If you own or rent a mobile home that may be moved or acquired by Caltrans, a relocation brochure is available in English at http://www.dot.ca.gov/hq/row/pubs/mobile_eng.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/mobile_sp.pdf.

Business and Farm Relocation Assistance Program

For more information or a brochure on the relocation of a business or farm, please contact:

State of California
Department of Transportation, District 9
500 South Main Street
Bishop, CA 93514

The brochure on the business relocation program is also available in English at http://www.dot.ca.gov/hq/row/pubs/business_farm.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/business_sp.pdf.

Additional Information

No relocation payment received would be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law (except for any federal law providing low-income housing assistance).

Persons who are eligible for relocation payments and who are legally occupying the property required for the project would not be asked to move without being given at least 90 days advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments would not be required to move unless at least one comparable "decent, safe, and sanitary" replacement residence, open to all persons regardless of race, color, religion, sex, or national origin, is available or has been made available to them by the state.

Any person, business, farm, or non-profit organization, which has been refused a relocation payment by Caltrans, or believes that the payments are inadequate, may appeal for a hearing before a hearing officer or the Caltrans' Relocation Assistance Appeals Board. No legal assistance is required; however, the displacee may choose to obtain legal counsel at his/her expense. Information about the appeal procedure is available from Caltrans' Relocation Advisors.

The information above is not intended to be a complete statement of all of Caltrans' laws and regulations. At the time of the first written offer to purchase, owner-occupants are given a more detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and also given a more detailed explanation of Caltrans' relocation programs.

Important Notice

To avoid loss of possible benefits, no individual, family, business, farm, or non-profit organization should commit to purchase or rent a replacement property without first contacting a Department of Transportation relocation advisor at:

State of California
Department of Transportation, District 9
500 South Main Street
Bishop, CA 93514

Appendix E Minimization and/or Mitigation Summary

This appendix is a summary of minimization and/or mitigation measures required.

Potentially Significant Impacts

Cultural Resources

The project would result in potentially significant impacts to cultural resources under CEQA. The following are proposed minimization and mitigation measures for these impacts.

Caltrans' design staff continue to work diligently with cultural resources staff and outside agencies and stakeholders to ensure every effort has been made to avoid known sites. All of the proposed project's build alternatives would also incorporate the following measures to minimize harm to cultural resources:

- Cultural resources that can be avoided during construction will be designated as environmentally sensitive areas. An Environmentally Sensitive Area Action Plan will be implemented to protect eligible sites from construction impacts associated with this project.

- A project-specific Programmatic Agreement among the Federal Highway Administration, the Bureau of Land Management, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation was signed in July 2014. The project-specific Programmatic Agreement stipulates that Caltrans, on behalf of the Federal Highway Administration, will develop and implement a Historic Properties Treatment Plan that will complete the identification effort in the Area of Potential Effects, evaluate the potential properties for the National Register of Historic Places, and provide a resolution of adverse effects to historic properties.

- Specific aspects addressed will include, but will not be limited to (see Appendix K for a complete copy of the Programmatic Agreement), the following:

    - Frequent consultation with Tribes and other consulting parties;
    - Implementation of a tribal monitoring plan;
    - Methods to eliminate to the extent possible the overlap of site boundaries;
    - Implementation of a geomorphologic study to identify sensitivity for buried resources;
    - Consultation with the State Historic Preservation Officer concerning the National Register of Historic Places eligibility of potential properties;

- Methods to identify and protect properties that can reasonably be preserved in conjunction with development of project design details;
- A research design or plan for the mitigation, analysis and sharing of study results for properties which cannot be avoided, including integration of those results into a synthesis that can inform ongoing management of cultural resources in the project area and surrounding region to address cumulative and indirect effects and public outreach efforts.

- If additional cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission, who would then notify the Most Likely Descendent. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable. Federal agencies, such as the U.S. Bureau of Land Management, have additional, specific responsibilities under 43 Code of Federal Regulations 10 that must be met in the event human remains are discovered on land under their jurisdiction.

Less than Significant Impacts with Mitigation & Less than Significant Impacts

Utilities/Emergency Services

Emergency Services

During construction, a traffic management plan would be followed to accommodate local traffic patterns and reduce delay, congestion, and accidents. By building the project in construction phases, disruption to local and regional traffic would be minimized. Caltrans would also coordinate with ambulance, police, sheriff and fire departments prior to any construction to minimize effects on emergency services.

Utilities

Caltrans would coordinate with the Los Angeles Department of Water and Power, Southern California Edison and Verizon companies to relocate utilities. Electric and telephone lines affected would be kept in operation during construction. All of the affected electrical and telephone poles, as well as underground cable lines, would be relocated on new utility easements when necessary.

Traffic and Transportation

During construction, a traffic management plan would help reduce traffic delays, congestion, and accidents. Standard Caltrans construction practices include providing

information on roadway conditions, as well as using portable changeable messages signs, lane and road closures, advance warning signs, alternate routes, reverse and alternate traffic control, and a traffic contingency plan for unforeseen circumstances and emergencies.

The Caltrans Public Affairs Office would keep the local media informed of construction progress and any delays, closures, and major changes in traffic patterns. The resident engineer would provide this information through both the Caltrans Transportation Management Center and Caltrans District 9's Traffic Branch.

Visual/Aesthetics

The following measures would be taken to minimize the impacts to visual resources:

- All median and disturbed roadside areas will be revegetated with plant species found in the Creosote Brush scrubland. Replaced trees and shrubs would be strategically located to blend with and enhance the existing plant communities.

- Caltrans will replace any Fremont cottonwood trees or native species of willow trees that are 4 inches or greater in diameter (at breast height) at a ratio determined by the California Department of Fish and Wildlife. After the roadway is constructed, a portion of the Fremont cottonwood and willow trees will be planted on-site along the outer edge of the new right-of-way near the Olancha Creek crossing, wherever it is possible. Trees will also be planted at an offsite location as close to the project site as possible. All newly planted trees would be monitored for the period to be determined by the California Department of Fish and Wildlife. Watering may be required until the taproot is established.

- Revegetation and planting measures will commence prior to the end of project construction.

- When structures are added, types, materials, colors, and textures will be selected to blend with the adjacent natural landscape components (soil, vegetation, rock, etc.) to the greatest practical degree.

- Cut and fill slopes will be contour-graded to a non-uniform profile to blend with adjacent slopes. Slope grades will be built to make planting, erosion control, and maintenance as easy and efficient as possible, with increased slope rounding at the top and bottom of cuts and fills, and by creating liberal slope variances.

- Topsoil/duff will be collected and stored for placement on disturbed areas prior to replanting.

- The native seed mix, application rates, and planting methods will be determined by or approved in cooperation with a Caltrans landscape architecture representative.

- Existing native vegetation will be protected and preserved wherever possible.

- Scenic vista points are proposed for the Caltrans Preferred Alternative and would complement the scenic nature of U.S. Highway 395. The vista points would be constructed near the crossing of Olancha Creek at the high point of the new alignment above Olancha, and would allow travelers to look at the Sierra Mountains to the west or over the Owens Dry Lake to the east.

- If used, the proposed material site would be restored by contour grading, replacing topsoil and revegetating the site with native plant or seeds. The material area would then be closed after the project is complete.

Water Quality and Storm Water Runoff

By incorporating proper and accepted engineering practices and best management practices, the project will not produce substantial or lasting impacts to water quality during its construction or its operation. Most construction activity is short term and mitigated by construction timing, sequencing, water quality protection, revegetation, and erosion and sediment control practices.

The following avoidance and minimization measures will be employed:

- A Stormwater Pollution Prevention Plan will be prepared by the contractor and implemented during construction to the satisfaction of the resident engineer. This plan will identify the sources of sediment and other pollutants that affect the quality of storm water discharges. The plan will also describe and ensure the implementation of best management practices to reduce or eliminate sediment and other pollutants in storm water as well as in non-storm water discharges.

- Best Management Practices protecting water quality will be implemented and will include:

    - Installation of measures to control temporary erosion;

    - Installation of measures to prevent debris from entering surface waters;

    - Measures to be implemented in the case of an accidental spill of hazardous materials. At a minimum, a spill kit shall be kept on-site and an Emergency Response Plan shall be developed and implemented if a spill occurs.

- Caltrans and the contractor for the project will address all potential water quality impacts that may occur during construction.

- A dredge and fill permit will be required as outlined in Section 404 of the Clean Water Act. Caltrans will comply with all permit requirements.

- If used, the proposed material site would be restored by contour grading, replacing topsoil and revegetating the site with native plant or seeds. The material area would then be closed after the project is complete.

Geology/Soils/Seismic/Topography

Caltrans will design and construct the structures in this project to seismic standards. Soil types and topography will be considered in the design and construction of the project.

Paleontology

Caltrans will implement a well-designed paleontological resource mitigation plan following Caltrans guidelines to salvage fossil specimens during the construction excavation phase for this project. Implementing a well-designed paleontological resource mitigation plan will minimize any adverse impacts to paleontological resources.

Caltrans guidelines require monitoring by a qualified Principal Paleontologist. For the Olancha Cartago Four-Lane project, monitoring by a qualified Principal will be required in specified areas north of Cartago.

Paleontological mitigation for the project will include:

- A standard special provision for paleontology mitigation will be included in the construction contract special provisions section to advise the construction contractor of the requirement to cooperate with the paleontological salvage.

- A qualified Principal Paleontologist or qualified Caltrans Paleontology Coordinator will prepare a detailed Paleontological Mitigation Plan prior to the start of construction. All geologic work will be performed under the supervision of a California Professional Geologist.

- The Principal Paleontologist or Caltrans Paleontology Coordinator will be present at pre-grading meetings to consult with grading and excavation contractors.

- Near the beginning of excavations, the Principal Paleontologist or Caltrans Paleontology Coordinator will conduct an employee environmental awareness training session for all persons involved in earth moving for the project.

- A qualified paleontology monitor under the direction of the Principal Paleontologist or Caltrans Paleontology Coordinator will be on site to inspect cuts for fossils during original grading involving sensitive geologic formations.

- When fossils are discovered, the paleontology monitor or Caltrans Paleontology Coordinator will recover them and contact a Principal Paleontologist for assistance. Construction work in these areas will be halted or diverted to allow recovery of fossil remains in a timely manner.

- Bulk sediment samples will be recovered from fossiliferous horizons and processed for microvertebrate remains as determined necessary by the principal paleontologist.

- Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, repaired, sorted, and cataloged.

- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will then be deposited in a scientific institution with paleontological collections.

- A final report will be completed that outlines the results of the mitigation program and will be signed by the Caltrans Paleontology Coordinator or Principal Paleontologist and Professional Geologist.

Hazardous Waste and Materials

Caltrans will coordinate any necessary remediation with the appropriate local and state agencies. Standard Special Provisions would be developed for this project to ensure that hazardous waste/substances discovered during construction activities would be handled appropriately.

Air Quality

Most of the construction impacts to air quality are short term in duration and therefore will not result in adverse or long-term conditions. Implementation of the following measures will reduce any air quality impacts resulting from construction activities:

- The construction contractor will comply with Caltrans' Standard Specifications Section 7-1.02C and Section 14-9 of Caltrans' Standard Specifications. Section 7, "Legal Relations and Responsibility," addresses the contractor's responsibility on many items of concern, such as air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 14-9, Air Quality, includes provisions to control dust.

- Water or dust palliative will be applied to the site and equipment as frequently as necessary to control fugitive dust emissions.

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

- Trucks will use stabilized construction entrances as they leave the right-of-way to control fugitive dust emissions.

- Construction equipment and vehicles will be properly tuned and maintained. Low sulfur fuel would be used in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.

- A dust control plan addressing sprinkling, temporary paving, and speed limits will be developed to minimize construction impacts to existing communities.

- Equipment and materials storage sites will be located as far away from residences as practical. Construction areas would be kept clean and orderly.

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

- To the extent feasible, all transported loads of soils will be covered and wet prior to transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to reduce PM_{10} and deposition of particulates during transportation.

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

- Mulch or plant vegetation will be installed as soon as practical after grading to reduce windblown particulates in the area.

Construction Noise

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02, Noise and Vibration, and applicable local noise standards. Construction noise will be short term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures will minimize the temporary noise impacts from construction:

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.

- As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Natural Communities

Fremont Cottonwood Series

Caltrans will replace any Fremont cottonwood trees or native species of willow trees that are 4 inches or greater in diameter (at breast height) at a minimum ratio of 2:1. After the roadway is constructed, a portion of the Fremont cottonwood and willow trees to be planted will be planted on-site along the outer edge of the new right-of-way at the Olancha Creek crossing as space allows. Trees will also be planted at an off-site location as close to the project site as possible. A watering and monitoring plan would be implemented to ensure the plantings are established successfully.

Wetlands and Other Waters

Project impacts were minimized where possible in the planning stages of the project. To avoid unnecessary impacts to the on-site jurisdictional wetlands and Waters of the U.S., Best Management Practices will be included in the project design. For example, all of the on-site impact areas have been reduced to the smallest practical footprint. Culverts will be installed in areas that contain existing surface water, or are prone to surface water run-off during seasonal or intermittent storms. The installation of culverts will be seasonally timed so perennial (recurring) drainages are low and ephemeral and intermittent drainages are dry.

The following avoidance and minimization measures will also be employed:

- Work in wetlands and Waters of the U.S will be conducted outside of the rainy season when flows are absent or low to minimize temporary impacts.

- A Stormwater Pollution Prevention Plan will be prepared.

- Best Management Practices protecting water quality will be implemented and will include:

    - Installation of measures to control temporary erosion;

    - Installation of measures to prevent debris from entering surface waters;

    - Measures to be implemented in the case of an accidental spill of hazardous materials. At a minimum, a spill kit shall be kept on-site and an Emergency Response Plan shall be developed and implemented if a spill occurs.

- Any portions of wetlands or waters of the U.S. that will not be permanently impacted will be protected with an Environmentally Sensitive Area (physical demarcation of a designated area to prevent construction equipment from entering the area), unless it is determined to be unfeasible. The Environmentally Sensitive Areas will be identified on the project mapping and included in the Plans, Specifications, and Estimates section of the construction contract so they can be

installed on-site prior to the start of construction. A qualified biologist would be on-site at the time of the Environmental Sensitive Area installation.

- A mandatory environmental education training would be provided for all construction personnel prior to the start of any ground-breaking activities to review the specific avoidance and minimization measures in place to eliminate unnecessary impacts to wetlands and Waters of the U.S. on the project site.

- Any temporary impacts to wetlands or Waters of the U.S. that are not treated as permanent impacts and thus mitigated for will be restored to pre-project conditions.

Permanent impacts to wetlands and other waters of the U.S. will be mitigated for through the in-lieu fee process or other method as approved by the U.S. Army Corps of Engineers and the Regional Water Quality Control Board. A minimum 1:1 compensation ratio will be implemented upon approval by the U.S. Army Corps of Engineers and the Regional Water Quality Control Board during the permitting process.

Plant Species

White Pygmy-Poppy

Impacts to the white pygmy-poppy will be minimized by duff provisions. Caltrans would collect duff and soil and then respread them in the study area. Viable seeds in the duff would be salvaged and respread so they could germinate in the next adequate rainfall. During construction, an Environmentally Sensitive Area will be established for any portions of the mapped population located within the new Caltrans right-of-way.

Crowned Muilla

Known populations of this species will be protected by the installation of an Environmentally Sensitive Area. No mitigation measures are proposed for this species.

Animal Species

Bats

There is a potential for silver-haired bats to roost within the trees along Olancha Creek. Therefore, to avoid potential impacts to this species, any trees identified for removal will be studied for the presence of loose or peeling bark prior to the onset of clearing and grubbing. If any trees with potential habitat are discovered they would be avoided, or if avoidance is not feasible, impacts would be minimized through the careful removal of the loose bark, prior to the removal of the tree.

There is also a potential for the long-legged myotis to roost within the trees along Olancha Creek and in the building proposed for demolition. Therefore, to avoid potential impacts to this species, any trees identified for removal will be studied for

the presence of loose or peeling bark prior to the onset of clearing and grubbing. If any trees with potential habitat are discovered they would be avoided, or if avoidance is not feasible, impacts would be minimized through the careful removal of the loose bark, prior to the removal of the tree. Furthermore, pre-demolition surveys will be completed in the building that is to be removed and if needed, bat exclusion will be installed to prevent this species from roosting in the building prior to its demolition.

Bats will be covered during the pre-construction clearance surveys, which will be completed at the time of the migratory bird clearance surveys. If evidence of roosting bats is discovered at the time of the surveys, the appropriate bat protection measures will be incorporated prior to the onset of construction. Exclusion methods will be provided to California Department of Fish and Wildlife prior to installation for approval, but some examples of methods used for bat exclusion include:

- Netting, foam, or other exclusion devices can be installed to prohibit use of potential roosting habitat;
- One way doors can be installed to allow roosting bats to exit but not re-enter roosting habitat;
- Any exclusionary devices used will be removed between September 1 and April 15 after construction has been completed.

Migratory Birds

All of the project build alternatives will include the removal of surface vegetation, shrubs, and trees that provide potential nesting habitat for migratory birds protected by the Migratory Bird Treaty Act of 1918. Therefore, Section 14 Special Provisions for bird protection will be included in the construction contract and will include the following avoidance and minimization measures:

- Clearing and grubbing will be completed outside of the nesting season where feasible in order to avoid unnecessary impacts migratory birds;
- Migratory bird clearance surveys will be completed 1 to 2 weeks prior to the start of construction if commencement occurs during the nesting season;
- A mandatory environmental education will be provided for all construction personnel prior to the start of any clearing, grubbing or ground-breaking activities to review the importance of avoiding impacts to nesting migratory birds observed in the project;
- Any nests discovered during the pre-construction surveys will be ESA protected along with a construction buffer to avoid impacts to young birds until they are able to fledge from the nest.

Owen's Valley Vole

Compensation for impacts to wetlands will benefit the Owen's Valley vole.

Burrowing Owl

Because burrowing owls were observed within the project site during the 2012 desert tortoise surveys, the following avoidance and minimization measures will be employed to protect this species both during and after construction.

Prior to construction, protocol level surveys will be conducted to determine the potential presence of individual burrowing owls as well as the location of any of their burrows within the project site. The surveys will follow the guidelines described in the most recent burrowing owl survey protocol. These surveys will cover the entire right-of-way as well as adjacent undeveloped lands located approximately 500 feet beyond the new right-of-way to address indirect impacts to this species that will result from the constructed project. The surveys will be used to determine the following:

- If any burrowing owls or active burrows are present in or in the immediate vicinity of the right-of-way;

- If any individual owls need to be trapped and relocated;

- If any active burrows need to be collapsed to prevent owls from returning to the project site and possibly becoming disturbed by the construction activities or by the introduction of vehicles to the area as a result of the constructed project;

- If any active burrows contain owlets (during the nesting season, approximately April 15 to July 15) that would need to be protected with an established Environmentally Sensitive Area and appropriate construction buffer that would be in place until the owlets fledge.

If it is determined that a burrowing owl needs to be relocated or that an active burrow needs to be collapsed to prevent owls from re-entering the project site, the following avoidance measures will be implemented:

- A biologist will collapse any active burrows and trap and relocate any live burrowing owls found in the survey area (areas in the new right-of-way and areas of indirect impact, located approximately 500 feet beyond the new right-of-way);

- Construction activities in proximity to an Environmentally Sensitive Area-protected burrow will be monitored on a weekly basis by a project biologist;

- Weekly monitoring will be continued until the owlets have fledged, or construction has been completed in the area, or the biologist, in consultation

with the California Department of Fish and Wildlife, determines that monitoring is no longer needed in that location.

Prior to the onset of any ground disturbing activities associated with the project, the monitor shall provide all construction personnel who will be present on the work site (within or adjacent to the right-of-way) with a mandatory worker education training which will include the following information:

- A detailed description of the burrowing owl and their life history, including color photographs of the species as well as their scat and burrows;
- A description of the protection the burrowing owl receives from the California Department of Fish and Wildlife and possible legal action that may be incurred for violation of the protection this species receives;
- All trash that may attract predators of burrowing owls will be removed from work sites, or completely secured at the end of the day;
- All workers will be advised that equipment and vehicles must remain within the designated work areas, to be provided and approved by the monitor prior to the onset of construction.

Golden Eagle

Clearing and grubbing will be completed between September 1 and February 15 (which is outside of the nesting season), unless deemed unfeasible. If clearing and grubbing cannot be completed during the above time frame, clearance surveys for golden eagles must be completed 1 to 2 weeks prior to the start of work.

If any eagle nests are discovered during the clearance surveys, an Environmentally Sensitive Area and construction buffer will be established around the nest. A qualified project biologist will be present to monitor the nest during all construction activities in the vicinity of the nest and the Environmentally Sensitive Area will be maintained until the young have fledged.

An environmental Worker Education Training will be provided to all workers who enter the project site to discuss the golden eagle. In addition to providing a description of the protection the golden eagle receives, the Worker Education Training will also inform workers that if any eagles are observed on the site, construction activities will be halted until the individual leaves the site on its own accord.

A project biologist will be present at the project site at least once per week throughout the duration of construction. Golden eagles will be watched for, even if no birds are observed on the project site between now and the start of construction.

Loggerhead Shrike

Tree and vegetation removal have been proposed to occur between approximately September and February, outside of the nesting season, unless deemed unfeasible and subsequently pre-authorized by the project biologist. Pre-construction migratory bird clearance surveys will be conducted both prior to any clearing and grubbing, and prior to the start of construction, if these activities do not occur concurrently. If any nesting loggerhead shrikes are discovered within the project site, an Environmentally Sensitive Area and construction buffer will be established around the nest until young have fledged. The mitigation proposed for the desert tortoise will benefit the loggerhead shrike (see Threatened and Endangered Species, Section 2.3.5).

Le Conte's Thrasher

Prior to any clearing and grubbing, migratory bird clearance surveys will be completed, although this species is not covered under the Migratory Bird Treaty Act, if any nesting Le Conte's thrashers are discovered in the project site, an Environmentally Sensitive Area will be established around the nest and will include a protective buffer to avoid disturbance to the nesting pair until their young have fledged. No other minimization or mitigation measures are anticipated. The mitigation proposed for the desert tortoise will benefit the Le Conte's thrasher(see Threatened and Endangered Species, Section 2.3.5).

Northern Sagebrush Lizard

If individual northern sagebrush lizards are observed during preconstruction surveys, their location would be recorded and any suitable burrows found will be avoided as feasible. In addition, it is expected that any individuals would leave the area prior to becoming injured once construction activities begin. No other minimization or mitigation measures are proposed for this species.

Mountain Plover

Pre-construction migratory bird clearance surveys will be completed on the project site prior to any ground-disturbing activities, such as clearing and grubbing, which will allow project biologists to determine the potential presence of any species of wildlife, including the mountain plover. No additional minimization or mitigation measures are proposed because it is anticipated that if any mountain plovers are present on the project site prior to the onset of any ground disturbing activities, they will leave on their own accord.

Yellow-Breasted Chat

Pre-construction migratory bird surveys will act as an avoidance measure that will benefit this species if they do happened to nest within the project site. No other minimization or mitigation measures are proposed.

Threatened and Endangered Species

Least Bell's Vireo

Clearing and grubbing along Olancha Creek is anticipated to occur outside of the migratory bird breeding season and migratory nesting bird surveys will be completed prior to any ground disturbance and/or removal of vegetation. However, because no potentially suitable habitat is present in the project area, no additional avoidance, minimization, or mitigation measures are proposed.

Swainson's Hawk

Clearing and grubbing will be completed outside of the nesting season to avoid impacts to nesting birds, unless deemed unfeasible. If clearing and grubbing cannot be completed during the above time frame, clearance surveys for Swainson's hawks will be completed 1 to 2 weeks prior to the start of work. If any active nests are discovered during surveys, Caltrans will establish a protective Environmentally Sensitive Area and a construction buffer will be implemented to protect the young until they have fledged.

Desert Tortoise

A Biological Opinion was issued for the Caltrans Preferred Alternative. The USFWS concluded that although the project may affect and is likely to adversely affect the desert tortoise, it is not likely to jeopardize its continued existence. The following avoidance and minimization measures will be employed to protect the desert tortoise prior to and during construction.

- Prior to construction, a U.S. Fish and Wildlife Service-authorized biological monitor(s) will conduct focused clearance surveys for the desert tortoise. The surveys will follow U.S. Fish and Wildlife Service desert tortoise survey protocol. The surveys will cover the entire right-of-way as well as adjacent undeveloped lands located between the existing and new alignment and between the new alignment and the Aqueduct.

- The biological monitor(s) will determine if any tortoises are present on or in the vicinity of the project site, and if any tortoises need to be relocated, and/or any burrows collapsed. Upon discovery of a tortoise or active tortoise burrow during preconstruction surveys, the following avoidance measures will be implemented:

    - An on-call U.S. Fish and Wildlife Service-authorized desert tortoise biologist will be contacted to collapse any recent tortoise burrows and/or to relocate any live tortoises.

    - The U.S. Fish and Wildlife Service-authorized desert tortoise biologist may choose to contact the U.S. Fish and Wildlife Service to determine if the collapsing of a particular burrow and/or the relocation of an individual is appropriate. If it is deemed unnecessary to collapse a burrow, the biological monitor(s) will establish an Environmentally

Sensitive Area around the burrow. Any Environmentally Sensitive Area burrow will be monitored by the designated biological monitor(s) at the onset of construction activities in the proximity. The biological monitor(s) will be present until construction has been completed in the area, or until the biological monitor(s), in consultation with the U.S. Fish and Wildlife Service, deems that monitoring is no longer needed in that location.

Field Contact Representative

- Caltrans will assign a field contact representative with specific experience in the implementation of environmental compliance programs and will act as the liaison among Caltrans, construction workers, authorized biologists, and biological monitors. The field contact representative and authorized biologists will ensure permit compliance. However, the authorized biologist and/or biological monitor will be the only ones in direct contact with wildlife agency staff.

- The field contact representative will have the authority to stop project activities if a desert tortoise is in danger or protective measures are not adequately implemented.

Authorized Biologist and Biological Monitors

- Caltrans will provide U.S. Fish and Wildlife Service authorized biologists and biological monitors to ensure protective measures are in place for the desert tortoise. Use of authorized biologists and biological monitors will be in accordance with the most up-to-date U.S. Fish and Wildlife Service guidelines and will be required for monitoring of any construction activities that may injure or kill desert tortoises.

- Caltrans will review the credentials of all authorized biologists and provide them to the U.S. Fish and Wildlife Service for approval at least 30 days prior to the start of fieldwork.

- Authorized biologists will be responsible for clearance surveys, monitoring, developing and implementing the worker-awareness program, contacting U.S. Fish and Wildlife Service personnel, long-term monitoring and reporting, and be present during construction, operation, and maintenance that could affect the desert tortoise.

- The Caltrans field contact representative will act on the advice of the authorized biologist to ensure conformance with the protective measures set forth in the Biological Opinion (see Appendix J). Authorized biologists will have the authority to immediately stop work that is not in compliance with these conditions.

Worker Environmental Awareness Program

Caltrans will be responsible for ensuring that all workers at the site receive worker environmental awareness training prior and during construction. The field contact representative and authorized biologist will administer the training to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. Caltrans will implement the worker environmental awareness program to ensure the safeguard of environmentally sensitive resources. The environmental awareness program will be available in English and Spanish and wallet-sized cards summarizing the information will be provided to all construction personnel. The worker environmental awareness training will:

- Be developed by or in consultation with the authorized biologist and consist of an onsite or training center presentation in which supporting written material and electronic media, including photographs, are made available to all participants.

- Provide an explanation of the purpose and function of the desert tortoise avoidance and minimization measures and the possible penalties for not adhering to them.

- Informing workers that the field contact representative and authorized biologists have the authority to stop work in any area where there would be an unauthorized adverse impact to biological resources if the activities continued.

- Discussing general safety protocols.

- Providing an explanation/identification of the sensitivity and location of the vegetation, biological resources, and habitat within and next to work areas.

- Place special emphasis on the desert tortoise, including information on physical characteristics, photographs, distribution, behavior, sensitively to human activates, legal protection, reporting requirements, and conservation measures required for the project.

- Direct all worker environmental awareness program trainees to report all observations of listed species and their sign to an authorized biologist for inclusion in the monthly compliance report.

- Include a training acknowledgment form that would be signed by each worker indicating that they received training and will abide by the guidelines.

- Provide information on the effects of predation on the desert tortoise by common ravens and other predators and the measures that have been developed to reduce the likelihood predators will be attracted to construction areas.

Construction Monitoring

- An appropriate number of authorized biologists and biological monitors will be available during construction for the protection of the desert tortoise. Authorized biologists will be assigned to monitor each area of activity where conditions exist that may result in take of the desert tortoise.

- The authorized biologist will conduct preconstruction surveys and stop construction activities if a desert tortoise is found within the path of construction equipment. Construction activities will not resume until the desert tortoise moves out of harm's way or the authorized biologist has relocated it.

- An authorized biologist will inspect all excavations that are not within desert tortoise exclusion fencing on a regular basis (several times a day) and immediately prior to filling the excavation. If project personnel discover a desert tortoise in an open trench, an authorized biologist will move it to a safe location.

Designated Areas

- Prior to the start of construction, the project area will be delineated with staking/flagging to clearly identify the limits of work. The markings will be maintained until the exclusionary fencing has been installed.

- Caltrans will confine all project activities to the smallest practical area and will use previously disturbed habitat as much as possible for vehicle turn-around locations and storage areas. Caltrans will restrict project vehicles to stay within the right-of-way, designated areas, or existing roads and will prohibit off-road or cross-county travel except in emergencies. Caltrans will not create any new dirt or additional paved roads. If unforeseen circumstances require disturbance beyond the project right-of-way, Caltrans will notify the U.S. Fish and Wildlife Service immediately.

Vehicle Use

- The field contract representative or authorized biologist will inform workers at morning briefings if desert tortoises are likely to be active that day or for the foreseeable future. When desert tortoises are expected to be active, workers will inspect the ground around and underneath any vehicle or construction equipment that has been parked longer than 2 minutes within desert tortoise habitat. If a desert tortoise is located, the worker will contact an authorized biologist. If possible, the desert tortoise will be left to move on its own. If the desert tortoise requires removal, an authorized biologist will move it in accordance with the proper handling procedures.

Prohibited Activities

- Caltrans will ensure that workers do not bring firearms or pets into the project area.

Trash and Food

- To prevent common ravens and coyotes from occupying the construction area, trash will be placed in sealed containers and emptied at the close of business each day. The project area will be kept clean from trash as much as possible.

The following permanent, on-site avoidance measures will be implemented to protect the desert tortoises inhabiting areas within and adjacent to the project site:

- Installation of permanent exclusionary desert tortoise fencing.

- Installation of approximately thirteen or more tortoise undercrossings, to be appropriately sized and installed in locations where new culverts have been specified and where passage for desert tortoises is most likely to occur. Caltrans will ensure that all undercrossing entrances and exits are designed to prevent entrapment of the desert tortoises and are regularly cleared of debris after the project is completed.

- Installation of tortoise friendly cattle guards at public access roads (roads that must remain open to public traffic) to prevent tortoise access on to the new alignment. The cattle guards will be modified to include cement tortoise escape ramps, so individuals do not become entrapped.

- Gates with desert tortoise fencing will be installed at all other privately owned access openings to prevent the animals from accessing the new highway.

Exclusionary Fencing

- The first order of construction will be to install permanent desert tortoise exclusionary fencing which will be installed according to the protocols in the Desert Tortoise Field Manual. If desert tortoises are encountered during the installation of the fence, the authorized biologist will move them to an area outside the fence.

