

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 miles south of Ash Creek Bridge (#48-11)
09-INY-395-PM 29.2/PM 41.8
09-213400

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment



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



August 2010



General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans), as CEQA lead agency, and the Federal Highway Administration, as NEPA lead agency have prepared this Initial Study/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project located in Inyo County, California. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, and potential impacts from each of the alternatives, as well as the proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read this document. Additional copies of it, as well as of the technical studies we relied on in preparing it, are available for review at the Caltrans district office at the Caltrans District 6 Environmental Division Office at 2015 E. Shields Avenue, Suite 100, Fresno, CA 93726; the Caltrans District 9 Office at 500 South Main Street, Bishop, CA 93514; the Lone Pine Library at 127 W. Bush Street, Lone Pine, CA 93545; and the Eastern Sierra Interagency Visitor Center at the junction of U.S. Highway 395 and State Route 136 (one mile south of Lone Pine).
- We welcome your comments. If you have any concerns regarding the proposed project, please send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

Kirsten Helton, Branch Chief
Southern Valley Environmental Analysis Branch
California Department of Transportation
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726

Submit comments via email to: kirsten_helton@dot.ca.gov.

- Submit comments by the deadline: _____.

What happens next?

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

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Kirsten Helton, Southern Valley Environmental Analysis Branch, 2015 E. Shields Avenue, Suite 100, Fresno, CA 93726; (559) 243-8224 Voice, or use the California Relay Service TTY number, 1-800-735-2929 or 711.

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

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

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

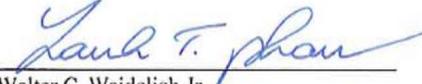
U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

THE STATE OF CALIFORNIA
Department of Transportation

8/12/10
Date of Approval


Sarah Gassner
Acting Office Chief, Central Region
Environmental North
California Department of Transportation
CEQA Lead Agency

8/24/10
Date of Approval

For 
Walter C. Waidelich Jr.
Division Administrator
Federal Highway Administration
NEPA Lead Agency

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

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 or partial conventional four-lane highway from post mile 29.2 to post mile 41.8 in Inyo County. The new facility would have four 12-foot lanes with a variable median width. There would be paved shoulders throughout the project, five feet wide on the inside and ten feet wide on the outside. The project would 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 borrow 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.

Determination

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

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

- The project would not create a significant encroachment upon the floodplain. The proposed project would not increase seismic hazards. There would be no effects on recreational or educational facilities or on any park. 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.

In addition, the proposed project would have no significantly adverse effect on endangered species, relocations, visual resources, utilities, cultural resources, and wetlands because the following mitigation measures would reduce potential effects to insignificance:

- 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.
- 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. Fremont Cottonwood trees would be replaced in accordance with the California Department of Fish and Game 1602 permit.
- Utilities affected by the project would be relocated in coordination with utility companies.
- 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.
- Impacts to paleontological resources would be minimized by implementing a well-designed paleontological resource mitigation plan.
- 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.

Sarah Gassner
Acting Office Chief, Central Region, Environmental North
California Department of Transportation

Date

Summary

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 five alternatives with varying amounts of construction on new alignments. The new facility would have four 12-foot lanes with a median of variable width. There would be paved shoulders throughout the project, five feet wide on the inside and ten 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 borrow site at the end of Fall Road and south of Olancho Creek would be available for use to provide soil and road materials for the project.

The California Department of Transportation 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 accommodate the change from conventional to controlled-access expressway. 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.

Because this project would improve safety, local residents and county officials generally do not oppose the widening of this section of U.S. Highway 395.

There are five alternatives proposed and one no-build alternative for this project (see *Figures 1.3 through 1.7*).

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.

Summary

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 “No-build” alternative proposes to leave the facility as it currently exists.

Table S.1, Summary of Major Potential Impacts from Alternatives, compares the potential impacts of Alternative 1, Alternative 2, Alternative 2A, Alternative 3, Alternative 4, and the No-Build Alternative.

Summary of Major Potential Impacts from Alternatives

Potential Impact		Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	No-Build Alternative
Land Use	Consistent with the Inyo County General Plan	Yes	Yes	Yes	Yes	Yes	No
Relocation	Business displacements	5	9	8	3	0	0
	Housing displacements	7	6	7	4	1	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	No impact
Right-of-way acres needed for roadway		130	257	320	271	517	0

Summary

Potential Impact	Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	No-Build Alternative
Right-of-way acres needed for borrow pit	60	60	60	60	60	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	No Impact
Cultural Resources	12 eligible sites could be affected	12 eligible sites could be affected	4 eligible and 38 additional sites that will be evaluated if this alternative is selected.	12 eligible and 38 additional sites that will be evaluated if this alternative is selected.	10 eligible and 24 additional sites that will be evaluated if this alternative is selected.	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.	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	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 impact
Natural Communities	.59 acres of Greasewood, .25 acre of Fremont cottonwood, .53 acre of bulrush, .53 acres of mixed willow, and .53 acres of saltgrass habitats would be affected	1.8 acres of Fremont cottonwood, .53 acre of bulrush, .53 acres of mixed willow, and .53 acres of saltgrass habitats would be affected	2.5 acres of Fremont cottonwood, .53 acre of bulrush, .53 acres of mixed willow, and .53 acres of saltgrass habitats would be affected	2.5 acres of Fremont cottonwood, .53 acre of bulrush, .53 acres of mixed willow, and .53 acres of saltgrass habitats would be affected	2.4 acres of Fremont cottonwood, .53 acre of bulrush, .53 acre of mixed willow, and .53 acre of saltgrass habitats would be affected	No impact
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	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	No impact