- After the exclusionary fencing has been installed and before the onset of ground-disturbing activities, the authorized biologist will survey the area and remove all desert tortoises. The authorized biologist will survey the area following established survey protocols to ensure all desert tortoises have been found.

- Caltrans will maintain the integrity of the fence to ensure that desert tortoises are excluded from the work area during construction. The fence will be

inspected regularly, initially on a monthly basis. Caltrans will inspect and, if necessary, repair the fence immediately after any significant rainstorm that occurs during times of the year or at temperatures when desert tortoises are likely to be active.

Desert Tortoise Relocation

- Desert tortoises found within the project area will be handled and relocated by an authorized biologist. Desert tortoises excavated from burrows must be relocated to unoccupied natural or artificially constructed burrows 150 to 300 feet from the original burrow. Relocated desert tortoises will be monitored for at least 2 days after placement in the new burrow to ensure their safety.

Reporting Requirements

Within 60 days of construction completion, Caltrans must provide a report to the U.S. Fish and Wildlife Service that provide details on the effects of the action on the desert tortoise. Specifically, the report must include information on any instances when desert tortoises were killed, injured, or handled.

Disposition of Dead or Injured Desert Tortoises

Within 3 days of locating any dead or injured desert tortoises, Caltrans will notify the Palm Springs Fish and Wildlife Service Office and issue a report that includes the date, time, and location of the carcass, a photograph, cause of death (if known), and any other pertinent information. Caltrans will take injured desert tortoises to a qualified veterinarian for treatment and contact the U.S. Fish and Wildlife Service regarding their final disposition.

Compensatory Mitigation for the Desert Tortoise

Mitigation for direct impacts to desert tortoise habitat will be accomplished by purchasing mitigation bank credits or through the preservation of suitable desert tortoise habitat to be preserved in perpetuity. The compensatory mitigation ratio will be determined during the California Department of Fish and Wildlife Incidental Take Permitting process.

Mohave Ground Squirrel

Avoidance and minimization measures for the Mohave ground squirrel will include an environmental awareness program for all workers to inform them of the protection measures being implemented to avoid take of the Mohave ground squirrel, based on the conditions outlined in the Incidental Take Permit issued by the California Department of Fish and Wildlife.

Measures will also be contained within the contract special provisions that require work to be stopped in the event a squirrel is located within the project site or becomes

injured as a result of the construction activities. Work will not resume until an authorized biologist has relocated the squirrel or allowed it to disperse on its own.

Caltrans would compensate for direct impacts to Mohave ground squirrel habitat concurrently when compensating for impacts to desert tortoise habitat through selection of land that will benefit the recovery of both species.

Southwestern Willow Flycatcher

The Biological Opinion issued for the Caltrans Preferred Alternative found that the project may affect, but is not likely to adversely affect this species. Per the Biological Opinion, the following avoidance and minimization measures will be implemented:

- All clearing and grubbing along Olancha Creek will be completed prior to or after the southwestern willow flycatcher migratory season (approximately May through June and mid-August to September);
- A qualified biologist will conduct focused surveys prior to any clearing and grubbing activities;
- Caltrans will implement a worker awareness and education program for all workers that will include information about the southwestern willow flycatcher, its ecology, legal status, and the importance of protecting riparian habitat in the action area;
- Riparian habitat along the new alignment will be fenced to prevent equipment and vehicles from entering it. A qualified biologist will determine the extent of the fencing and will be present when the protective fencing is installed;
- Native riparian trees, such as Fremont cottonwood (*Populus fremontii*) and black willow (*Salix gooddingii*), will be planted along where the new alignment crosses Olancha Creek.

Compensatory mitigation for the loss of habitat would be accomplished by enhancement, restoration or preservation of riparian habitat at a 2:1 ratio as approved by the California Department of Fish and Wildlife.

Invasive Species

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur. Other measures include commitments to ensure to use of invasive-free mulches, and to help reduce existing populations of invasive non-native plants.

Appendix F SHPO Concurrence

STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARTZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

May 27, 2004

In reply refer to:
FHWA 040408A

Christopher Ryan, Associate Archaeologist
California Department of Transportation
50 Higuera Street
San Luis Obispo, California 93401-5415

RE: SECTION 106 CONSULTATION ON CALTRANS' ELIGIBILITY DETERMINATIONS FOR OLANCHA/CARTAGO FOUR LANE PROJECT, INYO COUNTY, CALIFORNIA, 09-INY-395, KP 49.6/66.9 (PM 30.8/41.8), EA 09-213400

Dear Mr. Ryan:

Thank you for your submittal of April 7, 2004, that initiates consultation with me regarding the Eligibility Determinations for the cultural resources that were identified within the Area of Potential Effects (APE) of the undertaking referenced above. The California Department of Transportation (Caltrans), under the authority of the Federal Highway Administration (FHWA), is consulting with me in accordance with the January 2004 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA). Specifically, pursuant to Stipulation VIII.C.5 of the PA, Caltrans is requesting my concurrence with their eligibility determinations for some of the potential historic properties identified within the undertaking's APE.

Your submittal included the following studies:

- *Historic Property Survey Report Olancha/Cartago Four-Lane Project, US Route 395 Inyo County, California* (HPSR) by Christopher Ryan, 2004;
- *Archaeological Survey Report for the Olancha/Cartago Four-Lane Project, US Route 395, Inyo County, California* (ASR) by Robert Parr and his associates, 2001;
- *Lacustrine Lifestyles Along Owens Lake, NRHP Evaluations of 15 Prehistoric Sites for the Olancha/Cartago Four-Lane Project, US Route 395, Inyo County, California* by Brian Byrd and Micah Hale, 2003;
- *Historical Architectural Survey Report* (HASR) by Douglas Dodd, 2003;
- *Historic Study Report* (HSR) by Scott Baxter and Rebecca Allen, 2003; and,
- *Participants and Observers: Perspectives on Historic Native American Information From Independence to Haiwee Reservoir in Owens Valley for the Olancha/Cartago Four-Lane Project, US Route 395, Inyo County, California* by Shelley Davis-King, 2003.

I understand those efforts to identify potential historic properties within the APE of the proposed undertaking resulted in the identification of 175 cultural resources. As you have stated, seventy-one of these resources were exempted from formal evaluation pursuant to Stipulation VIII.C.1 and Attachment 4 of the PA. I understand that the exempted resources include 22 isolated artifacts and 49 built-environment resources. I also acknowledge that the evaluation of 38 other resources is being postponed until the selection of a recommended alternative is made. Of the remaining 66 resources, you have re-examined the original National Register of Historic Places (National Register) eligibility determinations

of seven resources and performed formal evaluations of 59 previously-unevaluated resources. The 59 formally evaluated resources include 23 archaeological resources and 36 built-environment resources.

I understand that of the seven previously evaluated resources, Caltrans conducted archaeological excavations at two previously determined National Register eligible sites (CA-INY-43 and CA-INY-1371) in order to ascertain whether deposits contributing to their eligibility existed within the proposed Caltrans Phase 2 – Study Area. On the basis of the work conducted, Caltrans determined that those portions of CA-INY-43 that overlap the Phase 2 Study Area (aka. Area of Direct Impact) do not contain deposits which would contribute to the site's eligibility under Criterion D or meet any of the other National Register criteria. I also understand that CA-INY-1317 obtained the eligibility status that was ascribed to three delisted sites (CA-INY-3807, -3809, -3810) and that based on the excavations conducted at this site that Caltrans determined that the portions of CA-INY-1317 which overlap the Phase 2 Study Area contain deposits which contribute to the site's National Register eligibility under Criterion D.

Based on my review of the submitted documents, I concur with Caltrans' determination that those portions of CA-INY-43 which are within the Phase 2 Study Area do not contain deposits which would contribute to the site's National Register eligibility under Criterion D or any of the other National Register criteria. I also concur with Caltrans' determination that those portions of CA-INY-1317 which are within the Phase 2 Study Area do contain deposits that contribute to the site's National Register eligibility under Criterion D.

By applying the National Register criteria (36 CFR Part 63), Caltrans has determined that the following 16 prehistoric and historical archaeological sites and 35 built environment resources do not meet the applicable aspects of integrity and are ineligible for inclusion in the National Register under Criteria A, B, C or D. Based on the information presented in the submitted materials, I concur with Caltrans' determination that the following resources are not eligible for the National Register:

Prehistoric/Historical Archaeological Sites Determined Ineligible for National Register:

- CA-INY-290
- CA-INY-1991/H (historical component only)
- CA-INY-4837
- CA-INY-5953H
- CA-INY-5956
- CA-INY-5957H
- CA-INY-5958/H (prehistoric and historical components)
- CA-INY-6397H
- CA-INY-5964
- CA-INY-5966
- CA-INY-5981
- CA-INY-6394H
- CA-INY-6395H
- CA-INY-6396H
- CA-INY-6398H

I understand that prehistoric archaeological site CA-INY-5990 was not fully evaluated due to denied property access, but the portion of the site that was excavated was determined by Caltrans to be ineligible for the National Register and does not contribute to any potential eligibility of the larger resource. I concur with Caltrans determination for this resource.

Based on the information presented in the submitted materials, I concur with Caltrans' determination that the following archaeological resources are eligible for the National Register:

- CA-INY-1991/H (prehistoric component only)
- CA-INY-5967
- CA-INY-5984
- CA-INY-6021
- CA-INY-6263

While I concur with the eligibility determination for CA-INY-5350H, the Cartago Townsite Dump, I would like to point out that the eligibility argument, as presented, lacks an appropriate archaeological framework in which to evaluate the property's significance. And more specifically, it lacks detail on the demonstrated research potential of dumps and the identification of important research questions against which the recovered data sets can be evaluated. Notwithstanding these concerns about the significance argument in an otherwise well organized and nicely produced report, I was able to understand the nature of this property. This understanding coupled with an understanding of the research value of similar property types, rather than the arguments offered in the HSR, enables me to concur with Caltrans' determination that CA-INY-5350H is eligible for inclusion in the National Register under Criterion D.

I acknowledge that pending selection of a recommended alternative, that Caltrans will examine the project design to determine whether the undertaking has the potential to affect any unevaluated cultural resources. If so, a supplemental HPSR will be prepared and submitted to me at that time. I also acknowledge that a determination on the Finding of Effect for this undertaking, pursuant to Stipulation IX of the PA, has not been addressed at this time, but will be pursued in future correspondence with this office upon the selection of a recommended alternative.

I look forward to continuing our consultation efforts for this undertaking. Please do not hesitate to contact Blossom Hamusek, Staff Archaeologist at (916) 651-6956 or at bhamu@ohp.parks.ca.gov, if you have any questions or need clarification of any of my comments.

Sincerely,

Stephen D. Mikesell
Acting State Historic Preservation Officer

STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

March 23, 2010 In Reply Refer To: FHWA100211B

Tom Mills
California Department of Transportation District 9
500 South Main Street
Bishop, California 93514

Re: Determination of National Register of Historic Places Eligibility for Olancha/Cartago Four Lane Project, All-West Alternative, Inyo County, California, 09-INY-395, PM 30.8/41.8, EA 09-213400

Dear Mr. Mills:

Thank you for seeking my consultation regarding the above noted undertaking in accordance with the *Programmatic Agreement* (PA) *Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California.* Pursuant to Stipulation VIII of the PA, the California Department of Transportation (Caltrans) has determined the Area of Potential Effects (APE) and has completed identification and evaluation of historic properties within the APE. You are requesting my concurrence, pursuant to Stipulation VIII.C.5 of the PA, on your determination of eligibility, for the National Register of Historic Places (NRHP), of the historic properties identified within the APE. In addition to your letter of January 20, 2010, you have submitted the following documents in support of this undertaking:

● *Supplemental Historic Property Survey Report; Olancha/Cartago Four-Lane All West Alternative Project; 09-INY-935 PM30.8/PM41.8 09-213400* (California Department of Transportation: December 2009).

As documented in the reports noted above, Caltrans has identified 100 cultural properties and or sites within the project APE including CA-INY-1317, a previously determined eligible multi-component site. Caltrans has determined that they will treat, pursuant to Stipulation VIII.C.3 of the PA, six archeological sites (PLI-29, PLI-30, PLI-31, PLI-36, PLI-61, and PLI-74) as eligible for the NRHP for the purposes of this undertaking only, and establish Environmentally Sensitive Areas (ESAs) to ensure that these sites are not affected by the proposed project.

The NRHP eligibility determinations that Caltrans is requesting my concurrence on are for 42 historic sites, 37 prehistoric sites, 17 multi-component sites, and 4 ethnohistoric sites. Based on my review of your letter and supporting documentation, I have the following comments:

FHWA100211B 03/23/2010

1) I concur that 69 sites (24 prehistoric, 34 historic, and nine multi-component, and two ethnohistoric) as listed in Table 3 on pages four through six of the Supplemental Historic Property Survey Report are not eligible for the NRHP.

2) I further concur with your recommendation that six archeological sites (PLI-29, PLI-30, PLI-31, PLI-36, PLI-61, and PLI-74) are to be treated as eligible for the purposes of this project.

3) I further concur with your plan to continue consultation on the 24 sites (PLI-4, PLI-5, PLI-7, PLI-19, PLI-20, PLI22, PLI-25, PLI-34, PLI-37, PLI-40, PLI43, PLI-49, PLI-51, PLI-56, PLI 62, PLI-67, PLI-68, PLI-69, PLI-71, PLI-76, PLI-87, PLI-88, PLI-95, and CA-INY-323) as listed in Table 4 (pages six and seven) of the Supplemental Historic Property Survey Report pending eligibility recommendations until further testing can be initiated and plan alternatives chosen.

If you require further information, please contact Trevor Pratt, Assistant State Archeologist, at phone 916-651-0831 or email tpratt@parks.ca.gov or Natalie Lindquist, State Historian, at 916-654-0631 or email nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

2

continued consultation with Native American consulting parties in the development of these plans and throughout the project.

Caltrans has determined a *Finding of Adverse Effect* for this project. I concur with this finding and also agree Caltrans should proceed with the development of an HPTP. I look forward to continue consultation and development of the PA implementing the HPTP.

Thank you for considering historic properties as part of your project planning and I look forward to continuing consultation as we work toward these goals. If you have any questions or concerns, please contact State Historian, Natalie Lindquist at (916) 445-7014 or by email at natalie.lindquist@parks.ca.gov.

Sincerely,

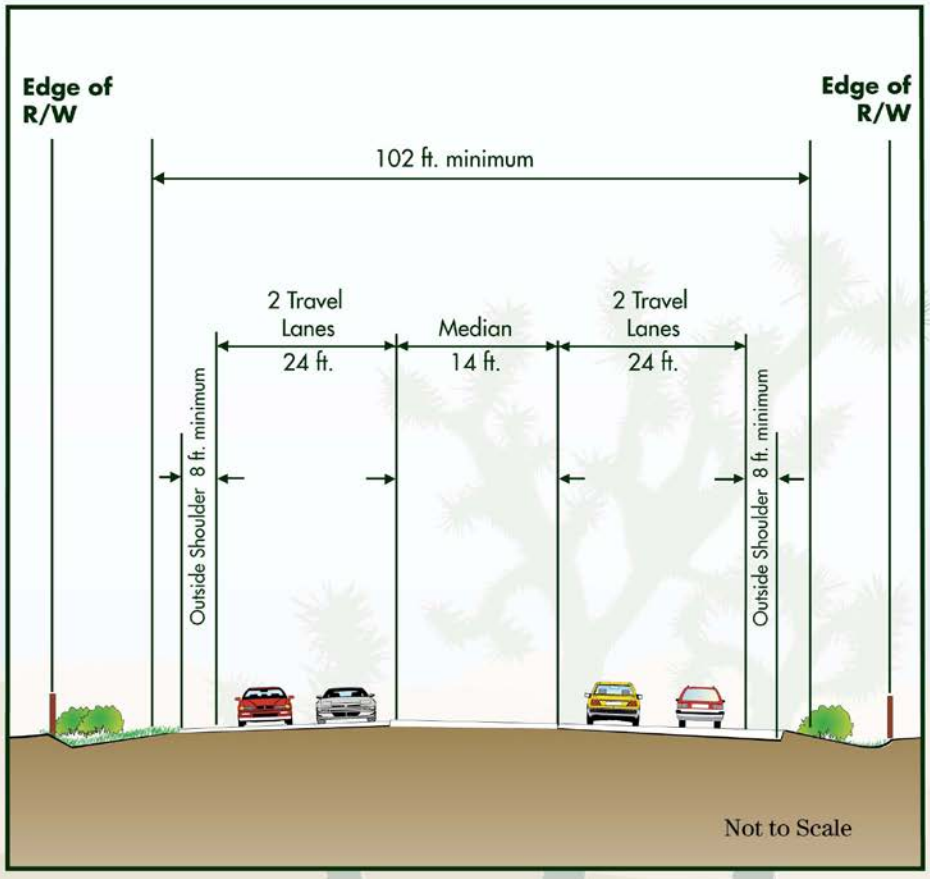
Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, PhD
State Historic Preservation Officer

Appendix G Typical Cross Sections

Olancha ~ Cartago
4-Lane Project

Cross Section



Alternative 1

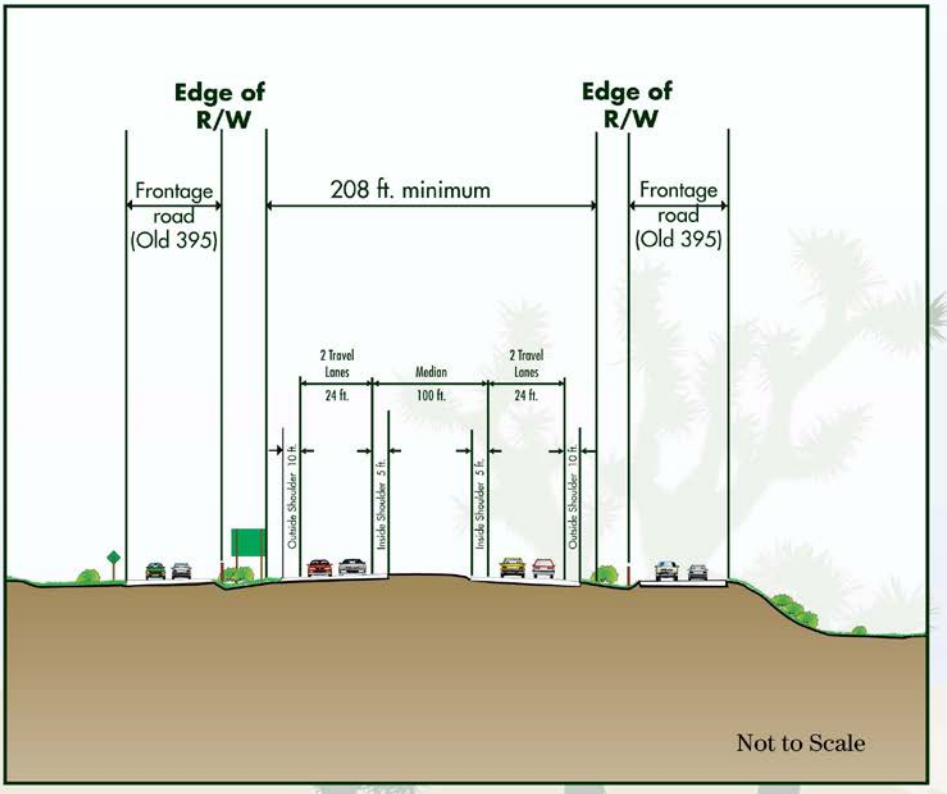
PM 37.1 - 38.4 (Through Cartago) **and** **PM 32.2 - 35.7** (Through Olancha)

Caltrans

US Department of Transportation
Federal Highway Administration

Olancha ~ Cartago
4-Lane Project

Cross Section



Alternative 2 and 2A

Expressway with Frontage Road

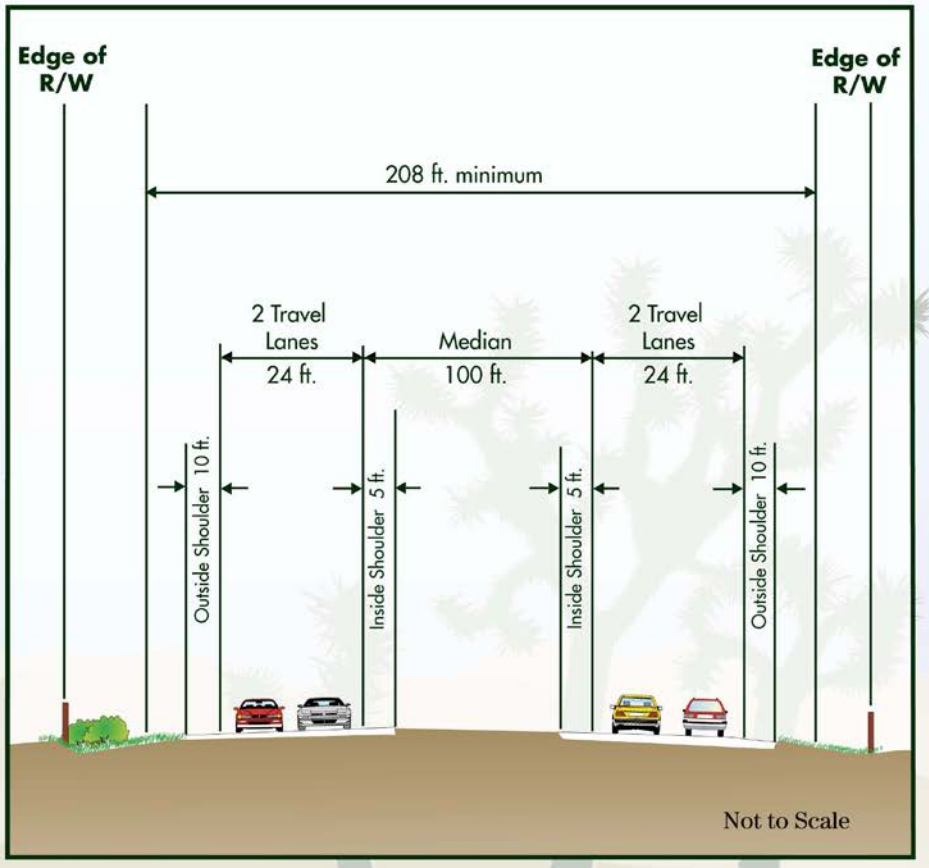
(Frontage Roads will be on one side or the other but not both)

Caltrans

US Department of Transportation
Federal Highway Administration

Olancha ~ Cartago
4-Lane Project

Cross Section



All Alternatives

Expressway without Frontage Roads

Caltrans

US Department of Transportation
Federal Highway Administration

Appendix H Service Species List

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Bartlett (3611841) or Haiwee Reservoirs (3611728) or Olancha (3611831) or Vermillion Canyon (3611738) or Haiwee Pass (3611821) or Lone Pine (3611851) or Owens Lake (3611748) or Upper Centennial Flat (3611727) or Cirque Peak (3611842) or Templeton Mtn. (3611832) or Monache Mountain (3611822) or Long Canyon (3611811) or Coso Junction (3611718))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia alpina Ramshaw Meadows abronia	PDNYC01020	Candidate	None	G2	S2	1B.1
Active Desert Dunes Active Desert Dunes	CTT22100CA	None	None	G4	S2.2	
Alkali Seep Alkali Seep	CTT45320CA	None	None	G3	S2.1	
Anaxyrus canorus Yosemite toad	AAABB01040	Threatened	None	G2	S2	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Astragalus atratus var. mensanus Darwin Mesa milk-vetch	PDFAB0F0Z3	None	None	G4G5T1	S1	1B.1
Astragalus hornii var. hornii Horn's milk-vetch	PDFAB0F421	None	None	G4G5T2T3	S1	1B.1
Astragalus lentiginosus var. kernensis Kern Plateau milk-vetch	PDFAB0FB98	None	None	G5T2T3	S2S3	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Batrachoseps robustus Kern Plateau salamander	AAAAD02X20	None	None	G2	S2	
Boechera tularensis Tulare rockcress	PDBRA40130	None	None	G2	S2	1B.3
Botrychium ascendens upswept moonwort	PPOPH010S0	None	None	G3	S2	2B.3
Botrychium crenulatum scalloped moonwort	PPOPH010L0	None	None	G3	S2	2B.2
Botrychium lunaria common moonwort	PPOPH01080	None	None	G5	S2?	2B.3
Botrychium minganense mingan moonwort	PPOPH010R0	None	None	G4G5	S2	2B.2
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Calochortus excavatus Inyo County star-tulip	PMLIL0D0F0	None	None	G2	S2	1B.1
Calyptridium pygmaeum pygmy pussypaws	PDPOR09070	None	None	G2	S2	1B.2

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2	SSC
Charadrius montanus mountain plover	ABNNB03100	None	None	G3	S2?	SSC
Clarkia xantiana ssp. parviflora Kern Canyon clarkia	PDONA05181	None	None	G4T3	S3	4.2
Cordylanthus eremicus ssp. kernensis Kern Plateau bird's-beak	PDSCR0J043	None	None	G3?T2	S2	1B.3
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Cryptantha circumscissa var. rosulata rosette cushion cryptantha	PDBOR0A0G3	None	None	G5T2	S2	1B.2
Cymopterus ripleyi var. saniculoides sanicle cymopterus	PDAPI0U0X1	None	None	G3G4T3Q	S1	1B.2
Cyprinodon radiosus Owens pupfish	AFCNB02090	Endangered	Endangered	G1	S1	FP
Deinandra mohavensis Mojave tarplant	PDAST4R0K0	None	Endangered	G2G3	S2S3	1B.3
Dipodomys panamintinus argusensis Argus Mountains kangaroo rat	AMAFD03091	None	None	G5T1T3	S1S3	
Dipodomys panamintinus panamintinus Panamint kangaroo rat	AMAFD03092	None	None	G5T3	S3	
Eremothera boothii ssp. boothii Booth's evening-primrose	PDONA03052	None	None	G5T4	S2	2B.3
Eriogonum mensicola Pinyon Mesa buckwheat	PDPGN084H1	None	None	G2G3	S2	1B.3
Eriogonum wrightii var. olanchense Olancha Peak buckwheat	PDPGN086D3	None	None	G5T2	S2	1B.3
Euderma maculatum spotted bat	AMACC07010	None	None	G4	S3	SSC
Gopherus agassizii desert tortoise	ARAAF01012	Threatened	Threatened	G3	S2	
Gulo gulo California wolverine	AMAJF03010	None	Threatened	G4	S1	FP
Hackelia sharsmithii Sharsmith's stickseed	PDBOR0G0Q0	None	None	G2G3	S2S3	2B.3
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Ivesia campestris field ivesia	PDROS0X050	None	None	G3	S3	1B.2
Ixobrychus exilis least bittern	ABNGA02010	None	None	G5	S2	SSC

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Lupinus padre-crowleyi Father Crowley's lupine	PDFAB2B2Z0	None	Rare	G2	S2	1B.2
Margaritifera falcata western pearlshell	IMBIV27020	None	None	G4G5	S1S2	
Martes caurina sierrae Sierra marten	AMAJF01014	None	None	G5T3	S3	
Mentzelia tridentata creamy blazing star	PDLOA031U0	None	None	G3	S3	1B.3
Microtus californicus vallicola Owens Valley vole	AMAFF11033	None	None	G5T3	S3	SSC
Minuartia stricta bog sandwort	PDCAR0G0U0	None	None	G5	S2	2B.3
Monardella beneolens sweet-smelling monardella	PDLAM180U0	None	None	G1	S1	1B.3
Myotis volans long-legged myotis	AMACC01110	None	None	G5	S4?	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4?	
Ochotona princeps schisticeps gray-headed pika	AMAEA0102H	None	None	G5T2T4	S2S4	
Oncorhynchus mykiss aguabonita Volcano Creek golden trout	AFCHA0209A	None	None	G5T1	S1	SSC
Oryctes nevadensis Nevada oryctes	PDSOL0Q010	None	None	G2G3	S2	2B.1
Ovis canadensis sierrae Sierra Nevada bighorn sheep	AMALE04015	Endangered	Endangered	G4T1	S1	FP
Pekania pennanti fisher - West Coast DPS	AMAJF01021	Proposed Threatened	Candidate Threatened	G5T2T3Q	S2S3	SSC
Phacelia inyoensis Inyo phacelia	PDHYD0C2F0	None	None	G2	S2	1B.2
Phacelia nashiana Charlotte's phacelia	PDHYD0C350	None	None	G3	S3	1B.2
Plagiobothrys parishii Parish's popcornflower	PDBOR0V0U0	None	None	G1	S1	1B.1
Plebulina emigdionis San Emigdio blue butterfly	IILEPG7010	None	None	G1G2	S1S2	
Poa lettermanii Letterman's blue grass	PMPOA4Z1H0	None	None	G4	S3	2B.3

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Pohlia tundrae tundra thread moss	NBMUS5S1B0	None	None	G2G3	S2S3	2B.3
Pyrgulopsis wongi Wong's springsnail	IMGASJ0360	None	None	G2	S2	
Rana muscosa southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	SSC
Rana sierrae Sierra Nevada yellow-legged frog	AAABH01340	Endangered	Threatened	G1	S1	SSC
Sarcobatus baileyi Bailey's greasewood	PDCHE0L020	None	None	G4	S1	2B.3
Sceloporus graciosus graciosus northern sagebrush lizard	ARACF14032	None	None	G5T5	S3	
Sidalcea covillei Owens Valley checkerbloom	PDMAL11040	None	Endangered	G2	S2	1B.1
Sidalcea multifida cut-leaf checkerbloom	PDMAL110G0	None	None	G3	S2	2B.3
Siphateles bicolor snyderi Owens tui chub	AFCJB1303J	Endangered	Endangered	G4T1	S1	
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Toxostoma lecontei Le Conte's thrasher	ABPBK06100	None	None	G4	S3	SSC
Trifolium dedeckerae Dedecker's clover	PDFAB400Q0	None	None	G2	S2	1B.3
Triglochin palustris marsh arrow-grass	PMJCG02040	None	None	G5	S3	2B.3
Viola pinetorum var. grisea grey-leaved violet	PDVIO04431	None	None	G4G5T3?	S3?	1B.3
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
Vulpes vulpes necator Sierra Nevada red fox	AMAJA03012	None	Threatened	G5T1T2	S1	
Xerospermophilus mohavensis Mohave ground squirrel	AMAFB05150	None	Threatened	G2G3	S2S3	

Record Count: 78

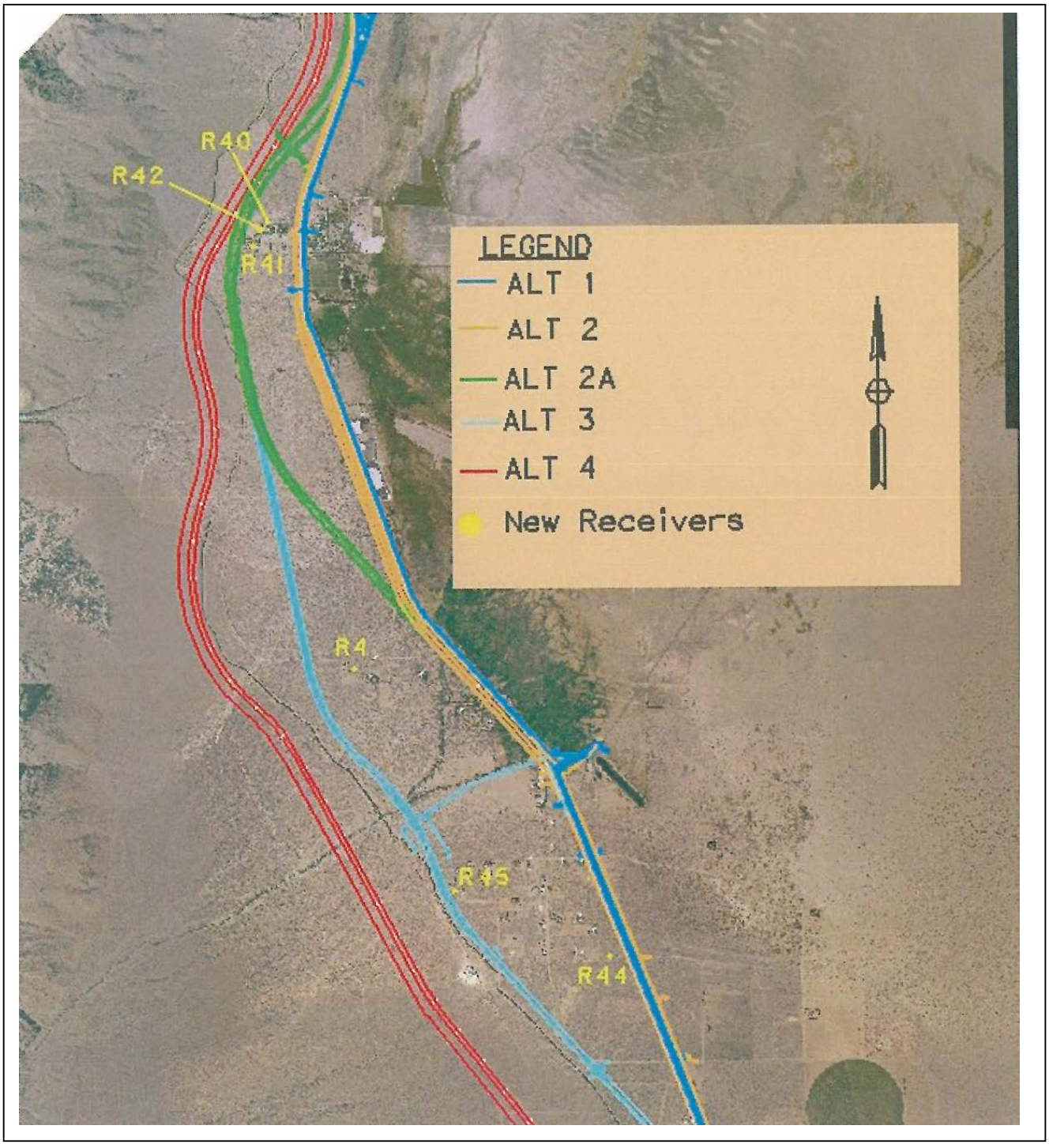
Government Version -- Dated December, 2 2014 -- Biogeographic Data Branch

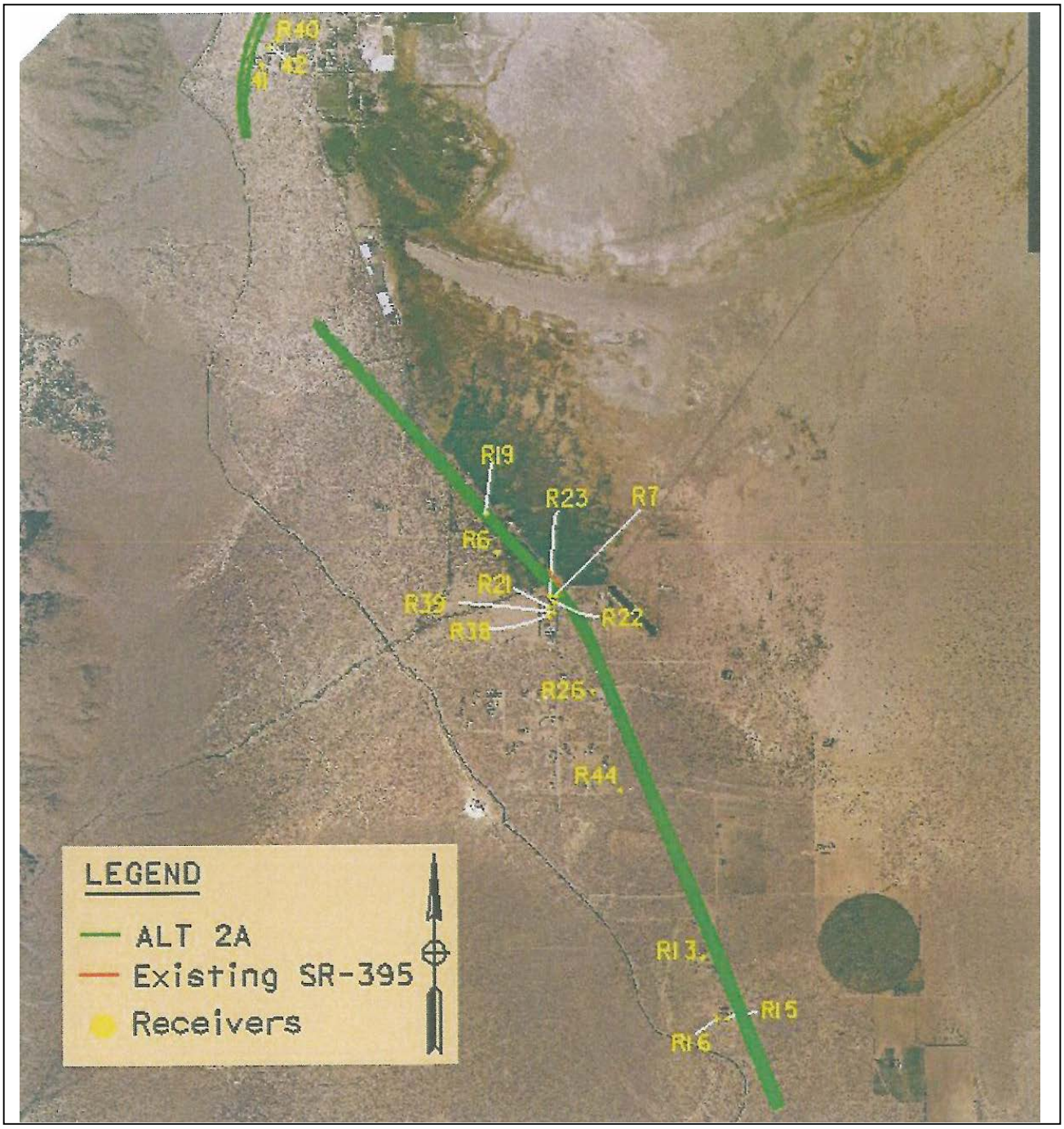
Report Printed on Wednesday, December 31, 2014

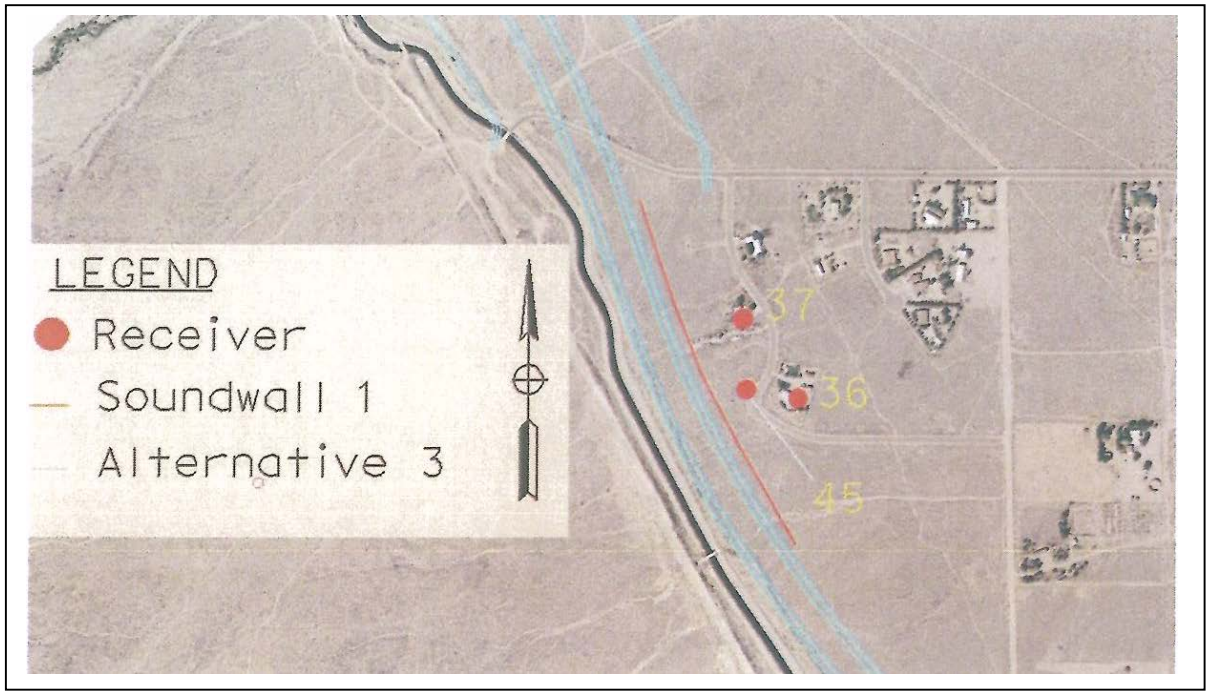
Page 4 of 4

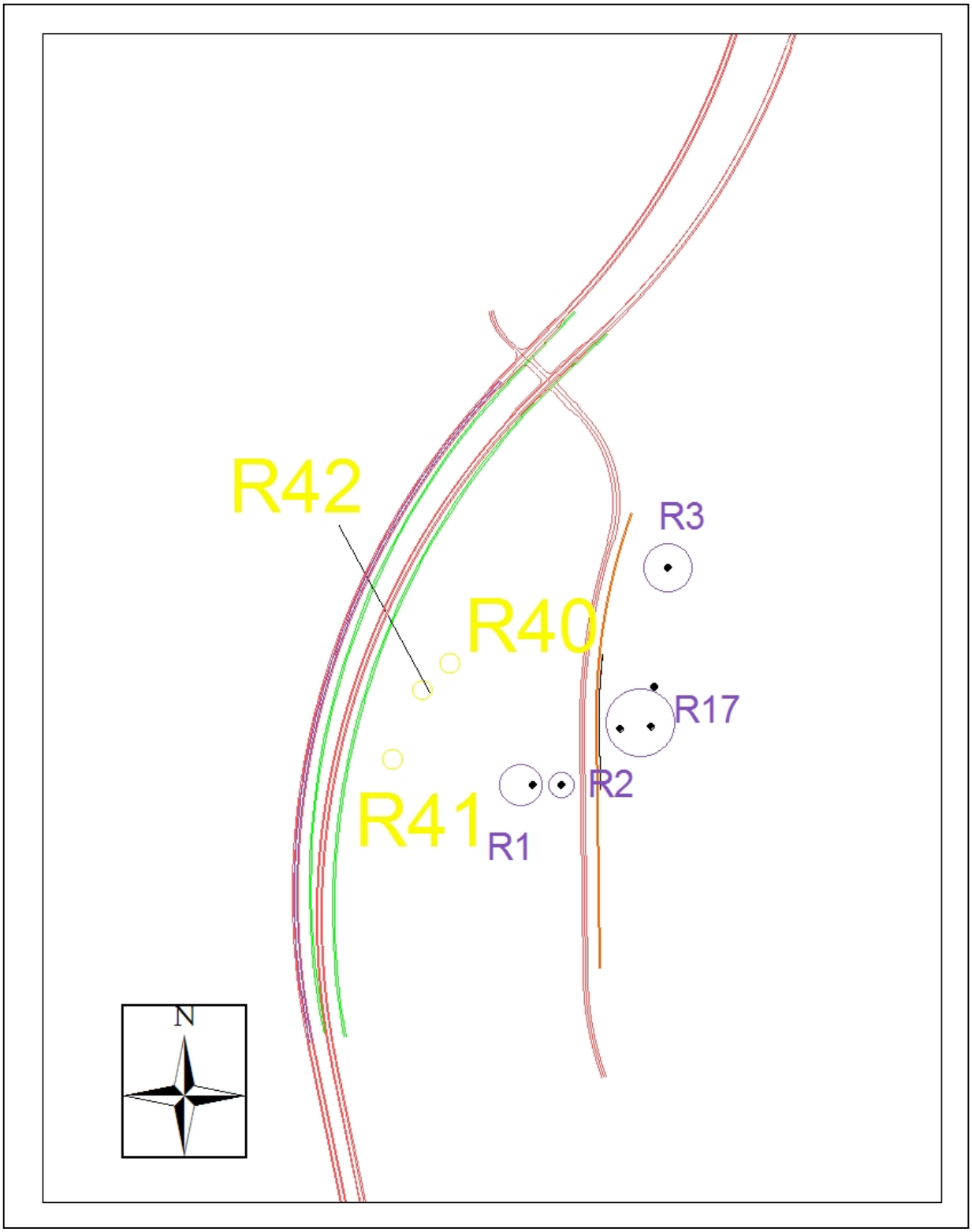
Information Expires 6/2/2015

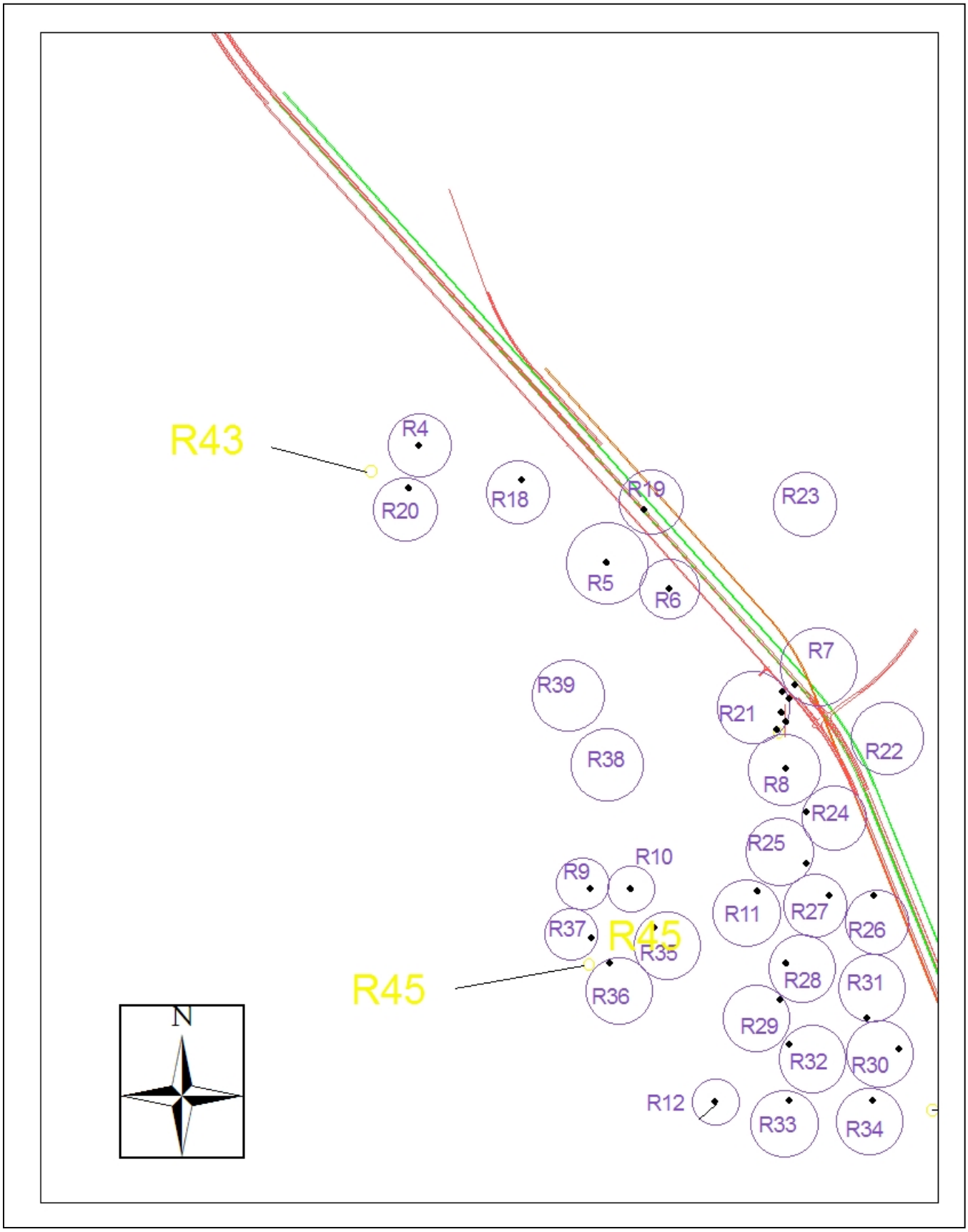
Appendix I Noise Receptor Locations

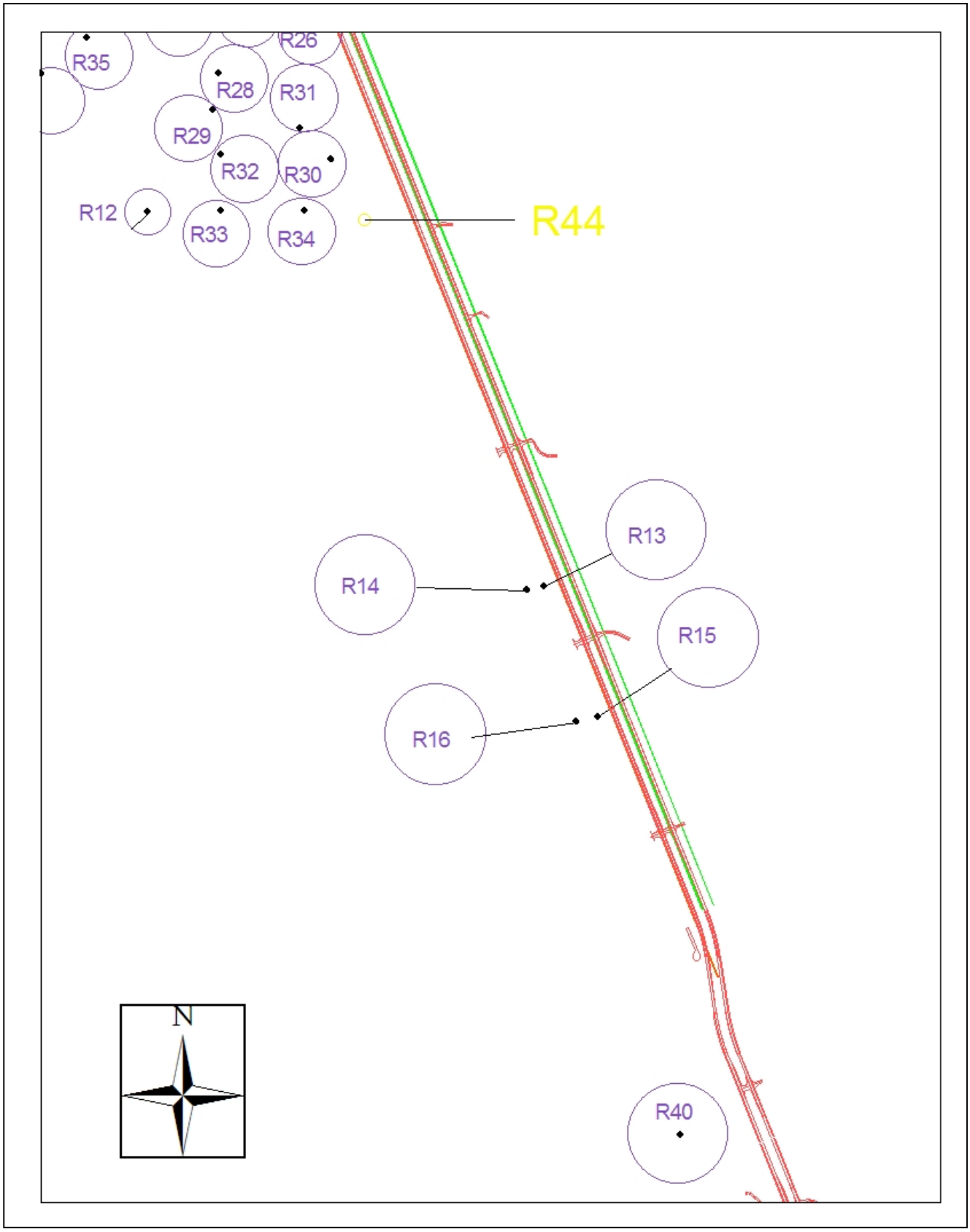



R40
R42
R41
R19
R23
R7
R6
R21
R39
R22
R38
R26
R44
LEGEND
ALT 2A
Existing SR-395
Receivers
R13
R15
R16


LEGEND
Receiver
Soundwall 1
Alternative 3
37
36
45


R42
R3
R40
R17
R2
R41
R1
N


R43
R4
R20
R18
R19
R23
R5
R6
R7
R39
R21
R22
R38
R8
R24
R25
R10
R9
R11
R27
R26
R37
R45
R35
R45
R28
R31
R36
R29
R32
R30
R12
R33
R34
N


R35
R26
R28
R31
R29
R32
R30
R12
R33
R34
R44
R13
R14
R15
R16
N
R40

Appendix J U.S. Fish and Wildlife Biological Opinion

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer To:
FWS-INY-13B0156-14F0013

JUN 13 2014

Ms. Dena Gonzalez, Branch Chief
Central Region Biology North Branch
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: Biological Opinion for the Olancha/Cartago Four-Lane Project (09-INY-395, PM 29.2/41.8 EA 09-21340), Inyo County, California

Dear Ms. Gonzalez:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the California Department of Transportation's (Caltrans) proposal to widen and realign a section of U.S. Highway 395 (Highway 395) between Olancha and Cartago in southwest Inyo County and its effects on the federally threatened desert tortoise (*Gopherus agassizii*). Caltrans proposes to upgrade approximately 12.6 miles of the existing conventional 2-lane highway to a 4-lane expressway. The proposed action is not located within and will not affect critical habitat of the desert tortoise. Consequently, we will not address critical habitat for the desert tortoise in this biological opinion.

We received your November 13, 2013, request for formal consultation on November 20, 2013. The Federal Highway Administration has delegated responsibility for consultation to Caltrans for federally funded actions. This document was prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

This biological opinion is based on information that accompanied your initial request for consultation, the biological assessment (Caltrans 2013), additional information that you provided during the course of consultation, and information in our files. We can make a record of this consultation available upon request.

You have also determined that the proposed project may affect, but is not likely to adversely affect, the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*). Your determination is based on field surveys which yielded negative results for the species in the action area and information obtained from several people with extensive experience and knowledge of the species' distribution in the general area and its ecology. In summary, the information gathered indicates that suitable nesting habitat for the southwestern willow flycatcher does not occur along Olancha Creek, but that the riparian habitat along the creek could

serve as temporary habitat for migrating individuals. Consequently, Caltrans proposes to implement avoidance and mitigation measures including:

- All clearing and grubbing along Olancha Creek will be completed prior to or after the southwestern willow flycatcher migratory season (approximately May through June and mid-August to September);

- A qualified biologist will conduct focused surveys prior to any clearing and grubbing activities;

- Caltrans will implement a worker awareness and education program for all workers that will include information about the southwestern willow flycatcher, its ecology, legal status, and the importance of protecting riparian habitat in the action area;

- Riparian habitat along the new alignment will be fenced to prevent construction equipment and vehicles from entering the riparian habitat. A qualified biologist will determine the extent of the fencing and will be present when the protective fencing is installed; and

- Native riparian trees, such as Fremont cottonwood (*Populus fremontii*) and black willow (*Salix gooddingii*), will be planted along where the new alignment crosses Olancha Creek.

Based on our review of the biological assessment and the avoidance and mitigation measures developed for the species, we concur with your determination that the proposed action may affect, but is not likely to adversely affect, the southwestern willow flycatcher.

Consultation History

Caltrans initially submitted a request for formal consultation on the project in June 2013. At that time, we declined to initiate formal consultation because the biological assessment contained inadequate information to fully assess the effects on the listed species. On July 25, 2013, we provided Caltrans with a letter that identified our concerns and the need for clarification regarding the proposed action.

On October 10, 2013, Caltrans sent us a letter responding to our concerns and clarifying details of the proposed action and its effect on listed species. Subsequently, Service and Caltrans staff participated in a conference call to discuss the new information and how it was incorporated into the revised biological assessment.

On November 19, 2013, Caltrans submitted the revised biological assessment and a request for formal consultation.

Caltrans requested that formal consultation be put on hold on February 6, 2014, so that Caltrans management could re-examine the avoidance, minimization and mitigation measures included in the November 2013 biological assessment.

The Service received a letter on March 4, 2014, from Caltrans (dated February 27, 2014) requesting that we re-start our efforts in preparing a biological opinion for the proposed action. In its letter, Caltrans indicated that it made no changes to the protection and conservation measures submitted in the November 2013 biological assessment.

We provided a draft biological opinion to Caltrans on May 28, 2014. By electronic mail dated May 29, Caltrans (Cromwell 2014) provided comments on the draft biological opinion. We incorporated the comments into this final biological opinion.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED PROJECT

We summarized the following description of the proposed action from the biological assessment (Caltrans 2013). Caltrans proposes to relocate a segment of the existing highway located at post mile 29.2, south of the Los Angeles Aqueduct Bridge, to post mile 41.8, south of the four-lane segment at the Ash Creek Bridge. The proposed project would be approximately 12.6 miles long and would result in a controlled access 4-lane divided expressway throughout the length of the project area.

The proposed expressway would pass to the west of the town of Olancha. The existing Highway 395 would be left in place for use as a local road (Figure 1).

Construction Activities

Construction is scheduled to begin in the spring of 2017 and is anticipated to last approximately 2 years. Construction would be a continuous effort during the 2-year period and no seasonal shutdowns are anticipated. In addition to the new alignment, two vehicle staging areas and a soil borrow site have been included as a part of the proposed project. The staging areas would be located within the right of way at either end of the alignment, whereas the borrow site is located immediately adjacent to the new alignment located approximately 1 mile southwest of the town of Olancha.

*The red line on the map is a flaw in the base layer and is not associated with the proposed project.

Figure 1. Proposed expressway (Caltrans 2013).

Caltrans would build the new expressway on an independent alignment and that would consist of an asphalt concrete surface on an aggregate base, and a sub-grade constructed on earthen excavations and embankments. Two new concrete structures would be required to span the Los Angeles Aqueduct and approximately 80 to 85 reinforced concrete box and corrugated metal pipe culverts would be installed to convey cross-drainage under the new expressway. Of the approximately 85 culverts, 13 would be specifically designed as under-road passages for desert tortoises and other wildlife. Work items associated with the project would include constructing temporary storm water and permanent erosion control measures, installing new right-of-way fencing to exclude desert tortoises, installing new metal beam guard railing, and placing new signs and pavement delineation.

Avoidance and Minimization Measures

The proposed action also includes avoidance and minimization measures that Caltrans would implement during construction to avoid and minimize potential adverse effects to the desert tortoise (Caltrans 2013). The Service and Caltrans revised the measures within the biological assessment for the purposes of clarification and reorganization. They are as follows:

Field Contact Representative

1. Caltrans will assign a staff person to act as the field contact representative (e.g., Resident Engineer or Caltrans Staff Inspector) with specific experience in the implementation of environmental compliance programs. The field contact representative serves as the environmental compliance monitor for the project and will be present throughout construction of the new road alignment. This individual will be the liaison among the, Caltrans, construction workers, authorized biologist(s), and biological monitor(s). The field contact representative and authorized biologist will work closely together to ensure compliance with the various conditions and requirements of project permits and approvals set forth in the biological opinion and supporting plans appended to the biological assessment; however, the (pre-designated) authorized biologist and/or (pre-designated) biological monitor will be the only ones to be in direct contact with wildlife agency staff.

2. The field contact representative will have the authority to stop project activities if a desert tortoise is in danger or protective measures are not adequately implemented.

Authorized Biologist and Biological Monitors

3. Caltrans will employ authorized biologists approved by the Service and biological monitors approved by an authorized biologist to ensure compliance with protective measures for the desert tortoise. Use of authorized biologists and biological monitors will be in accordance with the most up-to-date Service guidance and will be required for monitoring of any construction activities that may injure or kill desert tortoises. The current guidance may be found at: http://fws.gov/ventura/species_information/protocols_guidelines/index.html

4. Caltrans will review the credentials of all individuals seeking approval as authorized biologists. Caltrans will provide the credentials of appropriate individuals to the Service for approval at least 30 days prior to the time they must be in the field.

5. The authorized biologists will be responsible for all aspects of clearance surveys, monitoring, developing and implementing the worker environmental awareness program, contacts with agency personnel, reporting, and long-term monitoring and reporting and be present, along with approved biological monitors during construction, operation, and maintenance that could affect desert tortoises. Biological monitors will be supervised and trained by the authorized biologists. Training by authorized biologist(s) may include ensuring biological monitors are qualified to capture, handle, and move desert tortoise in situations where an authorized biologist is unavailable.

6. Caltrans' field contact representative will act on the advice of the authorized biologist(s) and biological monitor(s) to ensure conformance with the protective measures set forth in this biological opinion. The authorized biologist(s) will have the authority to immediately stop any activity that is not in compliance with these conditions.

Worker Environmental Awareness Program

7. Caltrans will be responsible for ensuring that all workers at the site receive worker environmental awareness training prior to construction and during construction. The field contact representative and authorized biologist will administer the training to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. Caltrans will implement the worker environmental awareness program to ensure the project's construction is conducted within a framework of safeguarding environmentally sensitive resources. The worker environmental awareness program will be available in English and Spanish. Wallet-sized cards summarizing the information will be provided to all construction personnel. The worker environmental awareness training will:

    a. Be developed by or in consultation with the authorized biologist and consist of an onsite or training center presentation in which supporting written material and electronic media, including photographs of protected species, are made available to all participants;

    b. Provide an explanation of the purpose and function of the desert tortoise avoidance and minimization measures and the possible penalties for not adhering to them;

    c. Inform workers that the field contact representative and the authorized biologists have the authority to halt work in any area where there would be an unauthorized adverse impact to biological resources if the activities continued;

d. Discuss general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and protection measures;

e. Provide an explanation of the sensitivity and locations of the vegetation, biological resources, and habitat within and adjacent to work areas, and proper identification of these resources;

f. Place special emphasis on the desert tortoise, including information on physical characteristics, photographs, distribution, behavior, ecology, sensitivity to human activities, legal protection, reporting requirements, and conservation measures required for the project;

g. Provide contact information for the authorized biologist(s) and biological monitor(s) to handle late comments and questions about the material discussed in the program, as well as notification of any dead or injured wildlife species encountered during project-related activities;

h. Direct all worker environmental awareness program trainees to report all observations of listed species and their sign to an authorized biologist for inclusion in the monthly compliance report;

i. Include a training acknowledgment form to be signed by each worker indicating that they received training and will abide by the guidelines; and

j. Provide information regarding the effects of predation on the desert tortoise by common ravens (*Corvus corax*) and other predators, and the measures that have been developed to reduce the likelihood predators will be attracted to the construction area.

Exclusionary Fencing

8. Prior to the start of construction, Caltrans will require the contractor to install permanent fencing to exclude desert tortoises from all work areas and right of way under the direction of an authorized biologist. Caltrans will construct the fence according to the protocols provided in Chapter 8 of the Desert Tortoise Field Manual (Service 2009). If desert tortoises are encountered during installation of the fence, the authorized biologist will move the individual the shortest distance possible to an area outside the fence where it will be safe. The authorized biologist will use his or her judgment regarding the best measures to use to ensure the desert tortoise does not immediately return to the area inside of the fence. The authorized biologist may contact the Service to discuss specific situations if the need arises.