Summary

Potential Impact	Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	No-Build Alternative
Plant Species	Parishs popcorn-flower and Owens Valley checkerbloom would be affected	Sanicle cymopterus, Parishs popcorn-flower and Owens Valley checkerbloom would be affected	Pygmy poppy, Sanicle cymopterus, Parishs popcorn-flower and Owens Valley checkerbloom would be affected	Parishs popcorn-flower and Owens Valley checkerbloom would be affected	Crowned muilla, Parishs popcorn-flower and Owens Valley checkerbloom would be affected	No impact
Animal Species	Bats, Alkali Skipper, and Owens Valley vole would be affected	Bats, Alkali Skipper, and Owens Valley vole would be affected	Bats, Alkali Skipper, and Owens Valley vole would be affected	Bats, Alkali Skipper, and Owens Valley vole would be affected	Mule deer, bats, Alkali Skipper, and Owens Valley vole would be affected	No impact
Threatened and Endangered Species	Swainson's hawk, Owens Valley checkerbloom and least Bell's vireo may be affected but not likely to be adversely affected; desert tortoise and Mojave ground squirrel may be affected, likely to adversely affect.	Swainson's hawk, Owens Valley checkerbloom and least Bell's vireo may be affected but not likely to be adversely affected; desert tortoise and Mojave ground squirrel may be affected, likely to adversely affect.	Swainson's hawk, Owens Valley checkerbloom and least Bell's vireo may be affected but not likely to be adversely affected; desert tortoise and Mojave ground squirrel may be affected, likely to adversely affect	Swainson's hawk, Owens Valley checkerbloom and least Bell's vireo may be affected but not likely to be adversely affected; desert tortoise and Mojave ground squirrel may be affected, likely to adversely affect.	Swainson's hawk, Owens Valley checkerbloom and least Bell's vireo may be affected but not likely to be adversely affected; desert tortoise and Mojave ground squirrel may be affected, likely to adversely affect.	No Effect

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List of Abbreviated Terms

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
FHWA	Federal Highway Administration
NEPA	National Environmental Policy Act
PM	post mile

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 towns of Olancho 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.

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. The existing roadway is primarily a two-lane conventional highway that consists of a 24-foot-wide traveled way with eight-foot paved shoulders. The drivers who prefer to travel faster are prohibited by barrier striping from passing through more than half the project limits. In areas without barrier striping, the high traffic volumes further restrict passing opportunities. The north and south ends of the project limits currently connect to four-lane divided expressways, creating an inconsistent travel way. 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 since the region imports 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 recreationally oriented and that recreation vehicles comprised 3.2 percent of the vehicle mix. It 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 1-1, based on 2008 traffic volume counts. The future traffic volumes are based on a growth rate of 1.3 percent per year.

Table 1-1 Traffic Data

	2008	2015	2025	2035
Average Annual Daily Traffic	5600	6130	6980	7940
Percent Trucks	21.5	-	-	
20-Year Growth Rate (percent)	-	1.3	1.3	1.3