9. After the exclusionary fencing has been installed and before the onset of ground-disturbing activities, the authorized biologist will survey the area and remove all desert tortoises. The authorized biologist will survey the area following established survey protocols to ensure that all desert tortoises have been found; generally, all desert tortoises will be considered to have been removed once a complete survey of the work area is conducted without finding any additional animals. Desert tortoises that are found inside the fenced area will be placed on the other side of the exclusion fence. The authorized biologist will use his or her best judgment to determine the optimal location for placement of desert tortoises, which would include ensuring the animals are not relocated into areas that may isolate them from the desert tortoise population in the area.

10. Caltrans will maintain the integrity of the fence to ensure that desert tortoises are excluded from the work area during construction and from the roadway thereafter. The fence will be inspected regularly; initially, it will be inspected on a monthly basis, but Caltrans may adopt a different schedule, based on acquired experience. Caltrans will inspect and, if necessary, repair the fence immediately after any significant rainstorm that occurs during times of the year or at temperatures when desert tortoises are likely to be active.

Construction Monitoring

11. An appropriate number of authorized biologists and biological monitors will be available during construction for the protection of desert tortoise. Authorized biologists will be assigned to monitor each area of activity where conditions exist that may result in take of desert tortoise (e.g., clearing, grading, re-contouring, and restoration activities).

12. The authorized biologist or a qualified biological monitor will survey ahead of the project activities and halt construction if he or she finds a desert tortoise in the path of construction equipment. Project activities will not resume until the desert tortoise moves out of harm's way or the authorized biologist or qualified biological monitor has relocated it.

13. An authorized biologist or biological monitor will inspect all excavations that are not within desert tortoise exclusion fencing on a regular basis (several times per day) and immediately prior to filling of the excavation. If project personnel discover a desert tortoise in an open trench, an authorized biologist or qualified biological monitor will move it to a safe location in accordance with the Desert Tortoise Field Manual (2009).

14. Caltrans will utilize best management practices and measures to help reduce the possibility of introducing new invasive plants into the project area. These measures will include the inspection and cleaning of construction equipment, commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes, and other strategies to help reduce existing populations of invasive non-native plants, or those that could occur in the future. These measures will become contract stipulations.

Desert Tortoise Relocation

15. Desert tortoises found on the project area will be handled and relocated by an authorized biologist or qualified biological monitor in accordance with the most current Service protocol (currently Service (2009)). Desert tortoises excavated from burrows must be relocated to unoccupied natural or artificially constructed burrows immediately following excavation. The artificial or unoccupied natural burrows must occur 150 to 300 feet from the original burrow. Relocated desert tortoises will not be placed in existing occupied burrows. If an existing burrow that is similar in size, shape, and orientation to the original burrow is unavailable, the authorized biologists or qualified biological monitor would construct one. Desert tortoises moved during inactive periods will be monitored for at least 2 days after placement in the new burrows to ensure their safety.

Designated Areas

16. Prior to the start of construction, work areas (e.g., staging areas, access roads, sites for temporary placement of construction materials and spoils) will be delineated with orange construction fencing or staking and flagging to clearly identify the limits of work and they will be maintained until work is complete. The fencing or markers will be verified after installation and periodically checked by an authorized biologist or biological monitor.

17. Caltrans will confine all project activities to the smallest practical area, considering topography, placement of facilities, location of burrows, public health and safety, and other limiting factors. Caltrans will use previously disturbed habitat as much as possible for storage areas and vehicle turn-around locations. Caltrans will restrict project vehicles to the right of way, designated areas, or existing roads and will prohibit off-road or cross-country travel except in emergencies. Caltrans will not create any new dirt or additional paved roads. The project construction boundaries will be clearly delineated with fencing, stakes, or flagging. If unforeseen circumstances require disturbance beyond the project right of way, Caltrans will notify the Service immediately.

Vehicle Use

18. The field contact representative or authorized biologist will inform workers at morning tailgate briefings if desert tortoises are likely to be active that day or for the foreseeable future. When desert tortoises are expected to be active, workers will inspect the ground around and underneath any vehicle or construction equipment that has been parked longer than 2 minutes within habitat for desert tortoises prior to moving the vehicle. If the worker observes a desert tortoise, he or she will contact an authorized biologist or biological monitor. If possible, the desert tortoise will be left to move out of harm's way on its own. If the desert tortoise does not move out of harm's way of its own volition, an authorized biologist or qualified biological monitor will move it out of harm's way in accordance with the handling procedures.

Prohibited Activities

19. Caltrans will ensure that workers do not bring firearms and pets into the project area. This measure does not apply to law enforcement personnel and working dogs.

Trash and Food

20. To prevent the attractiveness of the construction area to common ravens and coyotes (*Canis latrans*), trash will be placed in sealed containers and emptied at the close of business each day. The project area will be kept as clean of debris as possible.

Caltrans has also committed to implementing the following permanent on-site measures to contribute to the long-term conservation of the desert tortoise:

1. Installation of permanent exclusionary desert tortoise fencing along the new alignment;

2. Installation of approximately 13 or more under-road passages, to be appropriately sized and installed in locations where new culverts have been specified and where passage for desert tortoises is most likely to occur. Caltrans will ensure that all the entrances and exits of under-road passage are designed to prevent entrapment of desert tortoises and are regularly cleared of debris after the project is completed, and;

3. Construction of cattle guards, at public access roads, to prevent desert tortoises from accessing the new alignment. The cattle guards will be modified to include cement escape ramps, so desert tortoises do not become entrapped.

4. In areas where the exclusionary fencing crosses private roads, Caltrans will install a gate with desert tortoise fencing to prevent the animals from accessing the highway.

At this time, Caltrans is still developing the specific details and locations within the right-of-way for the proposed permanent desert tortoise fencing, under-road passages, and modified cattle guards. Therefore, the mapped locations for the under-road passages in the biological assessment are preliminary and could change prior to being finalized; however, once the locations and design specifications have been confirmed, they will be provided to the Service for review.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATION

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 Code of Federal Regulations 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the desert tortoise, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the desert tortoise in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the desert tortoise; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the desert tortoise; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the desert tortoise.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the current status of the desert tortoise, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the desert tortoise in the wild.

STATUS OF THE SPECIES

Section 4(c)(2) of the Endangered Species Act requires the Service to conduct a status review of each listed species at least once every 5 years. The purpose of a 5-year review is to evaluate whether or not the species' status has changed since it was listed (or since the most recent 5-year review); these reviews, at the time of their completion, provide the most up-to-date information on the range-wide status of the species. For this reason, we are appending the 5-year review of the status of the desert tortoise (Appendix 1; Service 2010e) to this biological opinion and are incorporating it by reference to provide most of the information needed for this section of the biological opinion. The following paragraphs provide a summary of the relevant information in the 5-year review.

In the 5-year review, the Service discusses the status of the desert tortoise as a single distinct population segment and provides information on the Federal Register notices that resulted in its listing and the designation of critical habitat. The Service also describes the desert tortoise's ecology, life history, spatial distribution, abundance, habitats, and the threats that led to its listing (i.e., the 5-factor analysis required by section 4(a)(1) of the Endangered Species Act). In the 5-year review, the Service concluded by recommending that the status of the desert tortoise as a threatened species be maintained.

With regard to the status of the desert tortoise as a distinct population segment, the Service concluded in the 5-year review that the recovery units recognized in the original and revised recovery plans (Service 1994 and 2011, respectively) do not qualify as distinct population segments under the Service's distinct population segment policy (61 Federal Register 4722; February 7, 1996). We reached this conclusion because individuals of the listed taxon occupy habitat that is relatively continuously distributed, exhibit genetic differentiation that is consistent with isolation-by-distance in a continuous-distribution model of gene flow, and likely vary in behavioral and physiological characteristics across the area they occupy as a result of the

transitional nature of, or environmental gradations between, the described subdivisions of the Mojave and Colorado deserts.

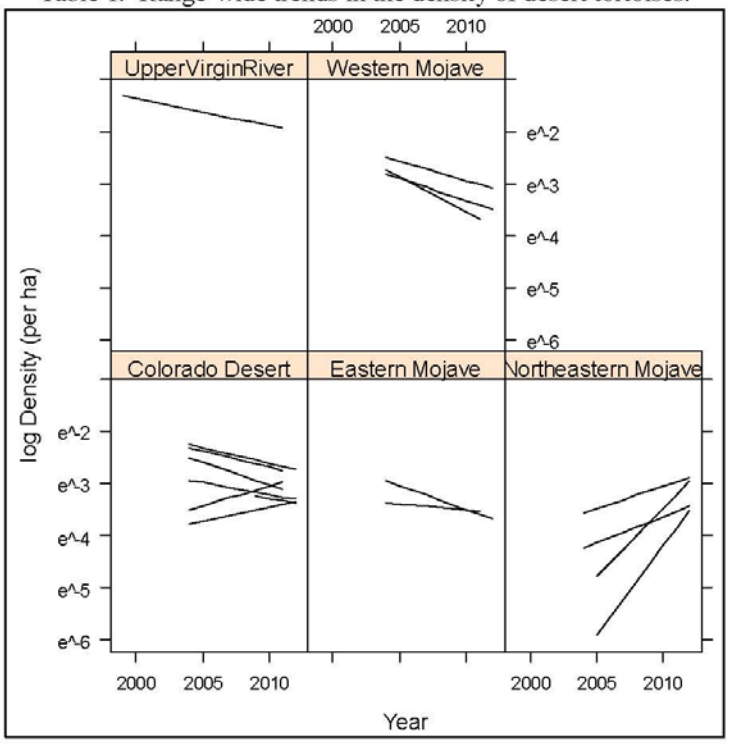
In the 5-year review, the Service summarizes information with regard to the desert tortoise's ecology and life history. Of key importance to assessing threats to the species and to developing and implementing a strategy for recovery is that desert tortoises are long lived, require up to 20 years to reach sexual maturity, and have low reproductive rates during a long period of reproductive potential. The number of eggs that a female desert tortoise can produce in a season is dependent on a variety of factors including environment, habitat, availability of forage and drinking water, and physiological condition. Predation seems to play an important role in clutch failure. Predation and environmental factors also affect the survival of hatchlings.

In the 5-year review, the Service also discusses various means by which researchers have attempted to determine the abundance of desert tortoises and the strengths and weaknesses of those methods. Due to differences in area covered and especially to the non-representative nature of earlier sample sites, data gathered by the Service's current range-wide monitoring program cannot be reliably compared to information gathered through other means at this time.

The Service provides a summary table of the results of range-wide monitoring, initiated in 2001, in the 5-year review. This ongoing sampling effort is the first comprehensive attempt to determine the densities of desert tortoises across their range. Table 1 of the 5-year review provides a summary of data collected from 2001 through 2007; we summarize data from the 2008 through 2012 sampling efforts in subsequent reports (Service 2012a, 2012b, 2012c, 2012d).

The Desert Tortoise Recovery Office (Service 2014) used these annual density estimates to evaluate range-wide trends in the density of desert tortoises over time. This analysis indicates that densities in the Northeastern Mojave Recovery Unit have increased by approximately 13.6 percent per year since 2004, with the rate of increase apparently resulting from increased survival of adults and subadults moving into the adult size class. The analysis also indicates that the populations in the other 4 recovery units are declining: Upper Virgin River (-5.1 percent), Eastern Mojave (-6.0 percent), Western Mojave (-8.6 percent), and Colorado Desert (-3.4 percent; however, densities the Joshua Tree and Piute Valley conservation areas within this unit seem to be increasing). The following figure shows linear trends in the log-transformed densities in each desert tortoise conservation area by recovery unit. Data for the Upper Virgin River Recovery Unit are from 1999 to the present; data for all other recovery units are from 2004 to the present.

Table 1. Range-wide trends in the density of desert tortoises.



Allison (2014) also evaluated changes in size distribution of desert tortoises since 2001. In the Western Mojave and Colorado Desert recovery units, the relative number of juveniles to adults indicates that juvenile numbers are declining faster than adults. In the Eastern Mojave, the number of juvenile desert tortoises is also declining, but not as rapidly as the number of adults. In the Upper Virgin River Recovery Unit, trends in juvenile numbers are similar to those of adults; in the Northeastern Mojave Recovery Unit, the number of juveniles is increasing, but not as rapidly as are adult numbers in that recovery unit. Juvenile numbers, like adult densities, are responding in a directional way, with increasing, stable, or decreasing trends, depending on the recovery unit where they area found.

In the 5-year review, the Service provides a brief summary of habitat use by desert tortoises; more detailed information is available in the revised recovery plan (Service 2011). In the absence of specific and recent information on the location of habitable areas of the Mojave Desert, especially at the outer edges of this area, the 5-year review also describes and relies heavily on a quantitative, spatial habitat model for the desert tortoise north and west of the Colorado River that incorporates environmental variables such as precipitation, geology, vegetation, and slope and is based on occurrence data of desert tortoises from sources spanning more than 80 years, including data from the 2001 to 2005 range-wide monitoring surveys

(Nussear et al. 2009). The model predicts the probability that desert tortoises will be present in any given location; calculations of the amount of desert tortoise habitat in the 5-year review and in this biological opinion use a threshold of 0.5 or greater predicted value for potential desert tortoise habitat. The model does not account for anthropogenic effects to habitat and represents the potential for occupancy by desert tortoises absent these effects.

To begin integrating anthropogenic activities and the variable risk levels they bring to different parts of the Mojave and Colorado deserts, the Service completed an extensive review of the threats known to affect desert tortoises at the time of their listing and updated that information with more current findings in the 5-year review. The review follows the format of the five-factor analysis required by section 4(a)(1) of the Endangered Species Act. The Service described these threats as part of the process of its listing (55 Federal Register 12178; April 2, 1990), further discussed them in the original recovery plan (Service 1994), and reviewed them again in the revised recovery plan (Service 2011).

To understand better the relationship of threats to populations of desert tortoises and the most effective manner to implement recovery actions, the Desert Tortoise Recovery Office is developing a spatial decision support system that models the interrelationships of threats to desert tortoises and how those threats affect population change. The spatial decision support system describes the numerous threats that desert tortoises face, explains how these threats interact to affect individual animals and habitat, and how these effects in turn bring about changes in populations. For example, we have long known that the construction of a transmission line can result in the death of desert tortoises and loss of habitat. We have also known that common ravens, known predators of desert tortoises, use the transmission line's pylons for nesting, roosting, and perching and that the access routes associated with transmission lines provide a vector for the introduction and spread of invasive weeds and facilitate increased human access into an area. Increased human access can accelerate illegal collection and release of desert tortoises and their deliberate maiming and killing, as well as facilitate the spread of other threats associated with human presence, such as vehicle use, garbage and dumping, and invasive plants (Service 2011). Changes in the abundance of native plants because of invasive weeds can compromise the physiological health of desert tortoises, making them more vulnerable to drought, disease, and predation. The spatial decision support system allows us to map threats across the range of the desert tortoise and model the intensity of stresses that these multiple and combined threats place on desert tortoise populations.

The threats described in the listing rule and both recovery plans continue to affect the species. Indirect impacts to desert tortoise populations and habitat occur in accessible areas that interface with human activity. Most threats to the desert tortoise or its habitat are associated with human land uses; research since 1994 has clarified many mechanisms by which these threats act on desert tortoises. As stated earlier, increases in human access can accelerate illegal collection and release of desert tortoises and deliberate maiming and killing, as well as facilitate the spread of other threats associated with human presence, such as vehicle use, garbage and dumping, and invasive weeds.

Some of the most apparent threats to the desert tortoise are those that result in mortality and permanent habitat loss across large areas, such as urbanization and large-scale renewable energy projects, and those that fragment and degrade habitats, such as proliferation of roads and highways, off-highway vehicle activity, and habitat invasion by non-native invasive plant species. However, we remain unable to quantify how threats affect desert tortoise populations. The assessment of the original recovery plan emphasized the need for a better understanding of the implications of multiple, simultaneous threats facing desert tortoise populations and of the relative contribution of multiple threats on demographic factors (i.e., birth rate, survivorship, fecundity, and death rate; Tracy et al. 2004).

The following map depicts the 12 critical habitat units of the desert tortoise, linkages between conservation areas for the desert tortoise, and the aggregate stress that multiple, synergistic threats place on desert tortoise populations (Figure 2). Conservation areas include designated critical habitat, lands managed by the National Park Service, and other lands managed for the long-term conservation of the desert tortoise (e.g., the Desert Tortoise Natural Area in Kern County, California). The revised recovery plan (Service 2011) recommended the linkages based on an analysis of least-cost pathways (i.e., areas with the highest potential to support desert tortoises) between conservation areas for the desert tortoise. This map illustrates that, across the range, desert tortoises in areas under the highest level of conservation management remain subject to numerous threats, stresses, and mortality sources.

Since the completion of the 5-year review, the Service has issued several biological opinions that affect large areas of desert tortoise habitat because of numerous proposals to develop renewable energy within its range. These biological opinions concluded that proposed solar plants were not likely to jeopardize the continued existence of the desert tortoise primarily because they were located outside of critical habitat and desert wildlife management areas that contain most of the land base required for the recovery of the species. The proposed actions also included numerous measures intended to protect desert tortoise during the construction of the projects, such as translocation of affected individuals. In aggregate, these projects would result in an overall loss of approximately 37,503 acres of habitat of the desert tortoise. We also predicted that these projects would translocate or kill up to 1,732 desert tortoises; we concluded that most of the individuals in these totals would be juveniles. To date, 372 desert tortoises have been observed during construction of projects; most of these individuals were translocated from work areas, although some desert tortoises have been killed (see Appendix 2). The mitigation required by the Bureau of Land Management and California Energy Commission, the agencies permitting these facilities, will result in the acquisition of private land and funding for the implementation of various actions that are intended to promote the recovery of the desert tortoise. Although most of these mitigation measures are consistent with recommendations in the recovery plans for the desert tortoise and the Service continues to support their implementation, we cannot assess how desert tortoise populations will respond because of the long generation time of the species.

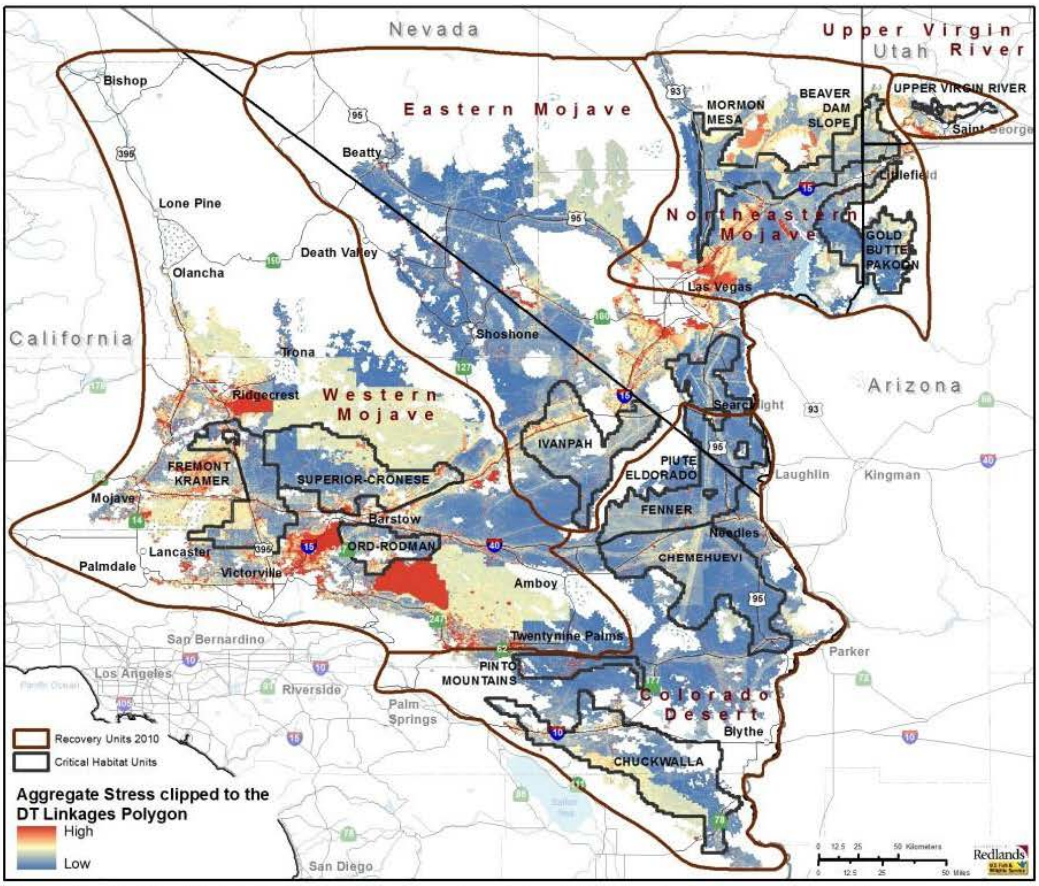


Figure 2. Critical habitat units of the desert tortoise, linkages between conservation areas for the desert tortoise, and the aggregate stress that multiple, synergistic threats place on desert tortoise populations.

In addition to the biological opinions issued for solar development within the range of the desert tortoise, the Service (2012e) also issued a biological opinion to the Department of the Army for the use of additional training lands at Fort Irwin. As part of this proposed action, the Department of the Army removed approximately 650 desert tortoises from 18,197 acres of the southern area of Fort Irwin, which had been off-limits to training. The Department of the Army would also use an additional 48,629 acres that lie east of the former boundaries of Fort Irwin; much of this parcel is either too mountainous or too rocky and low in elevation to support numerous desert tortoises.

The Service also issued a biological opinion to the Marine Corps that considered the effects of the expansion of the Marine Corps Air Ground Combat Center at Twentynine Palms

(Service 2012f). We concluded that the Marine Corps' proposed action, the use of approximately 167,971 acres for training, was not likely to jeopardize the continued existence of the desert tortoise. Most of the expansion area lies within the Johnson Valley Off-high Vehicle Management Area.

The incremental effect of the larger actions (i.e., solar development, the expansions of Fort Irwin, and the Marine Corps Air Ground Combat Center) on the desert tortoise is unlikely to be positive, despite the numerous conservation measures that have been (or will be) implemented as part of the actions. The acquisition of private lands as mitigation for most of these actions increases the level of protection afforded these lands; however, these acquisitions do not create new habitat and Federal, State, and privately managed lands remain subject to most of the threats and stresses we discussed previously in this section. Although land managers have been implementing measures to manage these threats, we have been unable, to date, to determine whether the measures have been successful, at least in part because of the low reproductive capacity of the desert tortoise. Therefore, the conversion of habitat into areas that are unsuitable for this species continues the trend of constricting the desert tortoise into a smaller portion of its range.

As the Service notes in the 5-year review (Service 2010e), "(t)he threats identified in the original listing rule continue to affect the (desert tortoise) today, with invasive species, wildfire, and renewable energy development coming to the forefront as important factors in habitat loss and conversion. The vast majority of threats to the desert tortoise or its habitat are associated with human land uses." Oftedal's work (2002 in Service 2010e) suggests that invasive weeds may adversely affect the physiological health of desert tortoises. Current information indicates that invasive species likely affect a large portion of the desert tortoise's range (Figure 3). Furthermore, high densities of weedy species increase the likelihood of wildfires; wildfires, in turn, destroy native species and further the spread of invasive weeds.

Global climate change is likely to affect the prospects for the long-term conservation of the desert tortoise. For example, predictions for climate change within the range of the desert tortoise suggest more frequent and/or prolonged droughts with an increase of the annual mean temperature by 3.5 to 4.0 degrees Celsius. The greatest increases will likely occur in summer (June-July-August mean increase of as much as 5 degrees Celsius [Christensen et al. 2007 in Service 2010e]). Precipitation will likely decrease by 5 to 15 percent annually in the region with winter precipitation decreasing by up to 20 percent and summer precipitation increasing by up to 5 percent. Because germination of the desert tortoise's food plants is highly dependent on cool-season rains, the forage base could be reduced due to increasing temperatures and decreasing precipitation in winter. Although drought occurs routinely in the Mojave Desert, extended periods of drought have the potential to affect desert tortoises and their habitats through physiological effects to individuals (i.e., stress) and limited forage availability. To place the consequences of long-term drought in perspective, Longshore et al. (2003) demonstrated that even short-term drought could result in elevated levels of mortality of desert tortoises.

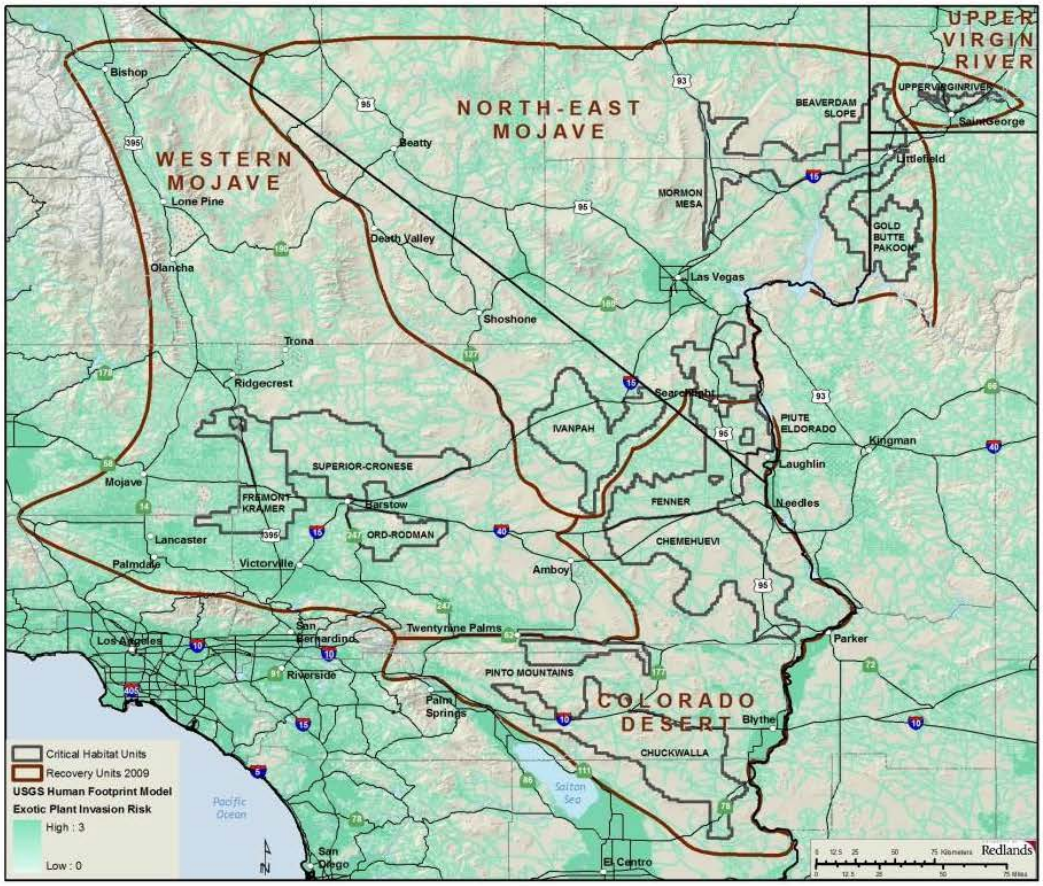


Figure 3. Invasion risk of non-native invasive plant species within the range of the desert tortoise.

Therefore, long-term drought is likely to have even greater effects, particularly given that the current fragmented nature of desert tortoise habitat (e.g., urban and agricultural development, highways, freeways, military training areas, etc.) will make recolonization of extirpated areas difficult, if not impossible.

The Service notes in the 5-year review that the combination of the desert tortoise's late breeding age and a low reproductive rate challenges our ability to achieve recovery. When determining whether a proposed action is likely to jeopardize the continued existence of a species, we are required to consider whether the action would "reasonably be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 Code of Federal Regulations 402.02). Although the Service does not explicitly address these metrics in the

5-year review, we have used the information in that document to summarize the status of the desert tortoise with respect to its reproduction, numbers, and distribution.

In the 5-year review, the Service notes that desert tortoises increase their reproduction in high rainfall years; more rain provides desert tortoises with more high quality food (i.e., plants that are higher in water and protein), which, in turn, allows them to lay more eggs. Conversely, the physiological stress associated with foraging on food plants with insufficient water and nitrogen may leave desert tortoises vulnerable to disease (Oftedal 2002 in Service 2010e), and the reproductive rate of diseased desert tortoises is likely lower than that of healthy animals. Young desert tortoises also rely upon high-quality, low-fiber plants (e.g., native forbs) with nutrient levels not found in the invasive weeds that have increased in abundance across its range (Oftedal et al. 2002; Tracy et al. 2004). Compromised nutrition of young desert tortoises likely represents an effective reduction in reproduction by reducing the number that reaches adulthood. Consequently, although we do not have quantitative data that show a direct relationship, the abundance of weedy species within the range of the desert tortoise has the potential to negatively affect the reproduction of desert tortoises and recruitment into the adult population.

Data from long-term study plots, which were first established in 1976, cannot be extrapolated to provide an estimate of the number of desert tortoises on a range-wide basis; historical densities in some parts of the desert exceeded 100 adults in a square mile (Desert Tortoise Recovery Office 2014). Using data from the long-term study plots, the Service (2010) concluded that "appreciable declines at the local level in many areas, which coupled with other survey results, suggest that declines may have occurred more broadly." Other sources indicate that local declines are continuing to occur. For example, surveyors found "lots of dead [desert tortoises]" in the western expansion area of Fort Irwin (Western Mojave Recovery Unit) in 2008 (Fort Irwin Research Coordination Meeting 2008). After the onset of translocation, coyotes killed 105 desert tortoises in Fort Irwin's southern translocation area (Western Mojave Recovery Unit); other canids may have been responsible for some of these deaths. Other incidences of predation were recorded throughout the range of the desert tortoise during this time (Esque et al. 2010). Esque et al. (2010) hypothesized that this high rate of predation on desert tortoises was influenced by low population levels of typical prey for coyotes due to drought conditions in previous years. Recent surveys in the Ivanpah Valley (Eastern Mojave Recovery Unit) for a proposed solar facility detected 31 live desert tortoises and the carcasses of 25 individuals that had been dead less than 4 years (Ironwood 2011); this ratio of carcasses to live individuals over such a short period of time may indicate an abnormally high rate of mortality for a long-lived animal. In summary, the number of desert tortoises range-wide likely decreased substantially from 1976 through 1990 (i.e., when long-term study plots were initiated through the time the desert tortoise was listed as threatened), although we cannot quantify the amount of this decrease. Additionally, more recent data collected from various sources throughout the range of the desert tortoise suggest that local declines continue to occur (e.g., Bureau of Land Management et al. 2005, Esque et al. 2010).

The distribution of the desert tortoise has not changed substantially since the publication of the original recovery plan in 1994 (Service 2010e) in terms of the overall extent of its range. Prior

to 1994, desert tortoises were extirpated from large areas within their distributional limits by urban and agricultural development (e.g., the cities of Barstow and Lancaster, California; Las Vegas, Nevada; and St. George, Utah; etc.; agricultural areas south of Edwards Air Force Base and east of Barstow), military training (e.g., Fort Irwin, Leach Lake Gunnery Range), and off-road vehicle use (e.g., portions of off-road management areas managed by the Bureau of Land Management and unauthorized use in areas such as east of California City, California). Since 1994, urban development around Las Vegas has likely been the largest contributor to habitat loss throughout the range. Desert tortoises have been essentially removed from the 18,197-acre southern expansion area at Fort Irwin (Service 2012e).

Table 2. Acreages of habitat (as modeled by Nussear et al. 2009, using only areas with a probability of occupancy by desert tortoises greater than 0.5 as potential habitat) within various regions of the desert tortoise's range and of impervious surfaces as of 2006 (Fry et al. 2011). Impervious surfaces include paved and developed areas and other disturbed areas that have zero probability of supporting desert tortoises.