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

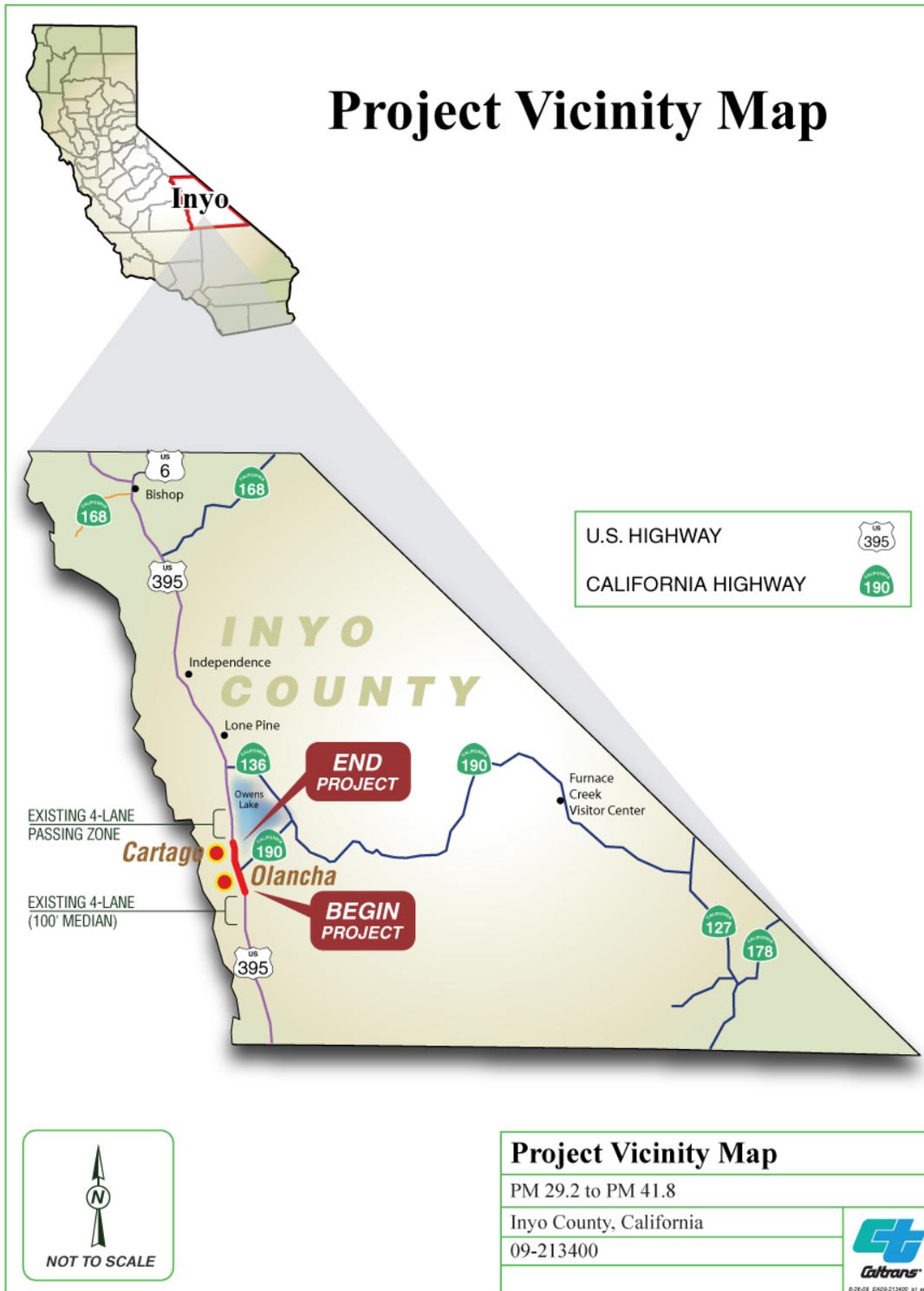


Figure 1.1 Project Vicinity Map

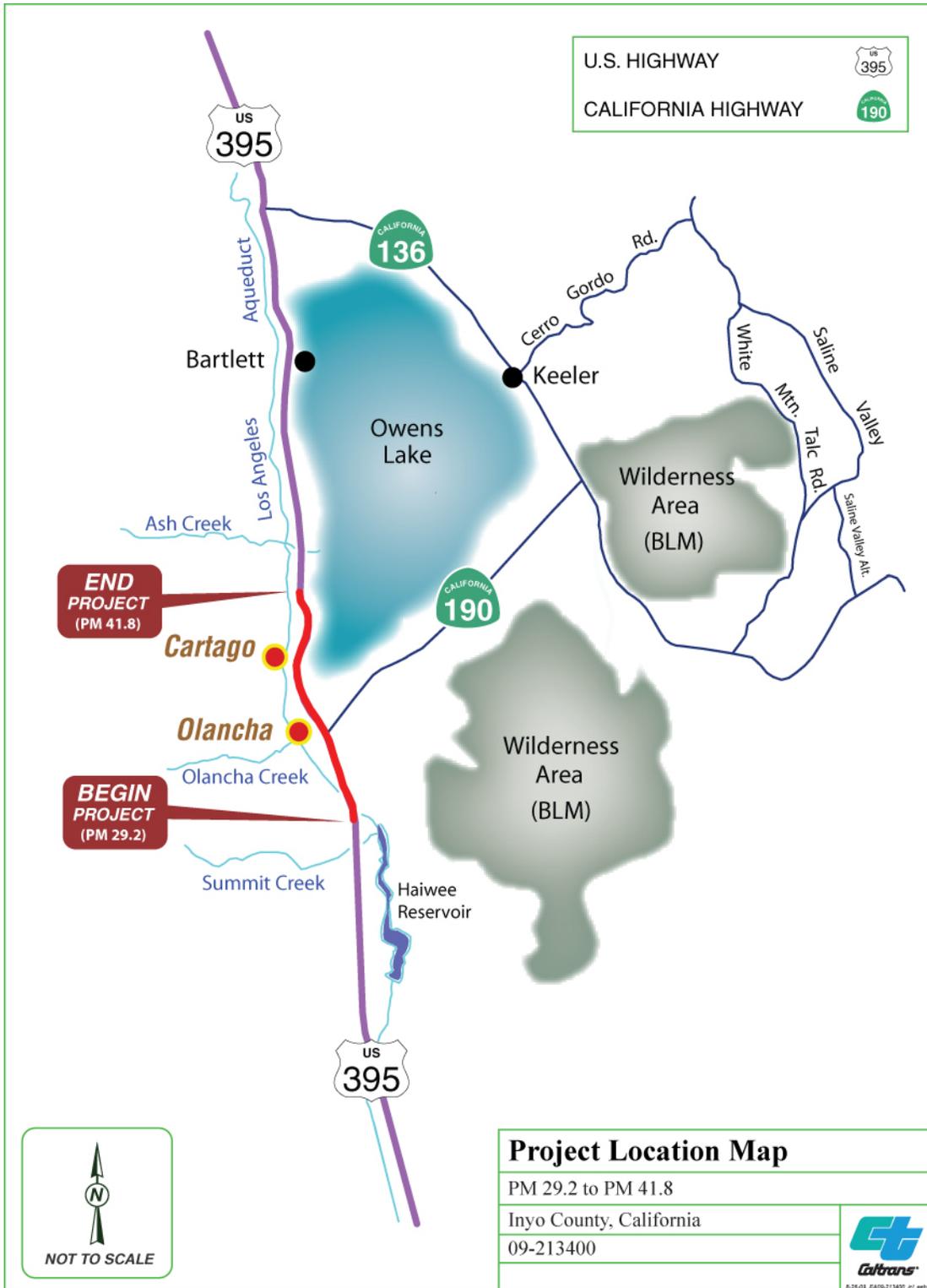


Figure 1.2 Project Location Map

Level of Service

Level of service is a measure of how free or constrained traffic traveling along a road segment or through an intersection is. 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 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 (see Figure 1.3). There is more traffic using the existing roadway than it is designed to carry and 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 vehicle using the route, with trucks and recreational vehicles making up more than a quarter of the traffic. Long lines of cars begin to collect behind these slower moving vehicles creating longer driver delays which are a major component when determining level of service. By 2035 the level of service is expected to drop to E.

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 Highway

<h1 style="text-align: center;">LEVELS OF SERVICE</h1> <h2 style="text-align: center;">for Multi-Lane Highways</h2>			
Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		60	Highest level of service. Traffic flows freely with little or no restrictions on maneuverability. No delays
B		60	Traffic flows freely, but drivers have slightly less freedom to maneuver. No delays
C		60	Density becomes noticeable with ability to maneuver limited by other vehicles. Minimal delays
D		57	Speed and ability to maneuver is severely restricted by increasing density of vehicles. Minimal delays
E		55	Unstable traffic flow. Speeds vary greatly and are unpredictable. Minimal delays
F		<55	Traffic flow is unstable, with brief periods of movement followed by forced stops. Significant delays

Source: 2000 HCM, Exhibit 21-3, Speed-Flow Curves with LOS Criteria for Multi-Lane Highways

Figure 1.4 Level of Service Chart for Multi-Lane Highway

Table 1-2 Level of Service within Project Limits

	2010	2015	2035
Level of service without improvements	D	D	E

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Safety Issues

At times, there is more traffic using the existing roadway than it is designed to carry and the highway operates at a reduced level of service. This is especially evident on weekends and holidays when traffic volumes are extremely heavy. As slow-moving trails of vehicles back up, drivers become frustrated and attempt to pass, often unsafely. Complicating the situation is the relatively high volume of slower moving vehicle using the route, with trucks and recreational vehicles making up more than a quarter of the traffic.

Because the study area is primarily rural, drivers of passenger cars tend to travel at a high rate of speed along the route. But trucks and recreational vehicles typically travel slower, so traffic starts to “queue” (line up) behind the larger, slower-moving vehicles. The drivers who prefer to travel faster are prohibited by barrier striping from passing through more than half the project limits. In areas without barrier striping, passing opportunities are further restricted by the high traffic volumes. The congestion and the resulting longer travel time and their cumulative impacts on driver fatigue and behavior create frustrated drivers willing to attempt unsafe maneuvers. These factors have led to a traffic accident fatality rate 50 percent higher than the statewide average (see *Table 1-3*). Thirty-three percent of the collisions involved hit objects, while almost 30 percent were overturn accidents, 14 percent were sideswipes and rear end collisions, and 5 percent were head-on accidents.

Table 1-3 Three-Year Traffic Accidents 2005-2008

Type of Accidents	Number	Accident Rate/Million Vehicle Miles	
		Study Area	Statewide
Fatal	3	0.036	0.024
Injury	15	0.22	0.34
Property Damage Only	25		
Total	43	0.52	0.78*

**Total Accident Rate/Million Vehicle Miles includes property damage accidents not shown.*

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All 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 functionally classified 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 United States Department of Transportation's "Intermodal Surface Transportation Efficiency Act of 1991."

This project is the last section of U.S. Highway 395 that is not four-lane. With the completion of this project, a continuous four-lane section will 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 Alternatives

This section describes the design alternatives that were identified in the planning and environmental analysis phases. Six alternatives were evaluated for the proposed U.S. Highway 395 Olancho/Cartago four-lane project; the five build alternatives (Alternatives 1, 2, 2A, 3, and 4) and the No-build Alternative. The proposed alignments can be found in Figures 1.5 through 1.9 and typical cross sections of the five build alternatives are in Appendix F.

1.3.1 Build Alternatives

Caltrans and the Federal Highway Administration will not select an alternative until after fully evaluating the environmental impacts, considering public and agency comments, and approving the draft environmental document. In response to public and agency comments and consideration of environmental impacts, portions of the alternatives may be combined to create a preferred alternative that minimizes impacts and maximizes benefits.

Common Design Features of the Build Alternatives

The project is located on U.S Highway 395 in Inyo County near the communities of Olancho 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. There are five build alternatives proposed, and one no build alternative.

A route adoption is necessary for all alternatives to accommodate the change from conventional to controlled-access expressway. State Route 190 would also 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.

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

A borrow site at the end of Fall Road and south of Olancho Creek would be created to provide soil and road materials for the project. U.S. Bureau of Land Management currently owns this site. The borrow site was included in the study area for this project and impacts on it are addressed in Chapter 2.

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 Olancho and Cartago, with a four-lane divided highway on either side of the communities. The four-lane divided highway will have a 100 foot unpaved median (see *Figure 1.5*).

Driveways and private roads that enter the highway now will continue to be allowed along the portions that remain conventional highway but access will be controlled throughout the divided highway portions of U.S. Highway 396. 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-pave facility. There are no multi-purpose undercrossings proposed as part of this alternative.

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 an unpaved median at least a 100 feet wide through the project area. The existing U.S. Highway 395 will 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 and would 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 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 miles longer.

The existing highway would still be converted to a frontage road, but the frontage road would extend further 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 not change. 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. 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 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 an unpaved median at least a 100 feet wide 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 miles longer.

The existing highway would be converted to 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 reduced to 4.8 miles. 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.

The number of structures and location of structures required for this alternative would change due to the western alignment. 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 still be required for the crossing of the north fork of Cartago Creek and the proposed multi-purpose undercrossings north of Cartago. An alternative or additional location for multi-purpose undercrossings would also be available near Olancha Creek.

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.

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 1.5 miles longer.

This alternative would also 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 also 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 mile 38.5 and post mile 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.