Recovery Units	Modeled Habitat (acres)	Impervious Surfaces within Modeled Habitat	Percent of Modeled Habitat that is now Impervious
Western Mojave	7,582,092	1,864,214	25
Colorado Desert	4,948,900	494,981	10
Northeastern Mojave	3,013,677	378,497	13
Eastern Mojave	4,763,257	794,546	17
Upper Virgin River	232,320	80,853	35
Total	20,540,246	3,613,052	18

Table 3. Using the acreages of remaining habitat and the densities of the recovery units, the Desert Tortoise Recovery Office (2014) then estimated the number of desert tortoises greater than 1,800 millimeters in length in each recovery unit. We acknowledge that these numbers are not precise but consider it a reasonable way to describe overall changes in the population. For example, we base the density estimate of each recovery unit on surveys conducted with desert tortoise conservation areas and then extend this density to the entire recovery unit although we presume densities are highest within the conservation areas.

Recovery Units	2004	2012	Change
Western Mojave	152,967	76,644	-76,323
Colorado Desert	111,749	85,306	-26,443
Northeastern Mojave	13,709	40,838	+27,129
Eastern Mojave	68,138	42,055	-26,083
Upper Virgin River	12,678	8,399	-4,280
Total	359,242	253,242	-106,000

In conclusion, we have used the 5-year review (Service 2010e), revised recovery plan (Service 2011), and additional information that has become available since these publications to review the reproduction, numbers, and distribution of the desert tortoise. The reproductive capacity of the desert tortoise may be compromised to some degree by the abundance and distribution of invasive weeds across its range; the continued increase in human access across the desert likely continues to facilitate the spread of weeds and further affect the reproductive capacity of the species. Prior to its listing, the number of desert tortoises likely declined range-wide, although we cannot quantify the extent of the decline; since the time of listing, data suggest that declines continue to occur throughout most of the range, although recent information suggests that densities may have increased slightly in the Northeastern Mojave Recovery Unit. The continued increase in human access across the desert continues to expose more desert tortoises to the potential of being killed by human activities. The distributional limits of the desert tortoise's range have not changed substantially since the issuance of the original recovery plan in 1994; however, desert tortoises have been extirpated from large areas within their range (e.g., Las Vegas, other desert cities). The species' low reproductive rate, the extended time required for young animals to reach breeding age, and the multitude of threats that continue to confront desert tortoises combine to render its recovery a substantial challenge.

ENVIRONMENTAL BASELINE

Action Area

The implementing regulations for section 7(a)(2) of the Endangered Species Act define the action area as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 Code of Federal Regulations 402.02). The action area begins at post mile 29.2 in the south and ends at post mile 41.8 in the north. The action area includes the area of the new alignment, a 49-acre borrow site located southwest of Olancha, temporary staging areas, and a 300-foot-wide area around these areas. We included the 300-foot-wide area beyond the construction area and borrow site because desert tortoises from the right-of-way may be moved into this area.

In this biological opinion, we use the term "project area" to indicate areas that Caltrans may disturb during construction (e.g., the roadways, borrow pit, and staging areas); the action area covers approximately 672.23 acres. Therefore, the action area comprises the project area and the additional areas into which Caltrans may translocate desert tortoises.

Previous Consultations in the Action Area

We issued a biological opinion to the Bureau of Land Management regarding the effects of a proposed amendment to the California Desert Conservation Area Plan for the western Mojave Desert on the desert tortoise and its critical habitat (Service 2006). The Bureau of Land Management's proposed action was a substantial revision of the California Desert Conservation Area Plan, with the fundamental goal of adopting numerous management prescriptions that were intended to promote the recovery of the desert tortoise. These prescriptions addressed grazing,

land use classification, recreation, and numerous other elements of the of Land Management's management of the western Mojave Desert. The Service concluded that the of Land Management's amendment of the California Desert Conservation Area Plan for the western Mojave Desert was not likely to jeopardize the continued existence of the desert tortoise or adversely modify its critical habitat because the vast majority of changes addressed in the amendment reduced the intensity of use and were protective of the desert tortoise. We established thresholds for the re-initiation of formal consultation in an amendment to this biological opinion (Service 2007). To date, although some desert tortoises have been killed, none of the re-initiation thresholds have been met. The entire action area for this project is within the action area for the California Desert Conservation Area Plan consultation.

We also issued a biological opinion to the National Telecommunications and Information Administration for the installation of a fiber optic cable along the edge of Highway 395 (Service 2012g). The Service concluded that this action was not likely to jeopardize the continued existence of the development. To the best of our knowledge, no desert tortoises were killed on injured within the action area for the Olancha/Cartago Four-Lane project during the course of installing the fiber optic cable.

Characteristics of the Action Area

We summarized the following description of the action area from the biological assessment (Caltrans 2013). The topography in the project area is gently to moderately undulating with elevations ranging from approximately 3,600 to 3,980 feet above sea level.

Habitat types within the action area include alkali meadow, desert saltbrush, big sagebrush, creosote bush, cottonwood riparian, rubber rabbitbrush, and shadescale scrub. Portions of the action area and surrounding areas are disturbed by historical and ongoing activities associated with the installation and maintenance of the Los Angeles Aqueduct, fiber optic lines, power transmission lines, and the Southern Pacific Railroad. Much of the area is also used for grazing cattle. Overall, Caltrans described the habitat within the proposed project site as low quality because of the presence of non-native plant species and the existing human disturbance.

Highway 395 and the Los Angeles Aqueduct, which is an open canal in this region of California, likely restricts the movement of desert tortoises in this area. Desert tortoises may be able to cross Highway 395 occasionally, when traffic is light. The Los Angeles Aqueduct is impassable to desert tortoises, except at those locations where bridges cross it.

Status of the Desert Tortoise in the Action Area

Biological surveys for this project were conducted in 2001 on June 20, 21, and 22 and again in 2012 between October 22 and November 2. Both surveys followed established desert tortoise Service protocols and consisted of walking 100 percent of the project area where permission was granted by private land owners. The 2012 surveys also included 3 belt transects surrounding the project area at 200-, 400-, and 600-meter intervals.

No live desert tortoises were encountered during the surveys; however, burrows and scat were observed within the action area. Local residents observed a desert tortoise that they believed to be an escaped pet west and south of Olancha on the western side of the Los Angeles Aqueduct and railroad on February 28 and 29, 2001. Several other surveys unrelated to this project, but in the vicinity of the proposed action by the Bureau of Land Management (late 1970s, 1998, and 1999) and the Los Angeles Department of Water and Power (in 1984), also yielded negative results for desert tortoises. However, in 2008, a Caltrans archeological survey crew observed three live desert tortoises and various sign of the species along a portion of the proposed alignment. Additionally, fire staff from the Bureau of Land Management's Ridgecrest Field Office observed four desert tortoises in the general area between 2009 and 2013. We do not know how many of these observations from 2008 through 2013 were of the same animals.

The information in the biological assessment is not adequate to estimate the likely number of desert tortoises in the action area. The area to be used for highway construction is linear in configuration and narrow, and desert tortoises could move into and out of those areas in a relatively brief time. Consequently, we used the density estimate that the Service derived for the Fremont-Kramer Critical Habitat Unit (the unit closest to the action area) during range-wide sampling in 2012 to estimate the number of desert tortoises greater than 180 millimeters in length that may be in the action area. The density of desert tortoises greater than 180 millimeters in length in the Fremont-Kramer Critical Habitat Unit was approximately 5.72 animals per square mile (Service 2012d). Using this information, we estimate the number of desert tortoises greater than 180 in length to be present in the 672.23-acre project area to be approximately 6 (see Appendix 3). However, we expect that fewer desert tortoises are likely present because the action area is located at the northern fringe of the species' range and the area has experienced, and continues to experience, various types of disturbances due to its proximity to scattered residential, industrial, and commercial development, and the presence of Highway 395 and numerous unpaved roads.

We have also not attempted to estimate the number of smaller desert tortoises in the action area (i.e., those less than 180 millimeters in length) because of the numerous variables involved. We expect that the action area likely supports few, if any, small desert tortoises and eggs because of the scarcity of larger animals.

EFFECTS OF THE ACTION

Capture and Relocation of Desert Tortoises

Caltrans proposes to remove all desert tortoises from the project area. Caltrans will install desert tortoise exclusion fencing around all areas of ground disturbance associated with the project. An authorized biologist will perform clearance surveys (in accordance with the most recent Service survey protocols) of the enclosed area and translocate any desert tortoises found within the enclosure to areas immediately adjacent to and outside of the fence. We cannot predict how many desert tortoises surveyors will translocate within the project area. However, because no live desert tortoises and few tortoise sign were observed in the action area (and none in the

project area) and much of the project area already experiences various levels of disturbance due to human activities (i.e., paved and dirt roads, development, aqueduct, railroad, and livestock grazing), we anticipate few, if any, desert tortoises will be translocated.

Some potential exists that capturing desert tortoises may cause elevated levels of stress that may render these animals more susceptible to disease or directly result in injury or mortality. Handling desert tortoises sometimes causes them to void the contents of their bladder, which may represent loss of important fluids that could be fatal (Averill-Murray 1999 in Boarman 2002). Averill-Murray 1999 (in Boarman 2002) provided some evidence that handling-induced voiding may adversely affect survivability, although the amount of fluid discharged is usually small. However, because Caltrans will use only experienced biologists (i.e., authorized biologists) approved by the Service and approved handling techniques, collected desert tortoises are unlikely to suffer substantially elevated stress levels, or be killed or injured.

Biologists considered translocation to be an ineffective tool in reducing the impacts of projects on desert tortoises and raised concerns regarding its numerous potential adverse effects (e.g., overcrowding, increased disease transmission, increased mortality, elevation of stress hormones, vulnerability to drought, etc.). Over the past approximately 10 years, several researchers have undertaken studies to more carefully evaluate the effects of translocation on desert tortoises; some of these studies have included the monitoring of control and resident animals. (Desert tortoises used as controls inhabit areas that are disjunct from those occupied by translocated animals; resident animals occupy areas into which desert tortoises have been translocated.) These studies have indicated that translocated, resident, and control animals do not have significant differences in mortality rates or in levels of stress hormones. The reproductive output of translocated is slightly lower than that of residents or controls for the first year after translocation and translocated animals tend to move more but settle down after a period of time.

The Service's (2014) biological opinion for the Stateline and Silver State South solar projects contains and extensive discussion of the potential effects of translocation on desert tortoises; we incorporate that analysis herein by reference. Because the action area for the action under consideration in this biological opinion supports a very small number of desert tortoises, we anticipate that any effects of translocation on either resident or translocated animals are likely to be negligible. The potential exists that a small number of translocated or resident desert tortoises may die or be injured during the translocation because of the specific circumstances; however, we consider this likelihood.to be extremely low.

Effects of Construction on Desert Tortoises

Desert tortoises may be killed or injured by construction activities associated with the proposed project if they are not removed from work areas prior to the onset of ground-disturbing activities. Because of the desert tortoise's cryptic coloration and fossorial habits, all individuals may not be detected during surveys; smaller individuals and eggs are more likely to be missed than larger animals. Desert tortoises could also be killed or injured if they re-enter the work area through a

breech in the exclusion fencing. Because of the numerous protective measures that Caltrans will implement and the small number of desert tortoises likely to occur within the action area, we expect that few desert tortoises are likely to be killed or injured during construction.

Desert tortoises may be killed or injured by vehicles associated with the proposed project as they travel along access roads to work sites. We are unable to separate the potential effects of project-associated vehicles from those of the general public. On paved roads, the general volume of traffic would likely mask any effect of the project vehicles; on unpaved routes, project vehicles may comprise a measurable, although still small portion of the traffic. Because Caltrans will limit speeds to 20 miles per hour for project-associated vehicles and because all workers will have undergone a worker awareness and education program about desert tortoises, workers are less likely to strike desert tortoises than a casual user. Furthermore, few desert tortoises occur in the action area. Therefore, we expect that few desert tortoises are likely to be killed or injured along access roads.

Lastly, desert tortoise may be killed or injured by uninformed workers; for example, workers may collect them as pets. However, we do not expect any desert tortoises would be killed or injured in this manner because all project personnel will receive specific training, which would increase their awareness of this potential threat and inform them of the prohibitions against unauthorized handling of desert tortoise.

Effects on Habitat

The construction of the new road alignment would affect approximately 672.23 acres of desert tortoise habitat (Caltrans 2013). This acreage includes approximately 402.21 acres that will be permanently lost to cut/fill activities for the new highway, a soil borrow site of approximately 49.24 acres , and approximately 220.78 acres of temporary impacts to habitat within the new right of way. Temporary impacts include staging areas for equipment storage and parking.

The disturbance and loss of desert tortoise habitat would not compromise the ability of desert tortoises to inhabit the local region because the project area represents a small, linear portion of the overall habitat available to desert tortoises. The project area and the area between the new and existing routes for Highway 395 has already been disturbed by historical and current human activities and continues to experience some degree of periodic disturbance from human use and livestock grazing. Finally, the action area is not located in an area that the Service considers important for the recovery of the desert tortoise (i.e., critical habitat, desert wildlife management areas, reserve lands, national parks, and the linkages between these areas).

Installation of Under-road Passages

The existing Highway 395 has fragmented habitat and likely disrupted the movement of desert tortoises across this portion of the desert. Additionally, the Los Angeles Aqueduct, which roughly parallels the proposed new alignment of the expressway, has also likely decreased east-west movement of desert tortoises in the area. We expect that few desert tortoises are able to

cross the existing highway without being struck by vehicles, although they may use existing culverts to pass under it. Because Caltrans will install fencing to exclude desert tortoises along the new road alignment, desert tortoises would be less likely to be killed or injured by vehicles on Highway 395 although some potential exists that animals at the northern and southern ends of the action area could walk around the ends of the exclusion fencing. Additionally, in areas where the fencing crosses private roads that have been gated, the potential exists for the gates to be left open, which would decrease the efficacy of the fence to some degree. However, in contrast to current conditions (i.e., desert tortoises can attempt to cross the highway at any point), fencing with gates is likely to reduce the level of mortality. Caltrans' installation of 13 culverts (either corrugated metal pipes, box culverts, or a 10-foot-high by 12-foot-wide wildlife crossing) under the re-aligned Highway 395 will allow desert tortoises to move under the highway.

The presence of the new expressway will not substantially alter the degree of fragmentation in this region. Because the permanent fencing will decrease the likelihood that desert tortoises will be struck by vehicles on Highway 395 and the culverts will allow them to move under the road, the proposed action may result in an increase in overall connectivity in the local area.

Invasive Non-Native Plant Species

Invasive non-native plant species have evolved outside of the area into which they are introduced. These plant species are not controlled by native predators and, therefore, may proliferate in an area into which they have been introduced. Invasive non-native plant species compete with native plant species for nutrients, light, and space.

Non-native plant species currently occur on the project area and are likely to occur in other portions of the action area at varying densities. Road construction activities have the potential to increase the distribution and abundance of non-native weed species within the action area due to surface-disturbing activities that favor the establishment of these species; equipment being brought in from off site may also introduce new species of weeds into the action area. In addition, access to the project site by personnel may increase the volume and distribution of non-native seed carried into the action area. If the proposed action results in an increased abundance of non-native weed species in the action area, they would likely reduce the quantity and quality of forage for desert tortoises and increase fire risk, which may result in future habitat loss beyond the action area. Wild fires also kill desert tortoises that are above ground and can deprive those that survive the fire of plants that they eat and use for shelter.

Caltrans will include, in the construction contract stipulations, measures to help reduce the possibility of introducing new invasive plants into the action area. These measures will include the inspection and cleaning of construction equipment, commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes, and other strategies to help reduce existing populations of invasive non-native plants, or those that could occur in the future. We cannot reasonably predict the increase in non-native weed species abundance that this project will create within the action area nor the effects to the desert tortoise from the introduction of non-native weed species.

Increased Subsidies for Predators

Common ravens and coyotes are often attracted to human activity in the desert. Consequently, the proposed action has the potential to attract common ravens and coyotes; additional food sources for predators may also lead to increases in their reproductive rates. Increased numbers of predators would likely lead to further predation on desert tortoises in the vicinity of the project. Securing trash will eliminate it as a source of food for these and other predators, thereby reducing the attractiveness of the area to these predators. Caltrans proposes to provide animal resistant/proof trash containers and to remove trash in a timely manner. Implementation of these proposed measures should reduce the attraction of common ravens and coyotes to the new facilities; therefore, the proposed action is unlikely to cause a measurable increase in the predation of desert tortoises.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Endangered Species Act. A portion of the action area crosses land managed by the Bureau of Land Management; any future actions on these lands would be subject to the consultation requirements of section 7(a)(2) of the Endangered Species Act and are therefore not considered cumulative effects. We are unaware of any non-Federal actions that are reasonably certain to occur in the action area.

CONCLUSIONS

As we stated previously in the biological opinion, "jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 Code of Federal Regulations 402.02). This regulatory definition focuses on how the proposed action would affect the reproduction, numbers, or distribution of the species under consideration in the biological opinion. For that reason, we have used those aspects of the desert tortoise's status as the basis to assess the overall effect of the proposed actions on the species.

Additionally, we determine whether a proposed action is likely "to jeopardize the continued existence of the species" through an analysis of how a proposed action affects the listed taxon within the action area in relation to the range of the entire listed taxon. For the desert tortoise, this process involves considering the effects at the level of the action area, then at the level of the recovery unit (in this case, the Western Mojave Recovery Unit), and then finally for the range of the listed taxon. Logically, if a proposed action is unlikely to cause a measurable effect on the listed taxon within the action area, it is unlikely to affect the species throughout the recovery unit or the remainder of its range. Conversely, an action with measurable effects on the listed entity

in the action area may degrade the status of the species to the extent that it is affected at the level of the recovery unit or range-wide.

In the following sections, we will synthesize the analyses contained in the Effects of the Action section of this biological opinion to determine how each of the proposed actions affects the reproduction, number, and distribution of the desert tortoise. We will then assess the effects of the proposed actions on the recovery of the species and whether they are likely to appreciably reduce the likelihood of both the survival and recovery of the desert tortoise.

Reproduction

Construction of the highway would not have a measurable long-term effect on reproduction of individual desert tortoises that live adjacent to Highway 395 because this construction activity would occur over a relatively brief period of time relative to the reproductive life of female desert tortoises. Furthermore, desert tortoises are well adapted to highly variable and harsh environments and their longevity helps compensate for their variable annual reproductive success (Service 1994).

We expect that translocated desert tortoises may exhibit decreased reproduction in the first year following translocation. Based on research conducted by Nussear et al. (2012), however, the reproductive rates of translocated desert tortoises are likely to be the same as those of resident animals in subsequent years. Based on work conducted by Saethre et al. (2003), we do not expect the increased density of desert tortoises that would result from translocation to affect the reproduction of resident animals. Most, if not all, of the reproductive desert tortoises in the project area would be moved to adjacent areas where they would continue to live and reproduce For these reasons, we expect that the proposed Olancha/Cartago Four-Lane project is not likely to appreciably diminish reproduction of the desert tortoise in the action area.

Numbers

We expect that the proposed action is likely to result in the injury or mortality of a few large desert tortoises because most construction activities (the aspects of the proposed action that would be most likely to kill or injure desert tortoises) would occur within areas that have been fenced and cleared of desert tortoises. For activities outside of fenced areas, Caltrans would implement measures to reduce the level of mortality during all work activities. We anticipate that the proposed action is likely to result in injury or mortality of some small desert tortoises because of their small size and cryptic nature. However, few large desert tortoises occur within the action area. As such, the density of large desert tortoises serves as the basis for our following analysis.

In the Environmental Baseline – Status of the Desert Tortoise in the Action Area section of this biological opinion, we estimated that approximately 6 large desert tortoises could occur within the approximately 672-acre action area. However, as we have previously mentioned, the action area has experienced a considerable amount of disturbance due to past and on-going human

activities such as livestock grazing, residential, commercial, and industrial development, the Los Angeles Aqueduct and associated access roads, numerous unpaved roads, the existing Highway 395, and a railroad. Therefore, the density of desert tortoises in the action is likely lower due to these impacts.

Implementation of the proposed action would not appreciably reduce the number of desert tortoises in the Western Mojave Recovery Unit. In a worst-case scenario (that is, all 6 large desert tortoises we estimate to be in the action area are killed during construction), the loss of 6 individuals from the overall number of large desert tortoises in the Western Mojave Recovery Unit (76,644) would comprise 0.008 percent of the individuals in the recovery unit. We expect that Caltrans would not kill every large desert tortoise during construction because of the protective measures it will implement.

Distribution

The permanent loss of approximately 451 acres of desert tortoise habitat (paved highway and soil borrow site) that would result from implementation of the Olancha/Cartago Four-Lane project is not likely to appreciably reduce the distribution of the desert tortoise. The Western Mojave Recovery Unit may support as much as 11,847 square miles of desert tortoise habitat (Allison 2013). Consequently, the proposed action would result in the loss of approximately 0.006 percent of the habitat in the Western Mojave Recovery Unit (0.70 square mile divided by 11,847 square miles).

Effects on Recovery

Given the small number of large desert tortoises that we expect the Olancha/Cartago Four-Lane project to injure or kill, the proposed action is unlikely to appreciably diminish the ability of the desert tortoise to reach stable or increasing population trends in the future. Caltrans' proposals to offset the adverse effects of the road construction (e.g., fencing of Highway 395, and installation of culverts to accommodate the movement of desert tortoises across the highway) would remove sources of mortality in the action area. These measures would promote the recovery of the desert tortoise and, over time, are likely to prevent more individuals from being killed than Caltrans is likely to kill during construction of the new highway alignment. For these reasons, we conclude that construction of Olancha/Cartago Four-Lane project is not likely to appreciably diminish the likelihood of recovery of the desert tortoise.

To summarize, we have concluded that the proposed action is not likely to appreciably diminish reproduction, numbers, or distribution of the desert tortoise in the action area, or to appreciably impede long-term recovery of the desert tortoise. After reviewing the current status of the species, the environmental baseline for the action area, the effects of the proposed actions, and the cumulative effects, it is the Service's biological opinion that Caltrans' proposed Olancha/Cartago Four-Lane Project is not likely to jeopardize the continued existence of the desert tortoise. We reached these conclusions for these projects because:

1. We do not expect that the construction of the Olancha/Cartago Four-Lane project would affect the reproductive capacity of desert tortoises in the action area.

2. Caltrans has proposed numerous measures, including translocation of the few desert tortoises expected to occur in the project site, to minimize injury and mortality during construction. Consequently, the proposed action is not likely to appreciably reduce the number of desert tortoises in the Western Mojave Recovery Unit.

3. The proposed action will not appreciably reduce the distribution of the desert tortoise in the action area because it would result in the loss of approximately 0.006 percent of desert tortoise habitat in the Western Mojave Recovery Unit. This area represents an insignificant amount of desert tortoise habitat.

4. The installation of permanent fencing to prevent desert tortoises from being injured or killed along the re-aligned highway and of at least 13 under-road passages to help in maintaining connectivity is likely to contribute, to a small degree, to recovery of the desert tortoise.

As we noted previously in this biological opinion, the analysis we conduct under section 7(a)(2) of the Endangered Species Act must be conducted in relation to the status of the entire listed taxon. Because we have reached the determination that the proposed action is not likely to appreciably diminish reproduction, numbers, or distribution of the desert tortoise in this action area, these actions are also not likely to affect desert tortoises within the remainder of the Western Mojave Recovery Unit or to the remainder of the range of the Mojave population of the desert tortoise.

INCIDENTAL TAKE STATEMENT

Section 9 of the Endangered Species Act and Federal regulations pursuant to section 4(d) of the Endangered Species Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent act or omission that creates the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Endangered Species Act provided that such taking is in compliance with the protective measures proposed by Caltrans and the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and must be undertaken by Caltrans for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activities covered by this incidental take statement. If Caltrans (1) fails to assume and implement the terms and conditions or (2) fails to require any contractors to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to any contract document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 Code of Federal Regulations 402.14(i)(3)]. We also note that, because the Service considered the effects of the protective measures proposed by Caltrans in its analysis of the proposed action, these measures are also non-discretionary.

We are unable to state precisely how many desert tortoises are present within the area where construction activities for the proposed Olancha/Cartago Four-Lane Project would take place for several reasons. The project area is located in an area disturbed by historical and on-going human activities. Additionally, desert tortoises are cryptic (i.e., individuals spend much of their lives underground or concealed under shrubs), they are inactive in years of low rainfall, and their numbers and distribution within the action area may have changed since the surveys were completed because of hatchings, deaths, immigration, and emigration. The numbers of hatchlings and eggs are even more difficult to quantify because of their small size, the location of eggs underground, and the fact that their numbers vary depending on the season; that is, at one time of the year, eggs are present but they become hatchlings later in the year.

Determining the amount or extent of the forms in which the take is likely to occur (killed, injured, or captured) is also difficult. As we noted previously, most of the large individuals (i.e., those greater than 180 millimeters in length) within this area will likely be captured and moved from harm's way to adjacent habitat. Furthermore, Caltrans proposes to implement avoidance and minimization measures that will minimize the mortality or injury of desert tortoises. However, occasionally even larger animals remain undetected during clearance surveys. Also, as we have stated previously, small tortoises may be captured and moved during pre-construction clearance surveys. Any undetected animals are likely to be killed or injured during construction

Therefore, we anticipate that all desert tortoises within the project site are likely to be taken. We anticipate that most of the large individuals within this area will be captured and moved from harm's way to adjacent habitat; any that are not detected during clearance surveys prior to construction may be killed or injured. Because of the difficulty in finding small desert tortoises (i.e., those less than 180 millimeters in length), we expect that most of these individuals are likely to be killed or injured during construction. The protective measures proposed by Caltrans are likely to prevent mortality or injury of most large desert tortoises, and to a certain extent, some small tortoises. In addition, finding a dead or injured desert tortoise is unlikely.

Because we cannot precisely quantify the number of individuals that are likely to be killed, injured, or captured during construction of the proposed project, we will consider the amount or extent of take to be exceeded if two large desert tortoises are killed or injured within the project

area. We are not establishing a re-initiation criterion for the number of large or small desert tortoises that would be moved out of harm's way during construction of the proposed project. Furthermore, we are not establishing a re-initiation criterion for the loss of small desert tortoises or eggs.

The exemption provided by this incidental take statement to the prohibitions against take contained in section 9 of the Endangered Species Act extends only to the action area as described in the Environmental Baseline section of this biological opinion.

REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS

The Service believes that the avoidance and minimization measures proposed by Caltrans are sufficient to minimize the take of desert tortoises. Consequently, we have not identified any reasonable and prudent measures or terms and conditions that we consider necessary or appropriate to minimize take of the desert tortoise.

REPORTING REQUIREMENTS

Within 60 days of the completion of the proposed action, Caltrans must provide a report to the Service that provides details on the effects of the action on the desert tortoise. Specifically, the report must include information on any instances when desert tortoises were killed, injured, or handled, the circumstances of such incidents, and any actions undertaken to prevent similar mortalities or injuries from re-occurring. In addition, Caltrans must provide an annual report by January 31 each year during the construction period with this information; if animals are moved from harm's way during this period, Caltrans must include that information in these reports.

We also request that Caltrans provide us with the names of any biological monitors who assisted the authorized biologist and an evaluation of the experience they gained on the project; the qualifications form on our website (http://www.fws.gov/ventura/sppinfo/protocols/deserttortoise_monitor-qualifications-statement.pdf), filled out for this project, along with any appropriate narrative would provide an appropriate level of information. This information would provide us with additional reference material in the event these individuals are submitted as potential authorized biologists for future projects.

DISPOSITION OF DEAD OR INJURED DESERT TORTOISES

Within 3 days of locating any dead or injured desert tortoises, you must notify the Palm Springs Fish and Wildlife Office by telephone 760-322-2070 or email at raymond_vizgirdas@fws.gov. The report must include the date, time, and location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

Caltrans must take injured desert tortoises to a qualified veterinarian for treatment. If any injured tortoises survive, Caltrans must contact the Service regarding their final disposition.

Caltrans must take care in handling dead specimens to preserve biological material in the best possible state for later analysis, if such analysis is needed. The Service will provide the appropriate guidance when Caltrans provides notice that a desert tortoise has been killed by project activities.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Endangered Species Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. We have no conservation recommendations at this time.

REINITIATION NOTICE

This concludes formal consultation on the proposed Olancha/Cartago Four-Lane Project in Inyo County. As provided in 50 Code of Federal Regulations 402.16, re-initiation of formal consultation is required where discretionary Federal involvement or control over the action has been retained or is authorized by law and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) will have lapsed and any further take would be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending re-initiation.

If you have any questions regarding this biological opinion, please contact Ray Vizgirdas of my staff at 208-373-4020 or at raymond_vizgirdas@fws.gov.

Sincerely,

Scott A. Sobiech
Acting Field Supervisor

APPENDICES

1. Mojave population of the desert tortoise (*Gopherus agassizii*). 5-year review: summary and evaluation. Available on disk or hard copy by request or at: http://ecos.fws.gov/docs/five_year_review/doc3572.DT%205Year%20Review_FINAL.pdf.

2. Solar projects for which the U.S. Fish and Wildlife Service has issued biological opinions or incidental take permits.

3. Methodology used to estimate the number of desert tortoises present in the action area.

LITERATURE CITED

Allison, L. 2014. Electronic mail. Range-wide population trends. Dated May 5. Desert tortoise monitoring coordinator, Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service. Reno, Nevada.

Boarman, W.I. 2002. Threats to desert tortoise populations: a critical review of the literature. Prepared for the West Mojave Planning Team, U.S. Department of the Interior, Bureau of Land Management. San Diego Field Station, Western Ecological Research Center, U.S. Geological Society. San Diego, California.

Bureau of Land Management, County of San Bernardino, and City of Barstow. 2005. Final environmental impact report and statement for the West Mojave Plan; a habitat conservation plan and California Desert Conservation Area Plan amendment. California Desert District, Moreno Valley, California.

California Department of Transportation. 2013. Biological assessment for the Olancha/Cartago Four-Lane Project. Inyo County, California 09-INY-395, PM 29.2/41.8 EA 09-21340.

Cromwell, J. 2014. Electronic mail. Comments on the draft biological opinion for the Olancha Project. Dated May 28. Associate biologist, Central Region Biology, North Branch, California Department of Transportation. Fresno, California.

Desert Tortoise Recovery Office. 2014. Internal document. Update on monitoring. Dated January 14. U.S. Fish and Wildlife Service. Reno, Nevada.

Esque, T.C., K.E. Nussear, K.K. Drake, A.D. Walde, K.H. Berry, R.C. Averill-Murray, A.P. Woodman, W.I. Boarman, P.A. Medica, J. Mack, J.S. Heaton. 2010. Effects of subsidized predators, resource variability, and human population density on desert tortoise populations in the Mojave Desert, USA. Endangered Species Research (12) 167-177.

Fort Irwin Research Coordination Meeting. 2008. Meeting notes. Dated October 29.

Fry J., G. Xian, S. Jin, J. Dewitz, C. Homer, L. Yang, C. Barnes, N. Herold, and J. Wickham. 2011. National Land Cover Database 2006 Percent Developed Imperviousness. Raster digital data. MRLC.gov. www.mrlc.gov/nlcd06_data.php.

Ironwood Consulting. 2011. Biological resources technical report – Stateline Solar Farm Project, San Bernardino County, California. Redlands, California.

Longshore, K.M., J.R Jaeger, and M. Sappington. 2003. Desert tortoise (*Gopherus agassizii*) survival at two eastern Mojave desert sites: death by short-term drought? Journal of Herpetology 37(1):169-177.

Nussear, K.E., T.C. Esque, R.D. Inman, L. Gass, K.A. Thomas, C.S.A. Wallace, J.B. Blainey, D.M. Miller, and R.H.Webb. 2009. Modeling habitat of the desert tortoise (*Gopherus agassizii*) in the Mojave and parts of the Sonoran Deserts of California, Nevada, Utah, and Arizona. U.S. Geological Survey Open-File Report 2009-1102.

Oftedal, O.T., S. Hillard, and D.J. Morafka. 2002. Selective spring foraging by juvenile desert tortoises (*Gopherus agassizii*) in the Mojave Desert: Evidence of an adaptive nutritional strategy. Chelonian Conservation and Biology 4:341-352.

Tracy, C.R., R. Averill-Murray, W.I. Boarman, D. Delehanty, J. Heaton, E. McCoy, D. Morafka, K. Nussear, B. Hagerty, and P. Medica. 2004. Desert Tortoise Recovery Plan Assessment. Prepared for the U.S. Fish and Wildlife Service. Reno, Nevada.

U.S. Fish and Wildlife Service. 1994. Desert tortoise (Mojave population) recovery plan. Portland, Oregon.

U.S. Fish and Wildlife Service. 2006. Biological opinion for the California Desert Conservation Area Plan [West Mojave Plan] (6840(P) CA-063.50) (1-8-03-F-58). Dated January 9. Memorandum to District Manager, California Desert District, Bureau of Land Management, Moreno Valley, California. Ventura, California.

U.S. Fish and Wildlife Service. 2007. Amendment to the biological opinion for the California Desert Conservation Area Plan [West Mojave Plan] (6840(P) CA-063.50) (1-8-03-F-58). Dated November 30. Memorandum to District Manager, Bureau of Land Management, Moreno Valley, California. Ventura, California.

U.S. Fish and Wildlife Service. 2009. Desert tortoise field manual. Found online at http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/.

U.S. Fish and Wildlife Service. 2010. Mojave population of the desert tortoise (*Gopherus agassizii*) 5-year review: summary and evaluation. Desert Tortoise Recovery Office, Reno, Nevada

U.S. Fish and Wildlife Service. 2011. Revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). Pacific Southwest Region. Sacramento, California.

U.S. Fish and Wildlife Service. 2012a. Range-wide monitoring of the Mojave population of the desert tortoise: 2008 and 2009 annual report. Desert Tortoise Recovery Office. Reno, Nevada.

U.S. Fish and Wildlife Service. 2012b. Range-wide monitoring of the Mojave population of the desert tortoise: 2010 annual report. Desert Tortoise Recovery Office. Reno, Nevada.

U.S. Fish and Wildlife Service. 2012c. Range-wide monitoring of the Mojave population of the desert tortoise: 2011 annual report. Draft. Desert Tortoise Recovery Office. Reno, Nevada.

U.S. Fish and Wildlife Service. 2012d. Range-wide monitoring of the Mojave population of the desert tortoise: 2012 annual report. Draft. Desert Tortoise Recovery Office. Reno, Nevada.

U.S. Fish and Wildlife Service. 2012e. Biological opinion on the proposed addition of maneuver training lands at Fort Irwin, California (8-8-11-F-38R). Dated April 27. Letter to Chief of Staff, Headquarters, National Training Center and Fort Irwin, Fort Irwin, California. From Field Supervisor, Ventura Fish and Wildlife Office. Ventura, California.

U.S. Fish and Wildlife Service. 2012f. Biological opinion on the land acquisition and airspace establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training, Twentynine Palms, California (8-8-11-F-65). Dated July 17. Letter to Commanding General, Marine Corps Air Ground Combat Center, Twentynine Palms, California. From Field Supervisor, Ventura Fish and Wildlife Office. Ventura, California.

U.S. Fish and Wildlife Service. 2012g. Biological opinion on the Digital 395 Middle Mile Project, San Bernardino, Kern, Inyo, and Mono Counties, California, and Douglas, Carson City, and Washoe Counties, Nevada (8-8-12-F-7).

Appendix 2. Solar projects for which the U.S. Fish and Wildlife Service has issued biological opinions or incidental take permits.

The following table summarizes information regarding the proposed solar projects that have undergone formal consultation with regard to the desert tortoise. In the Citations column, a single reference indicates that the acres of desert tortoise habitat and number of desert tortoises are estimates from the biological opinion; when the column includes two citations, the first is for the acres of desert tortoise habitat from the biological opinion and the second is for number of desert tortoises that are known to have been translocated or killed during construction.

Project and Recovery Unit	Acres of Desert Tortoise Habitat	Desert Tortoises Estimated[1]	Desert Tortoises Observed[2]	Citations[3]
Eastern Mojave				
Ivanpah Solar Electric Generating System	3,582	1,136	173	Service 2011a, 2013d
Stateline Solar	1,685	94	-	Service 2013a
Silver State North – NV	685	14	4	Service 2010a, Cota 2013
Silver State South – NV	2,427[4]	122[4]	-	Service 2013a
Amargosa Farm Road – NV	4,350	4	-	Burroughs 2012
Western Mojave				
Abengoa Harper Lake	Primarily in abandoned agricultural fields	4	-	Service 2011b
Chevron Lucerne Valley	516	10	-	Service 2010b
Northeastern Mojave				
Nevada Solar One - NV	400	[5]	[5]	Burroughs 2012, 2014
Copper Mountain North - NV	1,400	30[5]	30[5]	Burroughs 2012, 2014
Copper Mountain - NV	380	[5]	[5]	Burroughs 2012, 2014
Moapa K Road Solar - NV	2,141	186	157	Service 2012, Burroughs 2013
Colorado				
Genesis	1,774	8	0	Service 2010c, Fraser 2014

Blythe	6,958	30	-	Service 2010d
Desert Sunlight	4,004	56	7	Service 2011c, Fraser 2014
McCoy	4,533	15	-	Service 2013b
Desert Harvest	1,300	5	-	Service 2013c
Rice	1,368	18	1	Service 2011d, Fraser 2014
Total	**37,503**	**1,732**	**372**	

1. The numbers in this column are not necessarily comparable because the methodologies for estimating the numbers of desert tortoises occasionally vary between projects.
2. This column reflects the numbers of desert tortoises observed within project areas. It includes translocated animals and those that were killed by project activities. Project activities may result in the deaths of more desert tortoises than are found.
3. The first citation in this column is for the biological opinion or incidental take permit and is the source of the information for both acreage and the estimate of the number of desert tortoises. The second is for the number of desert tortoises observed during construction of the project; where only one citation is present, construction has not begun or data are unavailable at this time.
4. These numbers include Southern California Edison's Primm Substation and its ancillary facilities.
5. These projects occurred under the Clark County Multi-species Habitat Conservation Plan; the provisions of the habitat conservation plan do not require the removal of desert tortoises. We estimate that all three projects combined will affect fewer than 30 desert tortoises.

The Service completed consultation on the Calico and Palen projects. The applicant for the Calico project, which was located in the Western Mojave Recovery Unit, has abandoned the project and the Bureau of Land Management has withdrawn the request for consultation (Bureau of Land Management 2013). For the Palen project, which is located in the Colorado Desert, BrightSource Energy acquired the project from its former owner and proposed to use power tower technology. The California Energy Commission denied the application but will allow BrightSource Energy to re-apply if it can resolve the issues the California Energy Commission raised; the Service has suspended re-initiation of formal consultation on the project at this time (Fraser 2014).

References

Bureau of Land Management. 2013. Withdrawal of request for re-initiation of consultation for the Calico Solar Project. Dated August 09. Memorandum to Field Supervisor, Ventura Fish and Wildlife Office, Ventura, California. From Deputy State Director, California State Office. Sacramento, California.

Burroughs, M. 2012. Electronic mail. Information on solar projects in desert tortoise habitat in Nevada for which the Service has issued biological opinions. Dated April 26. Fish and Wildlife Biologist, Southern Nevada Field Office, U.S. Fish and Wildlife Service. Las Vegas, Nevada.

Burroughs, M. 2013. Electronic mail. Comments on the draft biological opinion for the Stateline and Silver State Solar South projects, San Bernardino County, California, and Clark County, Nevada (Stateline: 2800(P), CACA-048669, CAD090.01; Silver State South: 6840 (NV-052)) (Stateline: 8-8-13-F-43; Silver State South: 84320-2010-F-0208-R003). Dated September 23. Biologist, Southern Nevada Field Office, U.S. Fish and Wildlife Service. Las Vegas, Nevada.

Burroughs, M. 2014. Electronic mails. Status of solar projects in Nevada. Dated January 27. Biologist, Southern Nevada Field Office, U.S. Fish and Wildlife Service. Las Vegas, Nevada.

Cota, M. 2013. Electronic mail. Comments on the draft biological opinion for the Stateline and Silver State Solar South projects, San Bernardino County, California, and Clark County, Nevada (Stateline: 2800(P), CACA-048669, CAD090.01; Silver State South: 6840 (NV-052)) (Stateline: 8-8-13-F-43; Silver State South: 84320-2010-F-0208-R003). Dated September 18. Wildlife biologist, Pahrump Field Office, Bureau of Land Management. Las Vegas, Nevada.

Davis, D. 2013. Electronic mail. Number of desert tortoises being monitored as control animals for the Ivanpah Solar Electric Generating System. Dated September 9. Senior Compliance Manager, BrightSource Energy, Inc. Oakland, California.

Fraser, J. 2014. Electronic mails. Status of solar projects in Colorado Desert. Dated January 27 and 28. Biologist, Palm Springs Fish and Wildlife Office, U.S. Fish and Wildlife Service. Palm Springs, California.

U.S. Fish and Wildlife Service. 2010a. Formal consultation for the Silver State Solar Project (NextLight Renewable Power, LLC), Clark County, Nevada. File No. 84320-2010-F-0208. Dated September 16. Memorandum to Field Manager, Pahrump Field Office, Bureau of Land Management, Las Vegas, Nevada. From State Supervisor, Nevada Fish and Wildlife Office. Reno, Nevada.

U.S. Fish and Wildlife Service. 2010b. Biological opinion on the Lucerne Valley Chevron Solar Project, San Bernardino County, California (8-8-10-F-6). Memorandum to Field Manager, Barstow Field Office, Bureau of Land Management, Barstow, California. Dated June 10. From Field Supervisor, Ventura Fish and Wildlife Office. Ventura, California.

U.S. Fish and Wildlife Service. 2010c. Biological opinion on the Genesis Solar Energy Project, Riverside County, California. Memorandum to Field Manager, Palm Springs South Coast Field Office, Bureau of Land Management, Palm Springs, California. Dated November 2. From Field Supervisor, Carlsbad Fish and Wildlife Office. Carlsbad, California.

U.S. Fish and Wildlife Service. 2010d. Biological opinion on the Blythe Solar Power Plant, Riverside County, California. Memorandum to Field Manager, Palm Springs South Coast Field Office, Bureau of Land Management, Palm Springs, California. Dated October 8. From Field Supervisor, Carlsbad Fish and Wildlife Office. Carlsbad, California.

U.S. Fish and Wildlife Service. 2011a. Biological opinion on BrightSource Energy's Ivanpah Solar Electric Generating System Project, San Bernardino County, California [CACA-48668, 49502, 49503, 49504] (8-8-10-F-24R). Dated June 10. Memorandum to District Manager, California Desert District, Bureau of Land Management, Moreno Valley, California. From Field Supervisor, Ventura Fish and Wildlife Office. Ventura, California.

U.S. Fish and Wildlife Service. 2011b. Biological opinion on the Mojave Solar, LLC's Mojave Solar Project, San Bernardino County, California (8-8-11-F-3). Letter sent to Director of Environmental Compliance, Loan Guarantee Program, Department of Energy, Washington, D.C. and Field Manager, Barstow Field Office, Bureau of Land Management, Barstow, California. Dated March 17. From Field Supervisor, Ventura Fish and Wildlife Office. Ventura, California.

U.S. Fish and Wildlife Service. 2011c. Biological opinion on the Desert Sunlight Solar Farm Project, Riverside County, California. Memorandum to Field Manager, Palm Springs South Coast Field Office, Bureau of Land Management, Palm Springs, California. Dated July 6. From Field Supervisor, Carlsbad Fish and Wildlife Office. Carlsbad, California.

U.S. Fish and Wildlife Service. 2011d. Biological opinion on the Rice Solar Energy Project, Riverside County, California. Dated July 27. Letter to John, Holt, Environmental Manager, Desert Southwest Customer Service Region Western Area Power Administration, Phoenix, Arizona. From Jim A. Bartel, Field Supervisor, Carlsbad Fish and Wildlife Office. Carlsbad, California.

U.S. Fish and Wildlife Service. 2012. Biological opinion for the K Road Moapa Solar Project, Moapa River Indian Reservation, Clark County, Nevada. Memorandum to Superintendent, Southern Paiute Agency, Bureau of Indian Affairs. St. George, Utah. Dated March 7. From State Supervisor, Nevada Fish and Wildlife Office. Reno, Nevada.

U.S. Fish and Wildlife Service. 2013a. Biological opinion for the Stateline Solar and Silver State Solar South Projects, San Bernardino County, California, and Clark County, Nevada. Dated September 30. Memorandum to Field Manager, Needles Field Office, Bureau of Land Management, Needles California, and Assistant Field Manager, Las Vegas Field Office, Bureau of Land Management, Las Vegas, Nevada. From Acting Field Supervisor, Ventura Fish and Wildlife Office. Ventura, California.

U.S. Fish and Wildlife Service. 2013b. Biological opinion on the McCoy Solar Power Project, Riverside County, California. Dated March 6. Memorandum to Field Manager, California Desert District Office, Bureau of Land Management, Moreno Valley, California. From Field Supervisor, Carlsbad Fish and Wildlife Office. Carlsbad, California.

U.S. Fish and Wildlife Service. 2013c. Biological opinion on the Desert Harvest Solar Project, Riverside County, California [CACA 044919]. Dated January 15. Memorandum to Field Manager, Palm Springs-South Coast Field Office, Bureau of Land Management, Moreno Valley, California. From Field Supervisor, Carlsbad Fish and Wildlife Office. Carlsbad, California.

U.S. Fish and Wildlife Service. 2013d. Internal briefing for the Secretary of the Interior regarding the Ivanpah Solar Electric Generating System. Dated June 25. Ventura Fish and Wildlife Office. Ventura, California.

Appendix 3. Estimating the number of large desert tortoises in the action area.

We used the estimated density derived by range-wide sampling within the Fremont-Kramer Critical Habitat Unit as the density within the project area. Large desert tortoises are those individuals that are greater than 180 millimeters in length.

Average density of large desert tortoises in the Fremont-Kramer Critical habitat Unit (Service 2011) – 5.72 desert tortoises/square mile

Project area of the proposed Olancha/Cartago Four-Lane Project = 672.23 acres = 1.05 square miles

5.72 large desert tortoises/square miles x 1.05 square miles = 6.006 desert tortoises

Reference

U.S. Fish and Wildlife Service. 2012. Range-wide monitoring of the Mojave population of the desert tortoise: 2012 annual report. Draft. Desert Tortoise Recovery Office. Reno, Nevada.

Appendix K Programmatic Agreement

PROGRAMMATIC AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE BUREAU OF LAND MANAGEMENT,
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE OLANCHA-CARTAGO FOUR-LANE PROJECT,
INYO COUNTY, CALIFORNIA

WHEREAS, The California Department of Transportation (Caltrans), on behalf of the Federal Highway Administration (FHWA), has consulted with the California State Historic Preservation Officer (SHPO) pursuant to the January 2014 First Amended *Programmatic Agreement Among The Federal Highway Administration, The Advisory Council On Historic Preservation, The California State Historic Preservation Officer, And The California Department Of Transportation Regarding Compliance With Section 106 Of The National Historic Preservation Act, As It Pertains To The Administration Of The Federal-Aid Highway Program In California* (2014 PA), regarding the Olancha-Cartago Four-Lane Project, Inyo County (Undertaking) and its potential to affect historic properties, and has decided to prepare a Programmatic Agreement (Agreement) for the project pursuant to 36 CFR § 800.14(b); and

WHEREAS, a Preferred Alignment has been proposed for the Undertaking; and

WHEREAS, the Bureau of Land Management (BLM), having jurisdiction over a significant percentage of land in the Area of Potential Effects (APE) of the Undertaking and will be issuing a Letter of Consent, has entered into an agreement with FHWA and Caltrans, *Agreement among the Federal Highway Administration, California Division, California Department of Transportation and The Department of Interior, Bureau of Land Management Bishop and Ridgecrest Field Offices for the Olancha/Cartago Four-Lane Project,* which clarifies the roles and responsibilities under the National Environmental Policy Act (NEPA) and designates FHWA as the lead federal agency, Caltrans as joint lead agency, and the BLM as a cooperating agency in the environmental review process of this Undertaking; and

WHEREAS, the BLM, having jurisdiction over a significant percentage of land in the APE of the Undertaking and will be issuing a Letter of Consent for FHWA to appropriate BLM public lands for highway rights-of-way, being obligated to comply with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), and its implementing regulations (36 CFR Part 800) has agreed that FHWA is the lead federal agency pursuant to 36 CFR § 800.2(a)(2), and that BLM is a consulting party for the purposes of 36 CFR § 800.2 and that as a signatory, BLM's responsibilities under 36 CFR Part 800 for all actions required of them for purposes of this Undertaking, including any Federal Land Transfers or issuance of required permits, including but not limited to permits under the Archaeological Resources Protection Act (ARPA) are fulfilled; and

WHEREAS, Caltrans, pursuant to the 2014 PA has been delegated to act on behalf of FHWA for certain actions required by 36 CFR Part 800; and

WHEREAS, Caltrans on behalf of the FHWA and in consultation with BLM and SHPO, has determined that the Undertaking will have an adverse effect on historic properties, has notified the Advisory Council on Historic Preservation (ACHP) of the finding pursuant to 36 CFR §

800.6(a)(1) and the ACHP has decided to participate in consultation to develop this Agreement pursuant to 36 CFR § 800.6.(a)(1)(iii); and

WHEREAS, Caltrans does not have access to certain parcels within the APE and project design elements such as utility realignments are incomplete, Caltrans will finalize identification and evaluation of historic properties once access is gained and prior to authorization of any construction activities; and

WHEREAS, Caltrans on behalf of the FHWA, in consultation with the SHPO and BLM has determined that because identification and evaluation of historic properties is incomplete, preparation of this Agreement is the appropriate means to ensure completion of the phased identification of historic properties within the Undertaking's APE, and to provide for the resolution of any adverse effects on identified historic properties subsequent to its approval of the Undertaking;

WHEREAS, Caltrans and FHWA have initiated consultation with the Big Pine Paiute Tribe of Owens Valley, the Bishop Paiute Tribe, the Fort Independence Community of Paiute, the Lone Pine Paiute-Shoshone Tribe and the Timbisha Shoshone Tribe (Tribes) regarding the Undertaking and its possible effects on historic properties; will continue to consult with them and will afford them, should they so desire, the further opportunity to more directly and actively participate in the implementation of the Undertaking itself and this Agreement in their role as consulting parties for purposes of 36 CFR § 800.2(c) and as concurring parties for purposes of 36 CFR §800.6(c)(3), should they so desire, to this Agreement; and

NOW, THEREFORE, the FHWA, BLM, SHPO, and ACHP agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties, and further agree that these stipulations shall govern the Undertaking and all of its parts until this Agreement expires or is terminated.

STIPULATIONS

FHWA shall ensure that the following stipulations are carried out prior to taking any action that could have an effect on properties listed on or eligible for the National Register of Historic Places (NRHP).

I. DEFINITIONS

The definitions provided at 36 CFR § 800.16 are applicable throughout this Agreement.

II. PROFESSIONAL QUALIFICATIONS AND DOCUMENTATION STANDARDS

A. Professional Qualifications

Caltrans shall ensure that all actions carried out pursuant to this Agreement are completed by or under the direct supervision of a person or persons, meeting at a minimum the Secretary of Interior's Professional Qualifications Standards (48 FR 44738-44739, September 29, 1983) in the appropriate disciplines. Nothing in this Stipulation may be interpreted to preclude any agent or contractor thereof from using the properly supervised services of persons who do not meet the Standards.

B. Documentation Standards

Caltrans shall ensure that all final cultural resources reports resulting from actions pursuant to this Agreement are designed to meet the documentation requirements under 36 CFR § 800.11 and the Secretary of Interior's *Standards and Guidelines for Archeology and Historic Preservation*, and that they are responsive to contemporary professional standards and are in accordance with the 2014 PA, the Caltrans Standard Environmental Reference, Volume 2 - Cultural Resources, the BLM Manual § 8150 and applicable ACHP and OHP guidance .

C. Curation and Curation Standards

Caltrans shall ensure that, to the extent permitted under § 5097.98 and § 5097.991 of the California Public Resources Code and the Native American Graves Protection and Repatriation Act (NAGPRA) [25 USC 3001-3013] and its implementing regulations (43 CFR Part 10), the materials and records resulting from the activities presented by this Agreement are curated in accordance with 36 CFR §79 and BLM Manual § 8150. Caltrans and BLM shall ensure that the views of the consulting parties are taken into consideration prior to decisions being made about the final disposition of archaeological materials resulting from activities prescribed by this Agreement.

III. AREA OF POTENTIAL EFFECTS

A. Caltrans, in consultation with SHPO determined and documented the APE for the Undertaking, in accordance with Stipulations VI.B.8 and VIII.A and Attachment 3 of the 2014 PA. The Undertaking's APE is depicted in Attachment A to this Agreement. The APE, as currently defined, encompasses an area sufficient to accommodate all proposed components of the preferred alternative as of the date of execution of this Agreement.

B. If Caltrans determines APE revision necessary, Caltrans shall inform the consulting parties of the revisions and consult for no more than 15 days to reach agreement on the proposed revisions. The revised APE and supporting documentation shall be incorporated into Attachment A to this Agreement.

C. The APE may be revised in consultation with BLM, FHWA, and SHPO without amending this Agreement.

D. Any party to this Agreement may propose modification of the APE. Caltrans shall notify the parties to this Agreement of the proposal and consult for no more than 15 days to reach agreement on the proposal. The revised APE and supporting documentation shall be incorporated into Attachment A to this Agreement.

E. Any geographic area added to the APE as a result of revisions in accordance with this stipulation shall be addressed under Stipulation V of this Agreement.

IV. TRIBAL CONSULTATION

A. Caltrans, on behalf of FHWA, shall be responsible for coordination of consultation with Indian Tribes. This shall include provision of updates on a quarterly basis, or other timetable as agreed by the consulting parties, in regard to progress made or actions taken under this Agreement.

B. Notwithstanding any other provision of this Agreement, FHWA and the BLM shall honor the request of any Indian tribe for government to government consultation regarding this Undertaking or actions taken under this Agreement. If a tribal request for government to government consultation with the federal government comes to Caltrans, Caltrans shall immediately inform the FHWA and BLM. If any Indian tribe requests government to government consultation with the FHWA or BLM, FHWA or BLM shall conduct the government to government consultation, and, if the Indian tribe agrees, involve Caltrans in the consultation process. Caltrans shall continue to carry out the remainder of its responsibilities under this Agreement that are not the subject of government to government consultation.

C. Agency and Tribal Points of Contact

1. Caltrans District 9 Native American Coordinator will serve as the primary point of contact for all aspects of the tribal consultation process.
2. The FHWA point of contact for correspondence shall be the California Division South Team Leader.
3. The BLM points of contact for correspondence shall be the Bishop Office Field Manager and Bishop Office Archaeologist.
4. On behalf of each Tribe, the tribal chairperson or their designee shall be the official point of contact.
5. Attachment B shows pertinent contact information for FHWA, BLM, SHPO, ACHP, Caltrans and the Tribes, and may be updated throughout the life of this Agreement without having to amend the Agreement. Attachment B will be updated as necessary and reviewed for updates every June throughout the life of this Agreement.
6. Caltrans will notify all parties to this Agreement in writing should changes to this arrangement take effect, including changes in agency or tribal contacts.

V. IDENTIFICATION, EVALUATION AND TREATMENT OF HISTORIC PROPERTIES

A. Historic Property Treatment Plan

Caltrans will develop a Historic Property Treatment Plan (HPTP) in consultation with the SHPO, BLM, Tribes, and other consulting parties. The HPTP will address identification and evaluation of historic properties, and ways to avoid, minimize or mitigate adverse effects;

1. The HPTP, at a minimum, shall include, but will not be limited to:
   a) Development of a plan for coordination with the consulting parties during implementation of the HPTP including a communication plan(s), timelines for deliverables, timelines for reviews, and which parties are responsible for deliverables;
   b) Development of an Identification Plan that finalizes identification and documentation of historic properties within the Undertaking's APE, including properties that may be eligible to the NRHP under Criteria A, B, C, and D. These properties could include archaeological sites, traditional cultural properties or traditional cultural landscapes that meet one or more of the criteria for eligibility, or components of a larger Native American traditional cultural landscape.

c) Develop methodologies to define and eliminate to the extent possible the overlap of site boundaries;

d) Design of a Geomorphologic study that will identify the potential for previously unidentified resources and place existing resources in a landscape context;

e) Design of an ethnographic study in cooperation with Tribes to identify, evaluate and assess effects to places and resources, including but not limited to traditional plant or material gathering areas.

f) Methods to identify and protect properties that can reasonably be preserved in conjunction with development of project design details including but not limited to designation of Environmentally Sensitive Areas (ESAs) to be placed on project plans along with specifications for ensuring protection ;

g) Development of an Evaluation Plan that identifies research questions that will form the basis of evaluation tailored to the type and age of cultural resources present and can be applied to the identification and evaluation of as yet unidentified potential historic districts or cultural landscapes to which properties within the APE may contribute;

h) Development of a Mitigation Plan for the implementation of appropriate treatment to mitigate all unavoidable adverse effects;

i) Development of a Tribal Monitoring plan including a training program for tribal monitors specific to the project.

j) Development of a Post Review Discovery Plan for addressing archaeological resources identified subsequent to the execution of this Agreement and reporting and consultation requirements;

k) Development of a Curation Plan which also incorporates processes to enable tribal access to and usage of curated materials;

l) Development of Public Outreach Plan to disseminate study findings to the general public;

m) Development of a program that provides access for scientific studies to the findings and curated data from this Undertaking which encourages incorporation of related studies along the Highway 395 corridor and the surrounding Owens Lake region,

n) Development of a plan for the respectful treatment and disposition of any human remains, associated or unassociated funerary objects, sacred objects or objects of cultural patrimony that may be discovered pursuant to regulations implementing NAGPRA (43 CFR Part 10) and in accordance with California Public Resources Code, Section 5097.98.

2. Historic Properties Treatment Plan (HPTP) Review and Implementation

a) Caltrans will submit a draft of the HPTP to the consulting parties for review. Each Party will have 30 days to review the draft and provide comments to Caltrans. Caltrans will consider the comments provided in preparing the final HPTP. Caltrans will provide a summary of all comments to the SHPO prior to preparing the final HPTP.

b) Within twelve (12) months of the execution of this agreement, Caltrans will submit a final HPTP to the SHPO for approval and submit concurrently, as notification, the final HPTP to FHWA, the ACHP and all consulting parties.

c) Upon SHPO approval, Caltrans will implement the HPTP.

d) Caltrans shall ensure that all necessary mitigation steps requiring fieldwork as outlined in the HPTP are accomplished prior to approval of a ready to list construction contract (RTL). Caltrans shall then provide a summary of completed mitigation activities under the HPTP to all consulting parties for a 30 day review and comment period. Caltrans will not advertise for construction until comments of the consulting parties have been taken into account.

e) Caltrans will, on November 1 of every year this Agreement is in effect, file a report with the consulting parties of activities conducted under the implemented HPTP. The report will contain a detailed summary of any cultural resources work conducted during the preceding year; if no work was completed, a letter from Caltrans will be prepared to that effect to satisfy the intent of this stipulation.

VI. INTERIM TREATMENT OF HISTORIC PROPERTIES

After execution of this Agreement but prior to approval of the HPTP, project activities with the potential to affect historic properties shall be fully evaluated in accordance with the NHPA. Activities which would result in a finding of adverse effect shall not proceed until completion of the HPTP.

VII. NATIVE AMERICAN CONSULTATION

Caltrans and FHWA are consulting with the Lone Pine Paiute-Shoshone Tribe, the Fort Independence Community of Paiute Tribe, the Big Pine Paiute Tribe of Owens Valley, the Bishop Paiute Tribe and the Timbisha Shoshone Tribe regarding the proposed Undertaking and its effects on historic properties. If other tribes or Native American groups who attach religious or cultural significance to historic properties that may be affected by the Undertaking are identified, Caltrans on behalf of FHWA will invite them to participate as consulting parties as the section 106 process moves forward.

VIII. ADMINISTRATIVE PROVISIONS

A. Confidentiality

The parties to this Agreement acknowledge that historic properties covered by this Agreement are subject to the provisions of Section 304 of the NHPA, Archaeological Resources Protection Act (ARPA) regulations 43 CFR § 7.18, and Section 6254.10 the California Government Code relating to the disclosure of archaeological site information and information obtained in consultation with Tribes, and Section 6254(r) of the California Government Code regarding records of certain Native American places, having so acknowledged, will ensure that all actions and documentation prescribed are consistent with those provisions.

B. Dispute Resolution

1. If at any time during implementation of this Agreement, any signatory or concurring party objects to any action or failure to act pursuant to this Agreement, they may file written objections with FHWA. FHWA will notify all signatories of the objection in writing within 48 hours of the objection. The FHWA will consult with the objecting party and with other parties as appropriate to resolve the objection.
2. If FHWA determines that the objection cannot be resolved, the FHWA will forward all documentation relevant to the dispute, including the FHWA's proposed resolution, to the ACHP, and request comment.
3. The ACHP shall provide FHWA with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. FHWA will then proceed according to its final decision.
4. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period FHWA may make a final decision on the dispute and proceed accordingly.
5. The FHWA's responsibility to carry out actions under this Agreement, the HPTP and the Agreement that are not subject to dispute will be unaffected by the dispute.

C. Amendment and Termination of this Agreement

1. This Agreement may be amended when such amendment is agreed on by all signatories. A resultant amendment will be effective on the date a copy is signed by all of the signatories.
2. If any signatory to this Agreement determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation VIII.C.1 above. If within thirty (30) days an amendment cannot be reached, any signatory may terminate the Agreement upon written notification to the other signatories. The FHWA will seek comments from the consulting parties on the proposed termination during the 30-days notice period.
3. Once the Agreement is terminated, and prior to work continuing on the Undertaking, FHWA must either:
   a) Execute an Memorandum of Agreement or Programmatic Agreement pursuant to 36 CFR 800.6, or
   b) Request, take into account, and respond to the comments of the ACHP pursuant to 36 CFR 800.7. FHWA shall notify the parties to this Agreement as to the course of action it will pursue.

IX. DURATION OF THE AGREEMENT

A. Following its execution, unless terminated pursuant to section VIII of this Agreement or superseded by amendment, this Agreement will terminate and have no further force or effect

on the day the signatory parties all concur in writing that all stipulations of this Agreement have been satisfactorily fulfilled.

B. If the Undertaking has not been implemented within ten (10) years following execution of this Agreement, the Agreement will automatically terminate and have no further force or effect. Prior to such time, Caltrans may consult with the other consulting parties to reconsider the terms of the Agreement and extend its duration through amendment. If not amended, Caltrans shall notify the other signatories in writing and, if it chooses to continue with the Undertaking, shall reinitiate review of the Undertaking in accordance with 36 CFR Part 800, the 2014 PA, or another applicable PA executed under 36 CFR 800.14(b).

X. EFFECTIVE DATE

This Agreement will take effect on the date that it has been executed by FHWA, the BLM, the ACHP, and the SHPO.