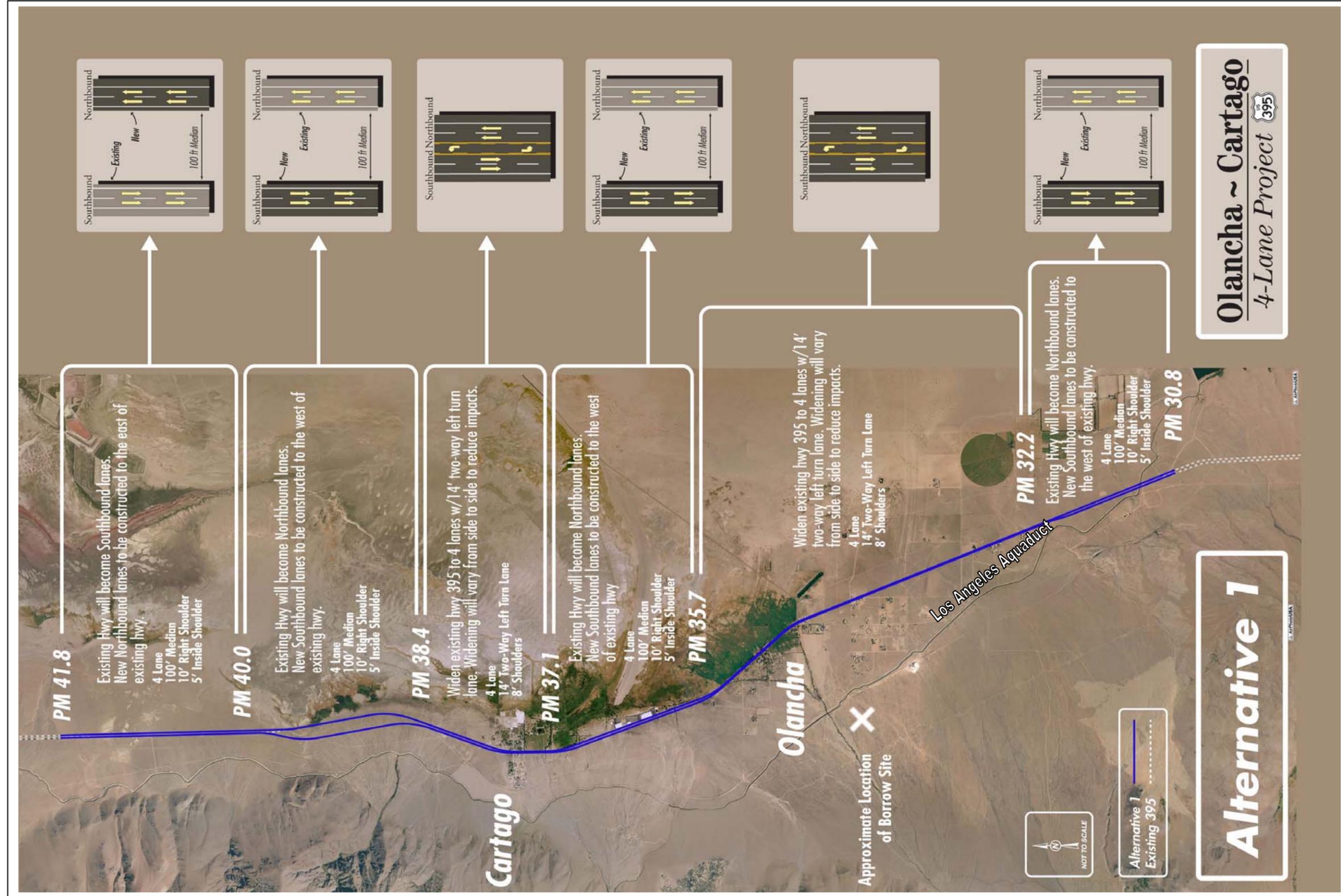


Figure 1.5 Alternative 1 Map

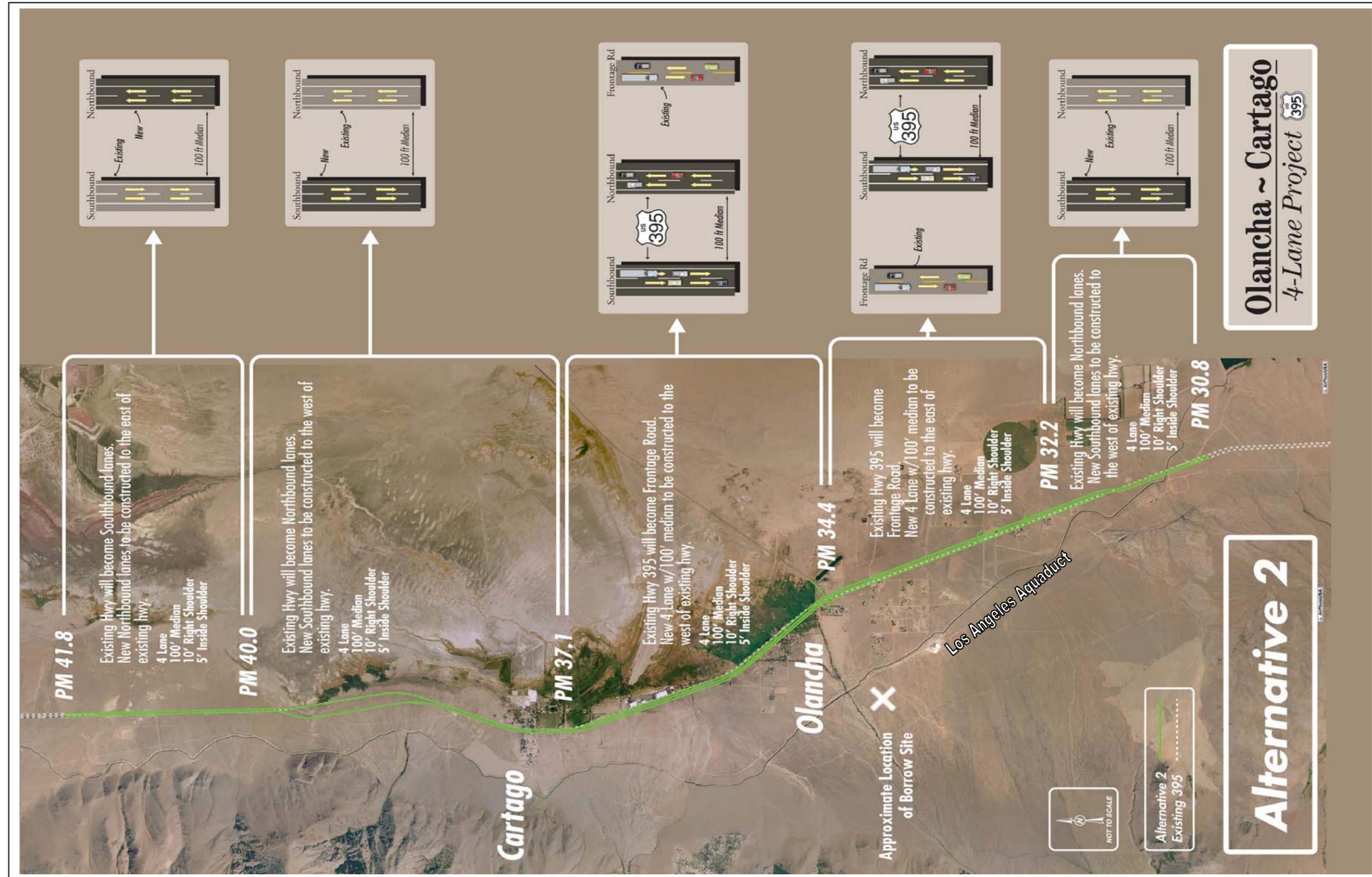


Figure 1.6 Alternative 2 Map

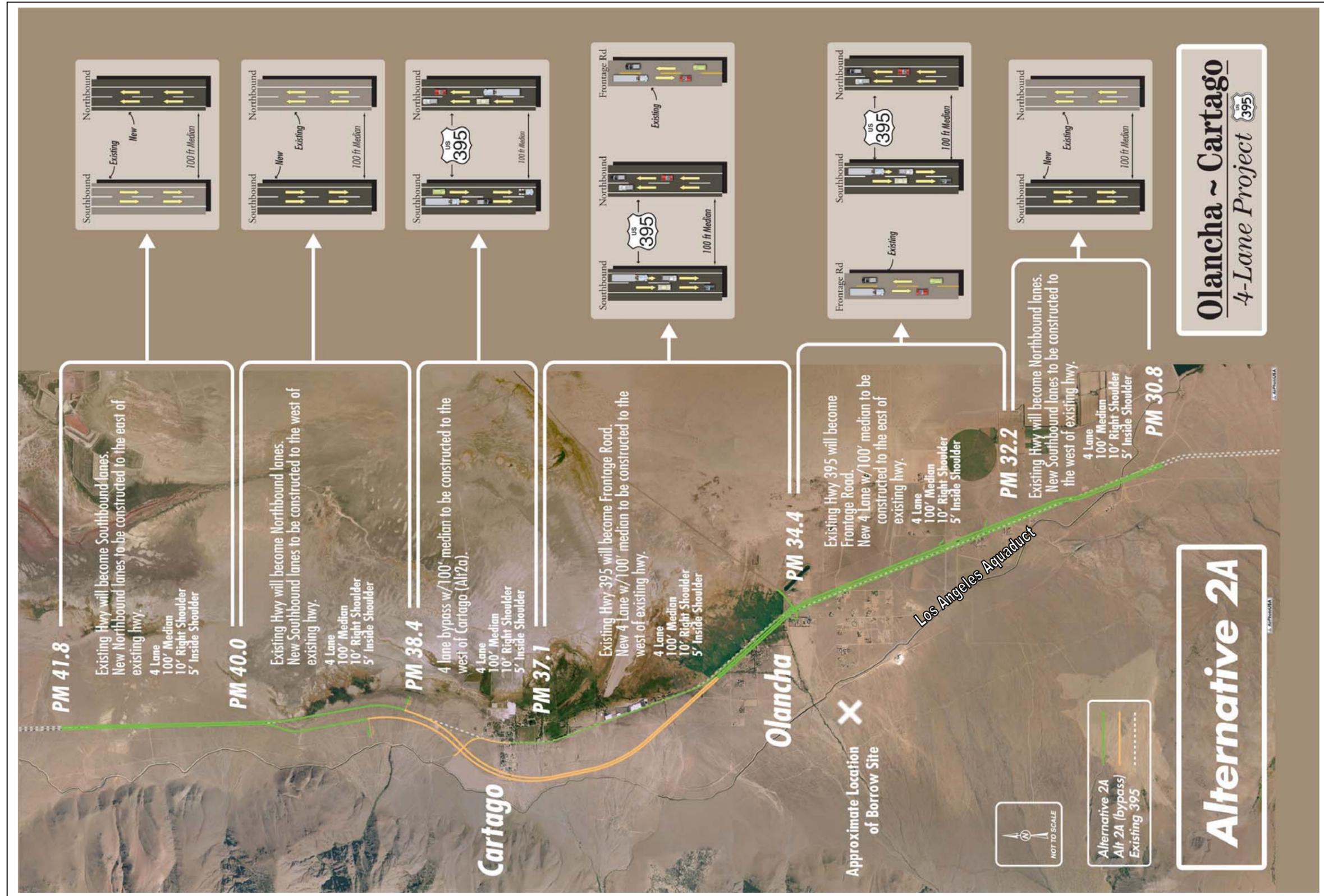


Figure 1.7 Alternative 2A Map

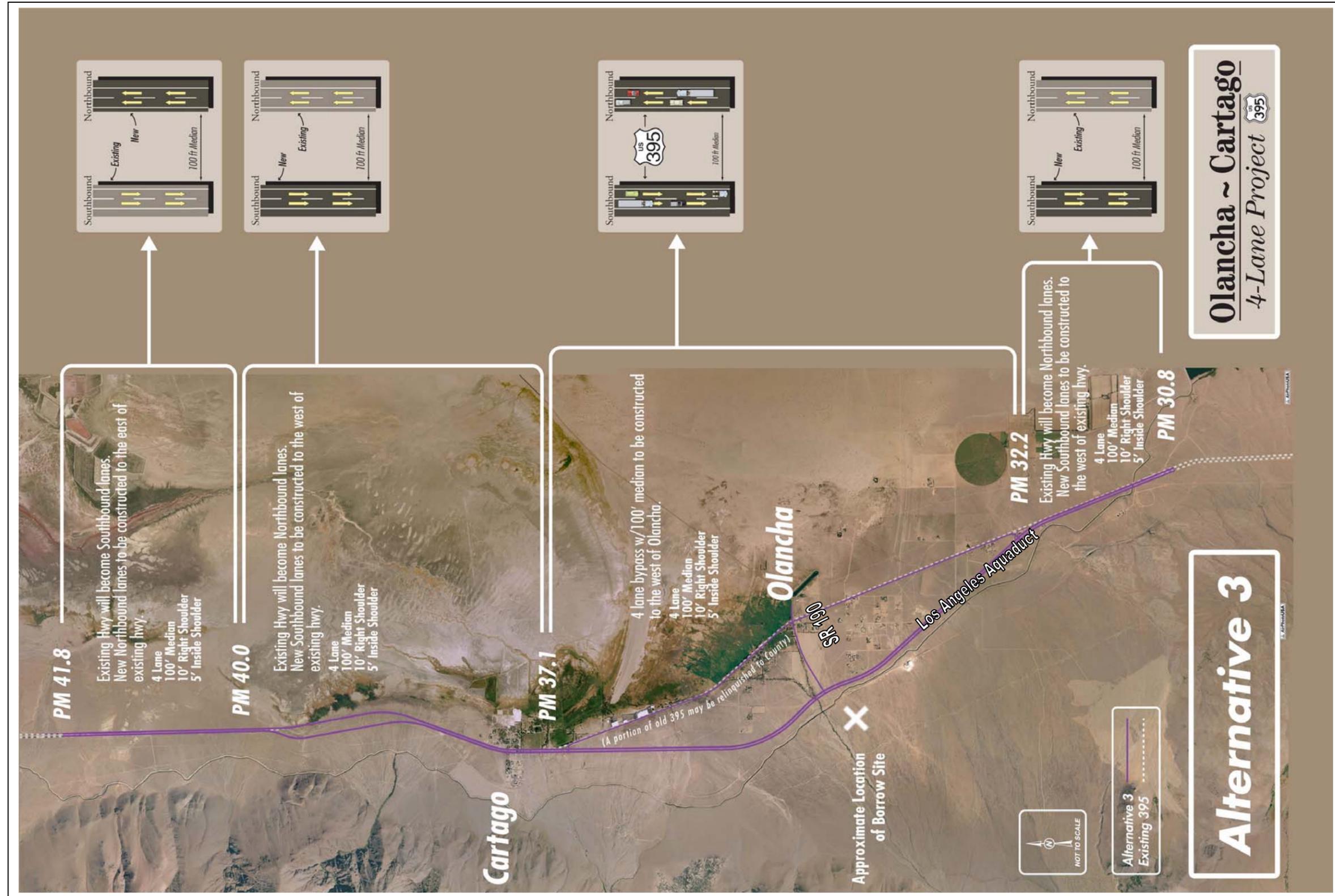


Figure 1.8 Alternative 3 Map

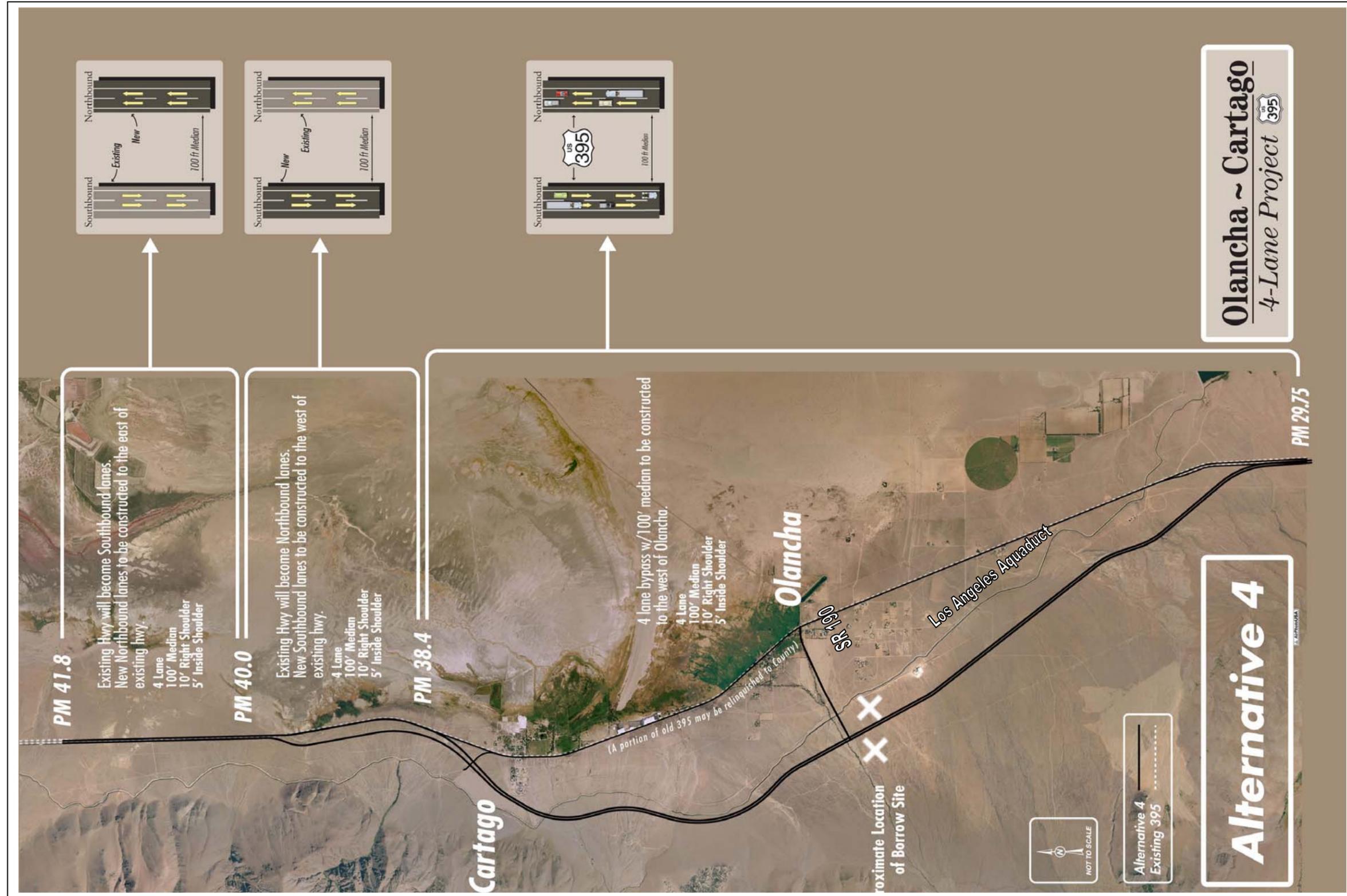


Figure 1.9 Alternative 4 Map

No-Build Alternative

The No-build Alternative would leave the facility as it currently exists and would not meet the project's purpose and need.

1.3.2 Comparison of Alternatives

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

All the alternatives would improve the level of service. However, Alternatives 2, 2A, 3, and 4 would provide better levels of service than Alternative 1. It's also anticipated that safety improvements associated with Alternatives 2, 2A, 3, and 4 would be greater than those provided by Alternative 1.