EXECUTION of this Agreement by FHWA, the BLM, the SHPO, and the ACHP, and subsequent implementation of its terms, shall evidence that FHWA has taken into account the effects of the Undertaking on historic properties for the Undertaking and that FHWA has afforded the ACHP an opportunity to comment on the Undertaking and its effects on historic properties.

Attachment B
Olancha-Cartago Agency and Tribal Contacts

Dave Tedrick, FHWA
650 Capitol Mall, Ste. 4-100
Sacramento, CA 95814
916-498-5024
david.tedrick@dot.gov

Steve Nelson, BLM Field Manager
Greg Haverstock, BLM Archaeologist
Bishop Field Office
351 Pacu Lane, Suite 100
Bishop, CA 93514
760-872-5000; 760-872-5030
snelson@blm.gov; ghaverst@blm.gov

Carol Legard, ACHP
401 F Street NW, Suite 308
Washington, DC 20001-2637
202-517-0214
clegard@achp.gov

Kim Tanksley, OHP
1725 23rd Street, Suite 100
Sacramento, CA 95816
916-445-7035
Kim.Tanksley@parks.ca.gov

Angie Calloway, Caltrans District 9
500 South Main Street
Bishop, CA 93514
760-872-0692
angie.calloway@dot.ca.gov

Ashley Blythe, BLM Archaeologist
Ridgecrest Field Office
300 S. Richmond Road
Ridgecrest, CA
760-384-5424
ablythe@blm.gov

Big Pine Paiute Tribe of the Owens Valley
Genevieve Jones, Chairwoman
Bill Helmer, THPO
P.O. Box 700
Big Pine, CA 93513
760-938-2003
g.jones@BigPinePaiute.org
b.helmer@BigPinePaiute.org

Bishop Paiute Tribe
Dale Delgado, Jr., Chairman
Raymond Andrews, THPO
50 Tu Su Lane
Bishop, CA 93514
760-873-3584
dale.delgado@bishoppaiute.org
raymond.andrews@bishoppaiute.org

Fort Independence Community of Paiute
Wendy Stine, Chairwoman
Priscilla Naylor, THPO
P.O. Box 67
Independence, CA 93526
760-878-5160
w.stine@fortindependence.org
p.naylor@fortindependence.org

Lone Pine Shoshone Paiute Tribe
Mary Wuester, Chairperson
Kathy Jefferson Bancroft, THPO
P.O. Box 747
Lone Pine, CA 93545
760-876-1034
chair@lppsr.org
kbncrft@yahoo.com

Timbisha Shoshone Paiute
George Gholson, Chairperson
P.O. Box 1779
Bishop, CA 93515
760- 872-3614
george@timbisha.org
Barbara Durham, THPO
P.O. Box 358
Death Valley, CA 92328
thpo@timbisha.org
760-786-9002

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, THE BUREAU OF LAND MANAGEMENT, THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION REGARDING THE OLANCHA-CARTAGO FOUR-LANE PROJECT, INYO COUNTY, CALIFORNIA

SIGNATORY PARTIES

Federal Highway Administration

By: _____ Date: 7/16/14
Vincent Mammano, California Division Administrator

Bureau of Land Management

By: _____ Date: 7/23/2014
James G. Kenna, California State Director

California State Historic Preservation Officer

By: _____ Date: 6-27-14
Carol Roland-Nawi, State Historic Preservation Officer

Advisory Council on Historic Preservation

By: _____ Date: 7/25/14
John M. Fowler, Executive Director

Appendix L Finding of Effect

Caltrans, on behalf of the Federal Highway Administration

Finding of Adverse Effect

for
The Olancha/Cartago Four-lane Project
Inyo County, California

09-INY-395, PM 29.2/41.8
09-0000-0030 (09-21340)

FHWA100211B

Prepared for:
Mrs. Susan Schilder-Thomas, Senior EP, CDBC

Prepared by Caltrans PQS:
Brian R Gassner, Associate EP
855 M Street, Suite 200
Fresno, CA 93721

3/25/2014

Caltrans PQS review by:
Glenn Gmoser, Senior EP
1120 N Street
Sacramento, CA 94273

4/07/2014

March 2014

Introduction

The Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans) are proposing a new alignment of U.S. Highway 395 in Inyo County. The new alignment will replace existing 395 between postmiles (PM) 29 and 42 west and south of Owens Lake (Attachment 1, Figures 1 and 2). The nature of the proposed activities and involvement of federal funds and use of federal land require compliance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations (36 CFR 800, revised 2004) which mandates public agencies to consider the effects of projects on historic properties. Compliance with Section 106 is being carried out in accordance with the January 2014, *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (2014 PA).

While environmental review, consultation, and other action required in accordance with applicable Federal environmental laws for this project is not assigned to Caltrans pursuant to 23 U.S.C. 327, Caltrans is acting on behalf of the FHWA for purposes of compliance with Section 106 in accordance with the terms of the 2014 PA. Since the Bureau of Land Management controls a significant portion of the land to be used for this project, and will retain administrative control over that land, this document also serves to fulfill certain Bureau of Land Management (BLM) responsibilities under Section 106. In accordance with the Memorandum of Understanding (MOU) signed by the FHWA, Caltrans and the BLM, the BLM designates FHWA the lead agency for this Undertaking pursuant to 36 CFR 800.2(a)(2) and Stipulation I.D of the PA.

FHWA and Caltrans have consulted with the BLM Ridgecrest and Bishop Field Offices, and are in consultation with the Lone Pine Paiute-Shoshone Tribe, the Fort Independence Paiute Tribe, the Big Pine Paiute Tribe, the Bishop Paiute Tribe and the Timbi-sha Shoshone Tribe.

Caltrans initiated consultation with the SHPO in 2004 with a Historic Property Survey Report that established the project as an Undertaking and documented Caltrans' historic property identification and evaluation effort within the Area of Potential Effects (APE) as defined at that time. This initial work studied five build alternative identified as Alternative 1, Alternative 2, Alternative 2A, Alternative 3, and Alternative 3A (Attachment 3, SHPO 2004). Consultation continued in 2010 with a Supplemental Historic Property Survey Report that documented Caltrans continuing identification and evaluation in a revised APE, focusing on a sixth alternative, identified as Alternative 4 (Attachment 3, SHPO 2010). Caltrans continued consultation with the SHPO in August of 2013 with the submission of the *Archaeological Survey Report for the Olancha-Cartago Four-Lane Project, Alternative 4/3 Caltrans District 9, Inyo County*, which solely focuses study on an appropriately revised APE encompassing our National Environmental Policy Act (NEPA) preferred alternative, identified as Alternative 4/3. The 2013 submission noted

the culmination of our surface and archival identification effort and requested further consultation on proceeding with the Undertaking (Attachment 3, SHPO 2013).

An assessment of the potential effect likely to be caused by any particular alternative indicates that regardless of which alternative is chosen, the Undertaking will be unable to avoid adverse effects to historic properties. This finding focuses on the properties within the APE of the proposed preferred alternative, Alternative 4/3 (Attachment 1, Preferred Alternative Map and Attachment 2). Caltrans identified 106 archaeological sites in the APE of Alternative 4/3, eight of which have been previously determined eligible, by consensus, for inclusion in the National Register of Historic Places (NRHP) under Criterion D. In accordance with Stipulation IX.B of the PA, Caltrans found the Undertaking may affect historic properties. Applying the Criteria of Adverse Effect in accordance with Stipulations IX.B and X. Caltrans is proposing to FHWA, pursuant to Stipulation X.C, that adverse effects cannot be avoided.

In accordance with Stipulation X.C.(1)(a) of the PA, Caltrans, as delegated by FHWA, has determined that the Undertaking will have an adverse effect on historic properties and will consult SHPO regarding the resolution of adverse effects pursuant to Stipulation XI of the PA, 36 CFR 800.6(a), and 800.6(b)(1). Caltrans is proposing that the adverse effects will be resolved as described in a proposed draft project specific Programmatic Agreement(see attached).

Description of the Undertaking

The FHWA and Caltrans are planning a new alignment of U.S. Highway 395 near the communities of Olancha and Cartago in Inyo County. The planned four-lane expressway will replace the existing two-lane conventional highway between PM 29 and 42 creating continuity with the existing expressway alignments north and south of the project area (FOE Attachment 1,-Figures 1 and 2). The new alignment, referred to as Alternative 4/3, is proposed through FHWA and Caltrans' NEPA process as the Preferred Alternative (FOE Attachment 1- Preferred Alternative Map).

In accordance with Stipulation VIII.A and Attachment 3 of the PA, Caltrans has determined the APE for the Undertaking. The APE includes all existing and proposed right-of-way, and temporary easements; and all indentified potential properties that are within, partially within, or directly adjacent to existing and proposed right-of-way and temporary easements of Alternative 4/3. The map documenting the APE is attached to this finding (FOE Attachment 2).

Alternative 4/3 begins at approximately PM 29 near the end of the existing expressway section of U.S. Highway 395. The new alignment diverges to the northwest from the existing and continues roughly 5 miles at which point the road bends due north towards the community of Cartago. North of Cartago the new alignment rejoins existing U.S. Highway 395. Olancha Creek, Cartago Creek and Braley Creek, will be crossed by the new alignment.

Design elements of the new separated expressway include standard lanes and paved shoulders, new culverts and drainage, bridges and minor electrical systems. Utilities in conflict with the design require relocation. Although detailed data concerning the relocations is not available in part because final design and planning for utility relocations is not in Caltrans' control, the APE has been drawn to account for anticipated relocation needs. Any relocation that occurs outside the APE will be subject to additional consultation. The north and south-bound alignments will be approximately 40-feet wide from edge-of-pavement to edge-of-pavement. The greatest fill slopes extend an additional 60 feet, and the greatest cut slopes extend nearly 100 feet. A potential material site and two potential staging areas are included in the APE. The APE encompasses approximately 1982 acres; about 40% of that area, 793 acres, is within a recorded cultural resource. The entire APE is subject to disturbance from grading or other construction related activity.

Coming from the south existing U.S. Highway 395 will become State Route 190 into Olancha where it meets the existing State Route 190. From the current State Route 190 intersection north to approximately PM 39, existing U.S. Highway 395 will be relinquished to Inyo County. North of PM 39 existing alignment of U.S. Highway 395 becomes incorporated into the existing expressway.

Consultation History

Throughout the project Caltrans has been sharing information with the Lone Pine Reservation. Since the completion of the 2013 identification work we have continued to share our progress with them and other tribes we identified that might have an interest in the Undertaking. FHWA has also contacted the Fort Independence Paiute Tribe, the Big Pine Paiute Tribe, the Bishop Paiute Tribe, the Timbi-sha Tribe, the Bridgeport Indian Colony, and the Utu Utu Paiute tribe. The Bridgeport Indian Colony Environmental Director directed FHWA to the Lone Pine Paiute-Shoshone Tribe. The Utu Utu Gwaitu Paiute Tribe has not responded to attempts to contact them.
On February 11 and March 17 2014 Caltrans met with representatives of the Big Pine Paiute Tribe, the Timbi-sha Tribe, the Lone Pine Paiute-Shoshone Tribe, the Bishop Paiute Tribe and the Fort Independence Paiute Tribe (Tribes) to update them on the status of the project in general, including an update of Section 106 compliance efforts and to discuss an earlier draft of this Finding of Effect.

Caltrans initiated consultation with the SHPO on the Olancha/Cartago widening in March 2004, with *the Historic Properties Survey Report Olancha/Cartago Four-Lane Project, US Route 395 Inyo County, California* (Ryan 2004). Ryan's Historic Property Survey Report (HPSR) summarizes several years of built environment, archaeological and ethnographic studies covering the initial APE that included five alternatives, identified as Alternative 1, Alternative 2, Alternative 2A, Alternative 3, and Alternative 3A. Ryan reported on CSU, Bakersfield's resources survey which recorded 51 archaeological sites, Byrd's excavation of 17 prehistoric archaeological sites to assess their eligibility for inclusion in the NRHP, summarized Dodd's 2003 Historical Architectural Survey Report which examined 87 buildings, and reported the results of

Baxter and Allen's 2003 Historic Study Report which evaluated 10 historical archaeological sites. The HPSR also provides in a confidential appendix cultural information and general locations of cultural activities within and adjacent the APE provided by an elder from the Lone Pine Paiute Shoshone Tribe (Davis-King, 2003). The SHPO concurred with Caltrans' determinations that 8 archaeological sites and one building are eligible for the NRHP (FHWA 040408A).

In December 2006 District 9 Archaeologist Tom Mills conducted archaeological survey on 41 acres added to the original APE. Mills documented his survey work in an Addendum Archaeological Survey Report-Negative Findings which he summarizes in a Supplemental Historic Property Survey Report written "to file" (Mills 2006).

Consultation continued in 2010 when a sixth alternative, identified as Alternative 4, was added to the Undertaking. Mill's Supplemental Historic Property Survey Report (Mills 2010) reported 100 archaeological sites some of which had also been discussed in the 2003 HPSR. The SHPO concurred that one site was previously determined eligible, six sites would be eligible for the purposes of the Undertaking pursuant to the 2004 PA, and that consultation would continue on 24 sites (FHWA100211B). As a point of record keeping, please note that while Mills stated in his transmittal letter that Caltrans was initiating consultation with the SHPO regarding the Undertaking, in fact, Mills was continuing consultation which began in 2004. As a result this Undertaking has two SHPO identification numbers, FHWA 040408A and FHWA100211B.

In 2011 Caltrans proposed a preferred alternative as part of the NEPA process. The preferred alternative combined segments of two studied alternatives, Alternative 4 south of Olancha Creek and Alternative 3 north of Olancha Creek, into a single route identified as Alternative 4/3. The NEPA alternative decision prompted revision of the APE which in turn necessitated additional work to identify historic properties. The result of that work is detailed in the 2013 Archaeological Survey Report (ASR). While the report focuses on areas of the APE that have not been examined in previous investigations, it thoroughly addresses the entire APE as defined at that time. The 2013 submission represents the culmination of our surface identification effort and requests consultation on proceeding with the Undertaking. A more detailed history of Caltrans' consultation on this Undertaking can be found in the 2013 ASR (Shapiro 2013).

The 2013 ASR details the resources in the APE, and in the process illuminates the unintended consequences of years of identification and recordation by many agencies and their consultants. The inventory identified 94 archaeological sites in the APE: 38 prehistoric, 37 historical and 19 sites with both prehistoric and historical elements.

During the course of finalizing the inventory for the preferred alternative, the BLM noted that site distribution in the APE was problematic and requested Caltrans reexamine their methods prior to moving forward. Specifically, the BLM was concerned about areas in the APE characterized by sites recorded in close proximity or adjacent to each other with little or no break in surface cultural material, and sites recorded partially or completely within the boundaries of other sites. The BLM asserted these clusters of

archaeological sites should be sorted out prior to evaluating sites for the NRHP because in certain instances the recordation is further complicated by sites with differing eligibility determinations being directly adjacent to one another or completely within the recorded limits of another. The discussions that ensued between the BLM, FHWA and Caltrans culminated in a procedural Memorandum of Understanding that defined roles and responsibilities for all parties, set review times for compliance documents and established the BLM as a consulting party pursuant to Section 106. The BLM's involvement also prompted FHWA's increased involvement in the Undertaking especially in coordinating with Native American tribes.

Description of Historic Properties

Caltrans PQS amended the APE after the distribution of the 2013 ASR to the consulting parties. Key changes to the APE include the addition of existing US Highway 395 and its associated right-of-way (ROW) and encompassing all known sites that were in or directly adjacent to the 2013 ASR APE. Revising the APE added 12 archaeological sites to the total from the survey. There are currently 106 potential properties identified within the APE. There are no built-environment properties in the APE. The APE contains a nearly continuous distribution of prehistoric and historical archaeological resources. Data available at this time indicates roughly 40 percent (40%) of the area of the APE is part of a cultural resource. Resource density varies from moderate to high with only a few regions seemingly void of recorded archaeological resources. Lower density areas include the northern two miles of the APE and intermittent areas throughout the southern half of the APE. High density areas are characterized by archaeological sites recorded in close proximity or adjacent to each other with little or no break in surface cultural material, and sites recorded partially or completely within the boundaries of other sites. In certain instances this is complicated by sites with differing eligibility determinations being directly adjacent to one another or completely within the recorded limits of another.

Forty-four archaeological sites have previous eligibility determinations (8 eligible, 36 ineligible) with concurrence by the SHPO. Six sites have previous eligibility recommendations (two recommended eligible, four recommended ineligible). Fifty-one sites are unevaluated, and the remaining five sites are multi-component for which previous evaluations are component-specific or pertain to only a portion of the site. The eight known properties in the APE are eligible for the National Register under criterion D, their potential to provide useful data. Existing determinations of ineligibility are not considered at this time. As part of our effort to resolve the problems created by overlapping site boundaries we will review all previous determinations of ineligibility as part of further evaluations and consultation with the Tribes and SHPO.

The eight archaeological sites previously determined eligible by consensus are:

- CA-INY-43, a prehistoric habitation site with two loci containing numerous milling features, obsidian debitage and tools, Owens Valley Brownware, portable groundstone, midden and glass beads.

- CA-INY-1317/H, an extremely large, multi-component prehistoric occupation site with milling features, rock art, rock rings, midden deposits, and extensive scatters of flaked stone, ground stone, shell and glass trade beads and human remains.
- CA-INY-5350H, a historic refuse scatter representing the Cartago townsite dump. This is a historical/modern dump with primarily domestic material including food and beverage containers, tableware, flatware, furniture, appliances, personal items and automobile parts. The site includes eight discrete loci with artifacts ranging in age from 1880 to modern times.
- CA-INY-5967, a high-density obsidian flaked stone and tool scatter; test excavations uncovered hearth and pit feature.
- CA-INY-6021, a prehistoric habitation site with surficial flaked stone, Owens Valley Brownware, milling features, midden and five house pit depressions. Test excavations uncovered two hearths/floor features. Human remains have also been reported.
- CA-INY-6023, a prehistoric habitation site with high density obsidian flaked stone scatter, numerous milling features, midden, Owens Valley Brownware, beads and two possible house pit depressions.
- CA-INY-7741H, a construction workcamp associated with the Los Angeles Aqueduct this complex historic site is defined by a scatter of historic refuse over a large area, dumps, a pit, and cellar depression.
- CA-INY-7743H, a construction workcamp associated with either the Los Angeles Aqueduct or Southern Pacific Railroad. A widespread, diffuse scatter with relatively abundant cultural constituents focused in time period and activities.

While these sites have been determined eligible under criterion D for their information potential, Caltrans also recognizes they may be considered under other criteria as well, notably for the sites with known burials and will conduct further consultations with the Tribes regarding this status.

Dodd (2003) found the Olancha Schoolhouse eligible for the National Register under Criterion A, however, it is no longer in the APE. The building is southwest of the intersection of existing U.S. Highway 395 and State Route 190, outside State right-of-way.

Not including the eight eligible sites, Caltrans is evaluating or reevaluating effects to 98 potential properties. Many of the sites have existing consensus determinations of ineligibility which will be reevaluated. Caltrans has been coordinating with the BLM to investigate the possibility that some of the intense resource areas already identified might be best represented in terms of a district or landscape. Consultation with the BLM and the SHPO has demonstrated an agreement to pursue this course. It is also broadly accepted among the consulting parties that the Undertaking has the potential to affect other historic properties, including buried historic properties, yet unidentified. The nature of potential effects is varied in scale and intensity over the project area, but given the scope of the Undertaking, will result in destruction of a portion of the archaeological record through earth-moving activities required to construct the project. The broad themes of research that may be addressed through study of these sites, and by extension information potential that could be lost, include: paleoenvironmental

reconstruction, cultural chronology, settlement and mobility, lithic manufacturing, toolstone procurement, technological organization, subsistence intensification, economics, social politics, site formation/landscape formation, historic period Native American adaptations, historic period settlement and townsite development, and construction of the LA aqueduct and Southern Pacific railroad. Consultation with the Tribes is likely to identify other values that that will require consideration when determining NHRP status, effects and resolution of effects.

Application of Criteria of Effect

The potential for adverse effects to historic properties is assessed in accordance with the definition for the criteria of adverse effect outlined in 36 CFR 800.5(a)(1): An adverse effect is found when an Undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Caltrans proposes that the Undertaking is unable to avoid adverse effects to historic properties in the APE. Caltrans expects several other, yet unidentified, properties will also be subject to unavoidable effects by the Undertaking. Caltrans anticipates the nature of adverse effects include, but not be limited to the physical destruction of or damage to all or parts of properties. The effects will be the direct result of construction activity ranging from surface scrapping/preparation throughout the APE to deep cuts that have the potential to completely eliminate a property. Where the expressway will be built above grade, properties may be subject to burial under fill; however, even in these situations, extensive surface scrapping and ground preparation is expected. Therefore, properties in the footprint of the Undertaking would potentially have at least some of their data destroyed. These effects may also be considered cumulative due to the effects to related resources from previous, ongoing or anticipated projects in the Owens Valley and along the 395 corridor. These include earlier transportation projects related to widening of Highway 395, fiber optics installations, solar project development and dust abatement projects.

Applying the Criteria of Adverse Effect in accordance with Stipulations IX.B and X, Caltrans has proposed, pursuant to Stipulation X.C, that adverse effects cannot be avoided. Therefore, Caltrans finds the Undertaking will have an Adverse Effect on Historic Properties.

Proposed Mitigation Measures

FHWA proposes to resolve the adverse effects through development and implementation of a Historic Properties Treatment Plan under a project specific Programmatic Agreement (PA) among the FHWA, the BLM and the SHPO, and developed in consultation with Tribes and other consulting parties. The plan will outline the methods and timing Caltrans will use to insure a complete inventory, evaluation and treatment of historic properties within the APE. Specific aspects addressed will include,

but won't be limited to, frequent consultation with Tribes and other consulting parties, methods to eliminate to the extent possible the overlap of site boundaries, implementation of a geomorphologic study to identify sensitivity for buried resources, consultation with the SHPO concerning the NRHP eligibility of potential properties, methods to identify and protect properties that can reasonably be preserved in conjunction with development of project design details, and a research design or plan for the mitigation, analysis and sharing of study results for properties which cannot be avoided, including integration of those results into a synthesis that can inform ongoing management of cultural resources in the project area and surrounding region to address cumulative and indirect effects.

Conclusions

This finding of effects document for the Olancha/Cartago Four-Lane Project has been prepared in compliance with the 2014 PA and 36 CFR 800. Construction of the new U.S. Highway 395 alignment will directly impact known historic properties resulting in the destruction of portions of those properties. The project cannot be redesigned in a way that reduces the extent of impacts to historic properties. Therefore, Caltrans finds that the project will adversely affect historic properties, pursuant to Stipulation X.C of the 2014 PA. FHWA and Caltrans propose to resolve adverse effects pursuant to Stipulation XI of the 2014 PA by entering into project specific programmatic agreement with the BLM and the SHPO.

References Cited

Baxter, R.S., and R. Allen
2003 *Historic Study Report, Olancha/Cartago Four-Lane Project, U.S. Route 395, Inyo County, California.* Prepared by Past forward, Inc., Richmond, California. Prepared for ASM Affiliates, Inc., Encinitas, California. Submitted to the Department of Transportation, Fresno, California.

Byrd, B.F., M. Hale, R.S. Anderson, M.S. Becker, M. Burton, P. Goldberg, R.I. Macphail, C. O'Neill, T. Origer, S.N. Reddy, J. Schaefer, M.S. Shackley, S.J. Smith, S. Stine, T.A. Wake, and R. Yohe II
2003 *Lacustrine Lifestyle Along Owens Lake: NRHP Evaluation of 15 Prehistoric Sites for the Olancha/Cartago Four-Lane Project, U.S. Route 395, Inyo County, California.* Prepared by ASM Affiliates, Inc., Encinitas, California. Prepared for the Department of Transportation, Fresno, California.

Dodd, D.W.
2003 *Historical Architectural Survey Report, Olancha-Cartago Four-Lane Project, U.S. Route 395, Inyo County, California.* Prepared for the Department of Transportation, Fresno, California.

Davis-King, S., and L. Johnson
2003 *Participants and Observers: Perspectives on Historic Native American Information From Independence to Haiwee Reservoir in Owens Valley for the Olancha/Cartago Four-Lane Project, U.S. Route 395, Inyo County, California.* Prepared by Davis-King Associates, Inc., Standard, California. Prepared for ASM Affiliates, Inc., Encinitas, California. Submitted to the Department of Transportation, Fresno, California.

Mills, Tom
2006 *Supplemental Historic Property Survey Report to File, Olancha/Cartago Four-Lane Project, US Route 395 Inyo County, California.* Prepared by the Eastern Sierra Environmental Branch, California Department of Transportation, Bishop, California. On File.

2009 *Supplemental Historic Property Survey Report, Olancha/Cartago Four-Lane Project, US Route 395 Inyo County, California.* Prepared by the Eastern Sierra Environmental Branch, California Department of Transportation, Bishop, California. On File.

Parr, R.E., R.S. Baxter, M. Des Lauriers, C. Garcia-Des Lauriers, J. Gardner, and R.M. Yohe II
2001 *Archaeological Survey Report, Cartago-Olancha Four-Lane Project, U.S. Route 395, Inyo County, California.* Prepared by the Center for Archaeological Research, California State University, Bakersfield. Prepared for the Department of Transportation, Fresno, California

Ryan, Christopher
2003 *Historic Property Survey Report, Olancha/Cartago Four-Lane Project, US Route 395 Inyo County, California.* Prepared by the Central California Cultural Resources Branch, California Department of Transportation, Fresno, California. On File.

Shapiro, Lisa, Robert Jackson, Graham Dalldorf, and Amy Kovak with Julia Costello
2013 *Archaeological Survey Report for the Olancha-Cartago Four-Lane Project, Alternative 4/3 in Owens Valley, Inyo County, California.* Prepared by Pacific Legacy, Inc., El Dorado Hills, California. Prepared for California Department of Transportation, District 9, Environmental Planning, Bishop, California.

Appendix M SHPO Finding of Effect Concurrence

STATE OF CALIFORNIA – THE RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

May 19, 2014 Reply in Reference To: FHWA100211B

Anmarie Medin
Chief, Cultural Studies Office
Division of Environmental Analysis
California Department of Transportation
P.O. Box 942873, MS-27
Sacramento, CA 94273-0001

RE: Olancha-Cartago 4-Lane Project; Finding of Effect, March 2014.

Dear Ms. Medin:

Thank you for your letter of July 10, 2013, continuing consultation regarding the above noted undertaking in accordance with the *Programmatic Agreement* (PA) *Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA). You have submitted the following document for my review and comment:

- *Finding of Adverse Effect for the Olancha/Cartago Four-lane Project; Inyo County, California; 09-INY-395, PM29.2/41.8;09-000-0030 (09-21340)* (Gassner March 2014)

Caltrans, on behalf of FHWA, identified 106 archaeological sites in the Area of Potential Effect (APE) for the project. Eight of these sites have been determined eligible for inclusion in the National Register of Historic Places (NRHP) under Criterion D through previous consultation on this undertaking. These sites are:

- CA-INY-43
- CA-INY-1317/H
- CA-INY-5350H
- CA-INY-5967
- CA-INY-6021
- CA-INY-6023
- CA-INY-7741H
- CA-INY-7743H

The assessment of the potential impacts indicates that regardless of which alternative is chosen, the undertaking will be unable to avoid adverse effects to historic properties. The *Finding of Affect*, in the document submitted, focuses on the properties within the APE of the preferred alternative; Alternative 4/3. Caltrans proposes to resolve the adverse effects through development and implementation of a Historic Properties Treatment Plan (HPTP) under a project specific Programmatic Agreement (PA). The HPTP and PA will be developed and executed between the Federal Highway Administration, Bureau of Land Management, Caltrans, myself and any invited or concurring signatories. The plan will detail the methods and timing Caltrans will use to ensure a complete inventory, evaluation using all four National Register criteria and treatment of historic properties within the APE. Native American consultation has been ongoing. I encourage the

continued consultation with Native American consulting parties in the development of these plans and throughout the project.

Caltrans has determined a *Finding of Adverse Effect* for this project. I concur with this finding and also agree Caltrans should proceed with the development of an HPTP. I look forward to continue consultation and development of the PA implementing the HPTP.

Thank you for considering historic properties as part of your project planning and I look forward to continuing consultation as we work toward these goals. If you have any questions or concerns, please contact State Historian, Natalie Lindquist at (916) 445-7014 or by email at natalie.lindquist@parks.ca.gov.

Sincerely,

Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, PhD
State Historic Preservation Officer

Appendix N Project-Level Conformity Determination

Goewert, Terry@DOT

From: Duane Ono [dono@gbuapcd.org]
Sent: Wednesday, February 26, 2014 11:18 AM
To: Goewert, Terry@DOT
Cc: Schilder-Thomas, Susan M@DOT; 'Ted Schade'; Jan Sudomier
Subject: RE: Resending_FW: Request for Regional Conformity Olancha-Cartago 4 lane widening EA-09-21340_EPA-FHWA-GBUAPCD response requested

Mr. Goewert,
I reviewed the analysis and have no comments. The commitment discussed in Section 2 of the report and the mitigation measures to control dust during the construction phase of the Olancha-Cartago 4-lane project are appropriate and consistent with the transportation conformity requirements for the Owens Valley PM10 nonattainment area. Please call me at (760) 872-8211 if you have any questions.
Sincerely,
Duane Ono
Deputy Air Pollution Control Officer

From: Goewert, Terry@DOT [mailto:terry.goewert@dot.ca.gov]
Sent: Wednesday, February 26, 2014 10:43 AM
To: dono@gbuapcd.org
Cc: Schilder-Thomas, Susan M@DOT
Subject: Resending_FW: Request for Regional Conformity Olancha-Cartago 4 lane widening EA-09-21340_EPA-FHWA-GBUAPCD response requested

Hello, Mr. Ono,

Caltrans would greatly appreciate your response for this. If you have any questions or need clarification, please contact me via email or telephone at 559.445.6426.

Thank you, Terry Goewert

From: Goewert, Terry@DOT
Sent: Monday, February 10, 2014 1:07 PM
To: 'Joseph.Vaughn@dot.gov'; Karina O'Connor; 'dono@gbuapcd.org'; Brady, Mike J@DOT; Andrews, Jim R@DOT; 'tpedersen@inyocounty.us'; Rosander, Gayle J@DOT
Cc: Schilder-Thomas, Susan M@DOT; Zemitis, Cedrik R@DOT; Chegwidden, Ron W@DOT
Subject: Request for Regional Conformity and resumbit of PM10 local hot spot for Olancha-Cartago 4 lane widening EA-09-21340_EPA-FHWA-GBUAPCD response requested

Hello Owens Valley Interagency Consultation Partners:

Please Consider the attached document with 2 purposes:

- Regional Conformity Analysis for the SR 395 Olancha-Cartago 4-Lane Project and;
- A resubmittal, to obtain FHWA concurrence, of the PM10 Hot Spot that was submitted to the group in March 2010. When collecting the documents and history of this project, I realized that FHWA never concurred on the PM10 Hot Spot. EPA did concur (see the last few pages of the attachment for scans of the 2010 emails.
    - The traffic AADTs, percent trucks and project description has not changed since then.

1

Please contact me if you have any further questions or concerns.

A Response is requested, by responding to "all" by February 24, 2014.

Sincerely,

Terry Goewert
Air Quality Specialist-Associate Environmental Planner
Central Region Environmental Engineering
559.445.6426 phone-----fax: 559.445.6236
Address: 855 M Street, Suite 200, Fresno, CA 93721

Goewert, Terry@DOT

From: Stew.Sonnenberg@dot.gov
Sent: Wednesday, February 19, 2014 12:37 PM
To: Goewert, Terry@DOT
Subject: RE: Request for Regional Conformity and resumbit of PM10 local hot spot for Olancha-Cartago 4 lane widening EA-09-21340_EPA-FHWA-GBUAPCD response requested

Hi Terry, FHWA concurs this project is not a POAQC.

Thanks,

Stew Sonnenberg, P.E.
Air Quality Specialist
Federal Highway Administration
California Division
916-498-5889
stew.sonnenberg@dot.gov

From: Vaughn, Joseph (FHWA)
Sent: Tuesday, February 11, 2014 2:35 PM
To: Sonnenberg, Stew (FHWA)
Cc: Terry Goewert (terry.goewert@dot.ca.gov)
Subject: FW: Request for Regional Conformity and resumbit of PM10 local hot spot for Olancha-Cartago 4 lane widening EA-09-21340_EPA-FHWA-GBUAPCD response requested

Stew-per our discussion, looks like this falls in your area. This is a FHWA retained project, ultimate conformity determination will be when we approve the final environmental document. Currently, Caltrans is asking for FHWA concurrence that this not a POAQC. It is my understanding that EPA has already provided their concurrence. AADT discussion starts on page 7. Thanks!

Joseph Vaughn
Air Quality Specialist/MPO Coordinator
FHWA, CA Division
(916) 498-5346

From: Goewert, Terry@DOT [mailto:terry.goewert@dot.ca.gov]
Sent: Monday, February 10, 2014 1:07 PM
To: Vaughn, Joseph (FHWA); Karina O'Connor; dono@gbuapcd.org; Brady, Mike J@DOT; Andrews, Jim R@DOT; tpedersen@inyocounty.us; Rosander, Gayle J@DOT
Cc: Schilder-Thomas, Susan M@DOT; Zemitis, Cedrik R@DOT; Chegwidden, Ron W@DOT
Subject: Request for Regional Conformity and resumbit of PM10 local hot spot for Olancha-Cartago 4 lane widening EA-09-21340_EPA-FHWA-GBUAPCD response requested

Hello Owens Valley Interagency Consultation Partners:

Please Consider the attached document with 2 purposes:

- Regional Conformity Analysis for the SR 395 Olancha-Cartago 4-Lane Project and;
- A resubmittal, to obtain FHWA concurrence, of the PM10 Hot Spot that was submitted to the group in March 2010. When collecting the documents and history of this project, I realized that FHWA never

1

concurred on the PM10 Hot Spot. EPA did concur (see the last few pages of the attachment for scans of the 2010 emails.

- The traffic AADTs, percent trucks and project description has not changed since then.

Please contact me if you have any further questions or concerns.

A Response is requested, by responding to "all" by February 24, 2014.

Sincerely,

Terry Goewert
Air Quality Specialist-Associate Environmental Planner
Central Region Environmental Engineering
559.445.6426 phone-----fax: 559.445.6236
Address: 855 M Street, Suite 200, Fresno, CA 93721

Schilder-Thomas, Susan M@DOT

Subject: FW: Olancha Air
Attachments: Olancha Feb 2014 GBUAPCD_FHWA response.pdf

Susan Schilder-Thomas
Senior Environmental Planner
Central Region Environmental Division
Desk (559) 445-6429
Cell (559) 903-0490

From: Goewert, Terry@DOT
Sent: Wednesday, June 18, 2014 2:19 PM
To: Schilder-Thomas, Susan M@DOT
Subject: Olancha Air

Hi Susan,

The Hot Spot Interagency Consultation process is somewhat informal and I ended up receiving concurring emails from EPA, FHWA and the local Air District. The FHWA and Great Basin Unified Air Pollution Control District's concurrence is attached.

During a phone call with Karina O'Connor on or about February 18, 2014, she stated that there was no change from EPA's opinion concurring with the conformity status of the project on March 22, 2010.

Please let me know if you need anything else for this project,

Terry Goewert

1

Appendix O Notice of Preparation

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

Notice of Preparation

December 9, 2014

To: Reviewing Agencies

Re: Olanchal Cartago Four-Lane
SCH# 2010091023

Attached for your review and comment is the Notice of Preparation (NOP) for the Olanchal Cartago Four-Lane draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Kirsten Helton
California Department of Transportation, District 6
855 M Street Suite 200
Fresno, CA 93721

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH#	**2010091023**
Project Title	Olanchal Cartago Four-Lane
Lead Agency	Caltrans #6
Type	**NOP** Notice of Preparation
Description	The California Department of Transportation (caltrans) proposes to convert approximately 12.6 miles o the existing U.S. Highway 395 from a two-lane conventional highway into a four-lane expressway or partial conventional four-lane highway from post mile 29.2 to postmile 41.8 in Inyo County. Additionally a route adoption is proposed for U.S. Highway 395 and State Route 190.

Lead Agency Contact

Name	Kirsten Helton		
Agency	California Department of Transportation, District 6		
Phone	559 445 6461	***Fax***	
email			
Address	855 M Street Suite 200		
City	Fresno	***State*** CA	***Zip*** 93721

Project Location

County	Inyo		
City			
Region			
Cross Streets	SR-395		
Lat / Long	36° 12' 26" N / 117° 58' 47" W		
Parcel No.			
Township	***Range***	***Section***	***Base***

Proximity to:

Highways	Hwy 395
Airports	
Railways	
Waterways	Los Angeles Aqueduct
Schools	
Land Use	Openspace/Residential/Agriculture

Project Issues	Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Geologic/Seismic; Growth Inducing; Landuse; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Aesthetic/Visual; Agricultural Land; Soil Erosion/Compaction/Grading
Reviewing Agencies	Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 6 (Inyo & Mono Region); Native American Heritage Commission; State Lands Commission; California Highway Patrol; Air Resources Board, Transportation Projects; Department of Toxic Substances Control; Regional Water Quality Control Bd., Region 6 (Victorville)

Date Received 12/09/2014 ***Start of Review*** 12/09/2014 ***End of Review*** 01/07/2015

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2010091023

Project Title: Olancha-Cartago Four-Lane Project
Lead Agency: California Dept. of Transportation — Contact Person: Kirsten Helton
Mailing Address: 855 M Street Suite 200 — Phone: 559-445-6461
City: Fresno — Zip: 93721 — County: Fresno

Project Location: County: Inyo — City/Nearest Community: Olancha & Cartago
Cross Streets: State Route 395 — Zip Code: 93549
Longitude/Latitude (degrees, minutes and seconds): 117 ° 58 ′ 47 ″ N / 36 ° 12 ′ 26 ″ W Total Acres: N/A
Assessor's Parcel No.: — Section: — Twp.: — Range: — Base:
Within 2 Miles: State Hwy #: 395 — Waterways: Los Angeles Aqueduct
Airports: N/A — Railways: N/A — Schools: N/A

Document Type:

CEQA: ☒ NOP ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec Other:
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI
Other: ☐ Joint Document ☐ Final Document ☐ Other:

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other:

Development Type:

☐ Residential: Units Acres
☐ Office: Sq.ft. Acres Employees
☐ Commercial: Sq.ft. Acres Employees
☐ Industrial: Sq.ft. Acres Employees
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type MGD
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type MW
☐ Waste Treatment: Type MGD
☐ Hazardous Waste: Type
☐ Other:

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☒ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Biological Resources ☐ Coastal Zone ☒ Drainage/Absorption ☒ Economic/Jobs
☐ Fiscal ☒ Flood Plain/Flooding ☐ Forest Land/Fire Hazard ☒ Geologic/Seismic ☐ Minerals ☒ Noise ☐ Population/Housing Balance ☐ Public Services/Facilities
☐ Recreation/Parks ☐ Schools/Universities ☐ Septic Systems ☐ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☐ Solid Waste ☒ Toxic/Hazardous ☒ Traffic/Circulation
☒ Vegetation ☒ Water Quality ☐ Water Supply/Groundwater ☒ Wetland/Riparian ☒ Growth Inducement ☒ Land Use ☒ Cumulative Effects ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Transportation/Open Space

Project Description: *(please use a separate page if necessary)*

The California Department of Transportation (Caltrans) proposes to convert approximately 12.6 miles of the existing U.S. Highway 395 from a two-lane conventional highway into a four-lane expressway near the communities of Olancha and Cartago in Inyo County. Additionally, a route adoption is proposed for U.S. Highway 395 and State Route 190.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2010

NOP Distribution List

CMA

County: Inyo

SCH# 2010091023

Resources Agency

- ■ **Resources Agency**
  Nadell Gayou
- ☐ **Dept. of Boating & Waterways**
  Nicole Wong
- ☐ **California Coastal Commission**
  Elizabeth A. Fuchs
- ☐ **Colorado River Board**
  Lisa Johansen
- ☐ **Dept. of Conservation**
  Elizabeth Carpenter
- ☐ **California Energy Commission**
  Eric Knight
- ☐ **Cal Fire**
  Dan Foster
- ☐ **Central Valley Flood Protection Board**
  James Herota
- ■ **Office of Historic Preservation**
  Ron Parsons
- ■ **Dept of Parks & Recreation**
  Environmental Stewardship Section
- ☐ **California Department of Resources, Recycling & Recovery**
  Sue O'Leary
- ☐ **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- ■ **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou

Fish and Game

- ☐ **Depart. of Fish & Wildlife**
  Scott Flint
  Environmental Services Division
- ☐ **Fish & Wildlife Region 1**
  Donald Koch
- ☐ **Fish & Wildlife Region 1E**
  Laurie Harnsberger
- ☐ **Fish & Wildlife Region 2**
  Jeff Drongesen
- ☐ **Fish & Wildlife Region 3**
  Charles Armor
- ☐ **Fish & Wildlife Region 4**
  Julie Vance
- ☐ **Fish & Wildlife Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- ☐ **Fish & Wildlife Region 6**
  Tiffany Ellis
  Habitat Conservation Program
- ■ **Fish & Wildlife Region 6 I/M**
  Heidi Sickler
  Inyo/Mono, Habitat Conservation Program
- ☐ **Dept. of Fish & Wildlife M**
  George Isaac
  Marine Region

Other Departments

- ☐ **Food & Agriculture**
  Sandra Schubert
  Dept. of Food and Agriculture
- ☐ **Depart. of General Services**
  Public School Construction
- ☐ **Dept. of General Services**
  Anna Garbeff
  Environmental Services Section
- ☐ **Delta Stewardship Council**
  Kevan Samsam
- ☐ **Housing & Comm. Dev.**
  CEQA Coordinator
  Housing Policy Division

Independent Commissions,Boards

- ☐ **Delta Protection Commission**
  Michael Machado
- ☐ **OES (Office of Emergency Services)**
  Dennis Castrillo
- ■ **Native American Heritage Comm.**
  Debbie Treadway
- ☐ **Public Utilities Commission**
  Leo Wong
- ☐ **Santa Monica Bay Restoration**
  Guangyu Wang
- ■ **State Lands Commission**
  Jennifer Deleong
- ☐ **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Cal State Transportation Agency CalSTA

- ☐ **Caltrans - Division of Aeronautics**
  Philip Crimmins
- ☐ **Caltrans – Planning HQ LD-IGR**
  Terri Pencovic
- ■ **California Highway Patrol**
  Suzann Ikeuchi
  Office of Special Projects

Dept. of Transportation

- ☐ **Caltrans, District 1**
  Rex Jackman
- ☐ **Caltrans, District 2**
  Marcelino Gonzalez
- ☐ **Caltrans, District 3**
  Eric Federicks – South
  Susan Zanchi - North
- ☐ **Caltrans, District 4**
  Erik Alm
- ☐ **Caltrans, District 5**
  Larry Newland
- ☐ **Caltrans, District 6**
  Michael Navarro
- ☐ **Caltrans, District 7**
  Dianna Watson
- ☐ **Caltrans, District 8**
  Mark Roberts
- **Caltrans, District 9**
  Gayle Rosander
- ☐ **Caltrans, District 10**
  Tom Dumas
- ☐ **Caltrans, District 11**
  Jacob Armstrong
- ☐ **Caltrans, District 12**
  Maureen El Harake

Cal EPA

Air Resources Board

All Other Projects
Cathi Slaminski

- ■ Transportation Projects
  Nesamani Kalandiyur
- ☐ Industrial/Energy Projects
  Mike Tollstrup

- ☐ **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- ☐ **State Water Resources Control Board**
  Jeffery Werth
  Division of Drinking Water
- ☐ **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- ☐ **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- ■ **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- ☐ **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- ☐ **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- ☐ **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- ☐ **RWQCB 3**
  Central Coast Region (3)
- ☐ **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- ☐ **RWQCB 5S**
  Central Valley Region (5)
  - ☐ **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - ☐ **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- ☐ **RWQCB 6**
  Lahontan Region (6)
  - ■ **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- ☐ **RWQCB 7**
  Colorado River Basin Region (7)
- ☐ **RWQCB 8**
  Santa Ana Region (8)
- ☐ **RWQCB 9**
  San Diego Region (9)

- ☐ Other _____
  _____
  _____
- ☐ _____
  Conservancy

Last Updated 10/13/2014

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

DEPARTMENT OF TRANSPORTATION
CENTRAL REGION
855 M STREET, SUITE 200
FRESNO, CA 93721
PHONE (559) 445-6461
FAX (559) 445-6236
TTY 711
www.dot.ca.gov

Serious drought.
Help save water!

December 5, 2014

SCH #2010091023

State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

Subject: Notice of Preparation for the Olancha/Cartago Four-Lane Project

The California Department of Transportation (Caltrans) proposes to convert approximately 12.6 miles of the existing U.S. Highway 395 from a two-lane conventional highway into a four-lane expressway from post mile 29.2 to post mile 41.8 in Inyo County.

The Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment was publically noticed and circulated for comments from September 2, 2010 to October 22, 2010. Caltrans and FHWA have subsequently determined that an Environmental Impact Report is warranted for the project. The circulation dates for the NOP are from December 8, 2014 to January 6, 2015.

Caltrans requests that the State Clearinghouse date stamp and return a copy of the Notice of Preparation in the self-addressed, stamped envelope enclosed. If you have any questions, please contact me at (559) 445-6461.

Sincerely,

Kirsten Helton
Senior Environmental Planner

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

SCH NO. 2010091023

NOTICE OF PREPARATION

To: State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

From: California Dept. of Transportation
855 M Street Suite 200
Fresno, CA 93721

Subject: **Notice of Preparation of a Draft Environmental Impact Report**
Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Project Title: Olancha-Cartago Four-Lane Project

Project Location: State Route 395 in the County of Inyo

Project Description: The California Department of Transportation (Caltrans) proposes to convert approximately 12.6 miles of the existing U.S. Highway 395 from a two-lane conventional highway into a four-lane expressway near the communities of Olancha and Cartago in Inyo County. Additionally, a route adoption is proposed for U.S. Highway 395 and State Route 190.

This is to inform you that the California Department of Transportation will be the lead agency and will prepare an environmental impact report for the project described below. Your participation as a responsible agency is requested in the preparation and review of this document.

Based on the findings in the Initial Study prepared in August of 2010, Caltrans has determined that a project EIR in accordance with Section 15161 of the State CEQA guidelines will be prepared due to potentially significant unavoidable impacts associated with the project.

We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

A complete project description, location, and probable environmental effects are contained in the attached material.

A copy of the Initial Study is not attached, but is available online at:
http://www.dot.ca.gov/dist9/projects/olancha/docs/draft_olancha-cartago_envir_doc.pdf

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please direct your response to Kirsten Helton, Senior Environmental Planner, Central Region Environmental Division Special Projects Branch at the address shown above. Please provide us with the name of a contact person in your agency.

Date 12/5/2014

Signature _____

Christine Cox-Kovacevich,
Chief, Central Region Environmental

SCH NO. 2010091023

NOTICE OF PREPARATION

To: _____

From: California Dept. of Transportation
855 M Street Suite 200
Fresno, CA 93721

Subject: **Notice of Preparation of a Draft Environmental Impact Report**
Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Project Title: Olancha-Cartago Four-Lane Project

Project Location: State Route 395 in the County of Inyo

Project Description: The California Department of Transportation (Caltrans) proposes to convert approximately 12.6 miles of the existing U.S. Highway 395 from a two-lane conventional highway into a four-lane expressway near the communities of Olancha and Cartago in Inyo County. Additionally, a route adoption is proposed for U.S. Highway 395 and State Route 190.

This is to inform you that the California Department of Transportation will be the lead agency and will prepare an environmental impact report for the project described below. Your participation as a responsible agency is requested in the preparation and review of this document.

Based on the findings in the Initial Study prepared in August of 2010, Caltrans has determined that a project EIR in accordance with Section 15161 of the State CEQA guidelines will be prepared due to potentially significant unavoidable impacts associated with the project.

We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

A complete project description, location, and probable environmental effects are contained in the attached material.

A copy of the Initial Study is not attached, but is available online at:
http://www.dot.ca.gov/dist9/projects/olancha/docs/draft_olancha-cartago_envir_doc.pdf

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please direct your response to Kirsten Helton, Senior Environmental Planner, Central Region Environmental Division Special Projects Branch at the address shown above. Please provide us with the name of a contact person in your agency.

Date 12/5/2014

Signature _____

Christine Cox-Kovacevich
Chief, Central Region Environmental

Notice of Preparation of a Draft Environmental Impact Report for the Olancha-Cartego Four-Lane Project

The California Department of Transportation (the Department), the Lead Agency, is preparing environmental documentation to address impacts associated with converting the existing U.S. Highway 395 segment from a two-lane conventional highway into a four-lane expressway. In addition, this Environmental Impact Report/Environmental Assessment (EIR/EA) would provide environmental compliance documentation for construction of the project from post mile 29.2 to post mile 41.8 in Inyo County. The document will be prepared as a joint document pursuant to the California Environmental Quality Act and the National Environmental Policy Act. The Department will be preparing an Environmental Impact Report/Environmental Assessment (EIR/EA) for the project, which is known as the Olancha-Cartago Four-Lane Project. As required by CEQA, the Department is distributing this Notice of Preparation requesting comments from responsible and trustee agencies regarding the significant environmental issues, reasonable alternatives, and reasonable mitigation measures that need to be discussed in the Draft EIR/EA to address each agency's concern.

Project Location
The project is located on U.S. Highway 395 near the communities of Olancha and Cartago in Inyo County. The project extends the existing four-lane highway segment just south of the Los Angeles Aqueduct Bridge No. 48-10 at post mile 29.2 north to the four-lane segment at the Ash Creek Bridge No. 48-11, post mile 41.8. The project is approximately 12.6 miles long. Figure 1 provides a Project Vicinity Map and Figure 2 is the Project Location Map.

Project Description
The California Department of Transportation (Caltrans) proposes to convert approximately 12.6 miles of the existing U.S. Highway 395 from a two-lane conventional highway into a four-lane expressway from post mile 29.2 to post mile 41.8 in Inyo County. The new facility will have four 12-foot lanes with a variable median width. There will be paved shoulders throughout the project, 5 feet wide on the inside and 10 feet wide on the outside. The project will construct new concrete bridges to cross the Los Angeles Aqueduct and install concrete box culverts and smaller pipe culverts throughout the project limits to promote drainage. A material site at the end of Fall Road and south of Olancha Creek may be used to provide soil and road materials for the project. Additionally, a route adoption is proposed for U.S. Highway 395 and State Route 190.

Project Alternatives
The Department will continue to screen the alternatives identified through the scoping process and only carry forward those alternatives that are considered viable for evaluation in the EIR/EA. The following alternatives are currently under consideration:

Build Alternatives

- Alternative 1 proposes constructing segments of conventional all-paved, conventional divided and controlled-access four-lane divided highway along the existing U.S. Highway 395 alignment.

- Alternative 2 proposes construction of a controlled-access four-lane divided expressway with the northbound and southbound lanes separated by at least a 100-foot-wide unpaved median throughout the project along the existing U.S. Highway 395 alignment.

- Alternative 2A is a variation of Alternative 2 and proposes that the controlled-access divided four-lane expressway be constructed to the west of the community of Cartago with the northbound and southbound lanes separated by at least a 100-foot-wide unpaved median throughout.

- Alternative 3 proposes construction of a controlled-access divided four-lane expressway to the west of the community of Olancha with the northbound and southbound lanes separated by at least a 100-foot-wide unpaved median throughout the project.

- Alternative 4 proposes construction of a controlled-access divided four-lane expressway to the west of the communities of Olancha and Cartago with northbound and southbound lanes separated by a variable-width median throughout the project to avoid utilities.

- The Recommended Preferred Alternative is a combination of Alternatives 3 and 4 that was not circulated as part of the Initial Study. The combined alternative will be a controlled-access four-lane divided expressway that will pass west of Olancha and the Los Angeles Aqueduct (Alternative 4). Once the alignment crosses Olancha Creek, the preferred alternative will cross the Los Angeles Aqueduct and continue north through Cartago along the existing highway to meet up with the four-lane section of U.S. Highway 395 to the north (Alternative 3). The northbound and southbound lanes will be separated by a 100-foot wide unpaved median.

No Build Alternative
The "No-build" alternative proposes to leave the facility as it currently exists.

Environmental Effects
The project would not create a significant encroachment upon the floodplain. The proposed project would not increase seismic hazards. There would be no effects on air quality, water quality, or sensitive noise receptors. The character and composition of traffic would not be affected. The project would not affect planned land use.

Biological Resources
Impacts to threatened or endangered species would be mitigated in accordance with a Biological Opinion rendered by the U.S. Fish and Wildlife Service and with a Section 2081 Incidental Take Permit issued by the California Department of Fish and Game.

Relocations
Residents and businesses displaced by the project would receive assistance through the Relocation Assistance Program in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.

Visual/Aesthetic
Impacts would be mitigated by contour grading cut and fill slopes to a non-uniform profile to blend with the adjacent slopes. The selection of materials and methods for the revegetation of the project is critical for erosion control and restoring the visual quality. To preserve the native seed stock and natural chemical compounds, it is critical to collect and store topsoil/duff for placement on disturbed areas before replanting. A plan would be instituted to minimize the removal of existing vegetation wherever feasible. Freemont Cottonwood trees would be replaced in accordance with the California Department of Fish and Game 1602 permit.

Utilities
Utilities affected by the project would be relocated in coordination with utility companies.

Cultural Resources
Impacts to cultural resources would be mitigated under the provisions of the Caltrans, Federal Highway Administration, and State Historic Preservation Officer Programmatic Agreement for Compliance with Section 106 of the National Historic Preservation Act.

Paleontological Resources
Impacts to paleontological resources would be minimized by implementing a well-designed paleontological resource mitigation plan.

Wetlands
Wetlands would be mitigated through the in-lieu fee process or by purchasing credits from an approved bank at a ratio to be determined during the permitting process with the United States Army Corps of Engineers.

Section 4(f)
A Section 4(f) evaluation is required for this project because prehistoric and historic archaeological sites and cultural landscape/property exist within the project limits.

Figure 1

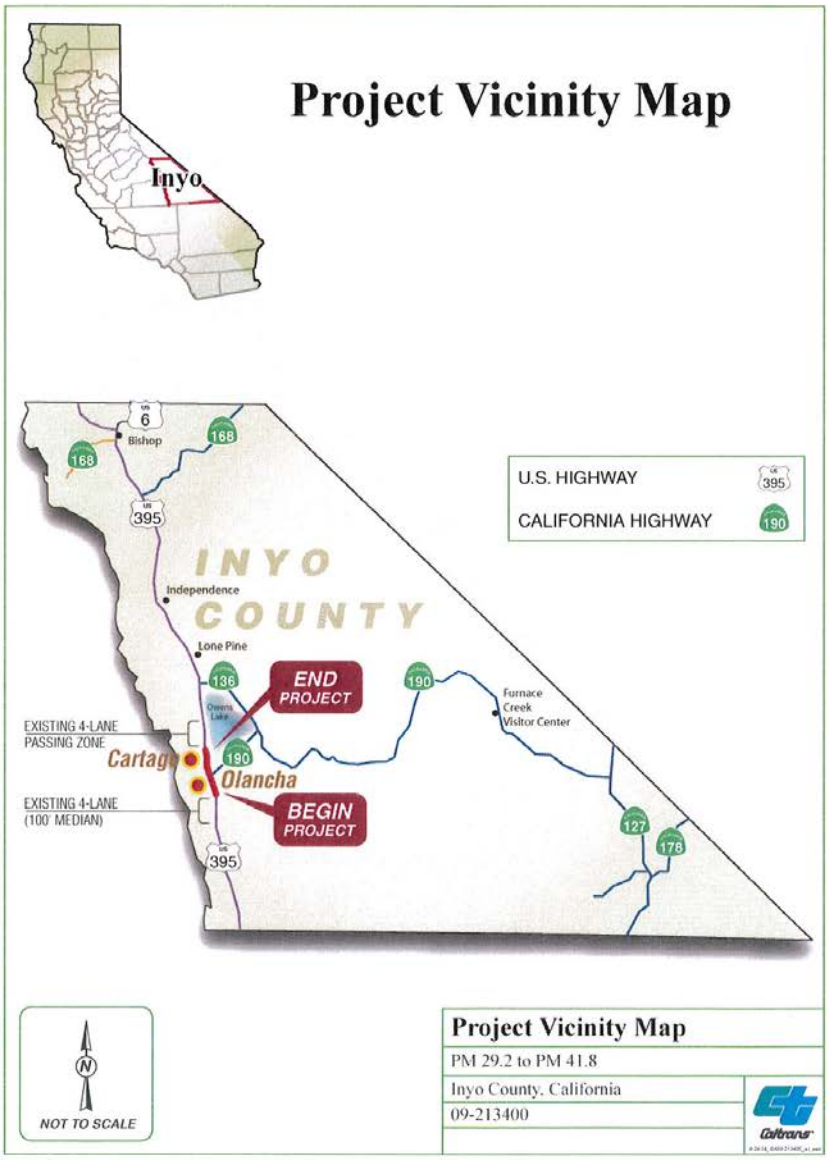
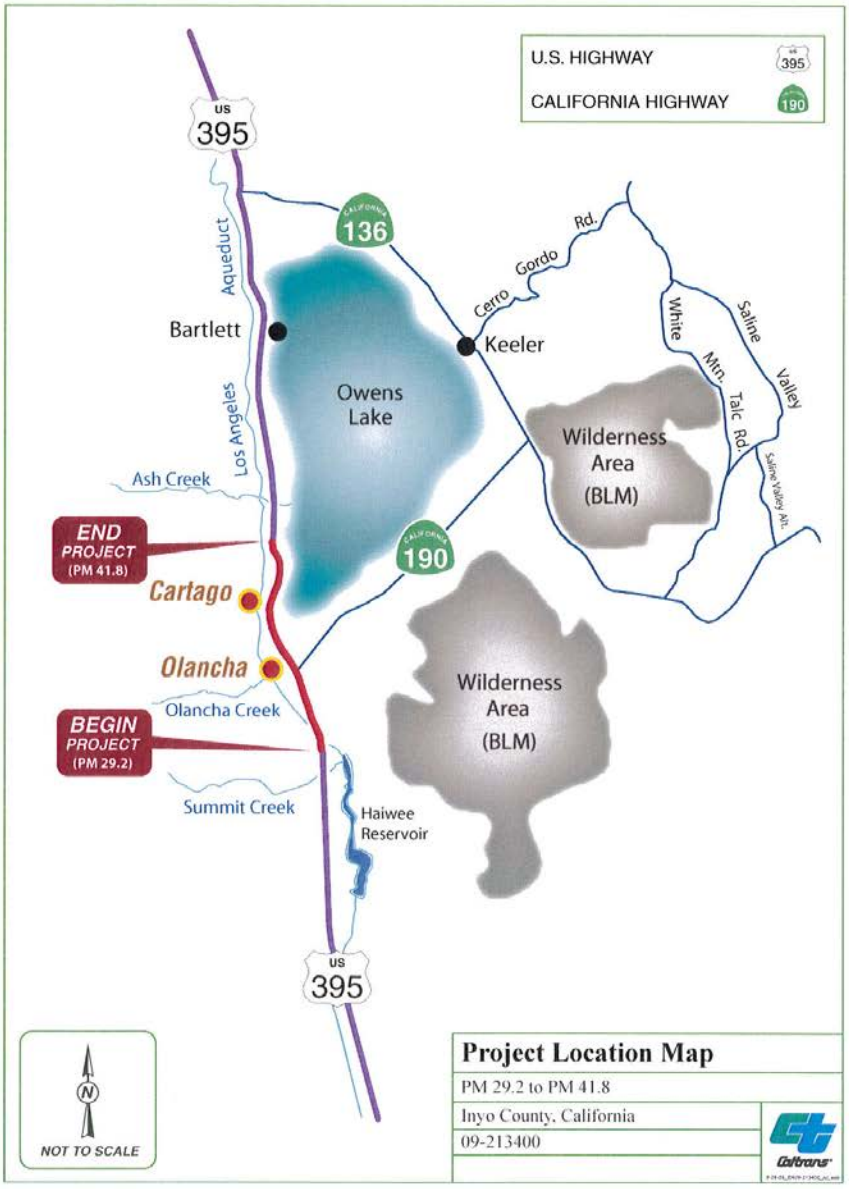

Project Vicinity Map
Inyo
Bishop
168
168
6
395
INYO
COUNTY
Independence
Lone Pine
136
END
PROJECT
190
Furnace
Creek
Visitor Center
EXISTING 4-LANE
PASSING ZONE
Cartago
190
Olancha
EXISTING 4-LANE
(100' MEDIAN)
BEGIN
PROJECT
395
127
178
U.S. HIGHWAY
395
CALIFORNIA HIGHWAY
190
N
NOT TO SCALE
Project Vicinity Map
PM 29.2 to PM 41.8
Inyo County, California
09-213400
Caltrans

Figure 2


U.S. HIGHWAY
395
CALIFORNIA HIGHWAY
190
US
395
136
Aqueduct
Bartlett
Los Angeles
Owens
Lake
Keeler
Cerro
Gordo
Rd.
White
Mtn.
Talc Rd.
Saline
Valley
Wilderness
Area
(BLM)
Ash Creek
END
PROJECT
(PM 41.8)
Cartago
190
Olancha
Olancha Creek
BEGIN
PROJECT
(PM 29.2)
Summit Creek
Haiwee
Reservoir
Wilderness
Area
(BLM)
US
395
N
NOT TO SCALE
Project Location Map
PM 29.2 to PM 41.8
Inyo County, California
09-213400
Caltrans

List of Technical Studies

Air Quality Report, February 2010
Air Quality Report Addendum, May 2010
Air Quality Report Addendum, April 2015
Noise Study Report, July 2003
Noise Study Report Addendum, August 2008
Noise Study Report Addendum, August 2010
Water Quality Report, August 2008
Water Quality Report Addendum, March 2010
Natural Environment Study, 2003
Natural Environment Study Addendum, 2010
Natural Environment Study Addendum, October 2014
Location Hydraulic Study/Floodplain Evaluation, December 2000
Addendum to the Location Hydraulic Study/Floodplain Evaluation, January 2007
Preliminary Geotechnical Report, December 1999
Preliminary Geotechnical Report Errata, May 2010
Historic Property Survey Report, March 2004
Supplemental Historic Property Survey Report, January 2010
Initial Site Assessment for Hazardous Waste, September 2003
Addendum for the Initial Site Assessment for Hazardous Waste, January 2007
Addendum for the Initial Site Assessment for Hazardous Waste, June 2009
Addendum for the Initial Site Assessment for Hazardous Waste, March 2010
Addendum for the Initial Site Assessment for Hazardous Waste, December 2014
Visual Impact Assessment, January 2010
Visual Impact Assessment Addendum, July 2014
Relocation Impact Statement, October 2013
Paleontological Identification Report, March 2010
Paleontological Evaluation Report, April 2014
Traffic Operations Report, January 2010
Traffic Operations Report, December 2013