Alternative 1 would be the cheapest alternative and is estimated to cost \$68.1 million, while Alternative 4 would be the most expensive at an estimated \$95.4 million. Alternatives 2, 2A, and 3 would cost \$79.5 million, \$76.6 million, and \$69 million respectively. All of the construction estimates are escalated from current estimated costs above, to account for construction beginning in fiscal year 2015.

All of the build alternatives would result in relocations of business and/or homes. However Alternative 4, which displaces only one home, has the fewest. All the alternatives would result in relocating utilities.

Each of the build alternatives would have impacts to cultural resources. However, all unavoidable impacts would be mitigated prior to construction. All the build alternatives have the potential to encounter hazardous waste however they would be avoided or mitigated prior to construction.

All of the build alternatives except Alternative 4 would have noise impacts to local residences.

All the build alternatives would affect desert tortoise and Mojave ground squirrel habitat. However, Alternative 1 would have the least amount of biological impacts to endangered species. Alternative 2A would have impacts to sensitive plant species and Alternative 4 could affect mule deer. All the alternatives would affect bats.

After the public circulation period, all comments would be considered, and Caltrans and the Federal Highway Administration would select a preferred alternative and make the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act, if no unmitigable significant adverse impacts are identified, Caltrans would prepare a Negative Declaration or Mitigated Negative Declaration. Similarly, if the Federal Highway Administration determines the action does not significantly impact the environment, the Federal Highway Administration will issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

1.3.3 Alternatives Considered but Withdrawn

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 environmental impacts. However, Alternative 2R would impact 28 acres of wetlands while the other alternatives would impact fewer than 5 acres 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. 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.

1.3.4 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	The Biological Assessment would be prepared once a preferred alternative is selected and formal consultation leading to a Biological Opinion would be initiated.
California Department of Fish and Game	1602 Agreement for Streambed Alteration. Section 2081(b) permit for Threatened and Endangered Species	Application for 1602 agreement and Section 2081 permit anticipated before construction.
State Historic Preservation Officer	Section 106 Finding of No Adverse Effect with Standard Conditions or Finding of Adverse Effect and Memorandum of Agreement	Effect and Memorandum of Agreement documents would be prepared once a preferred alternative is selected.
U.S. Army Corps of Engineers	Section 404 of the Clean Water Act.	Permits would 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 would be acquired after the Final Environmental Document and prior to construction.
Inyo County	Encroachment permits	As needed.
Various property owners	Permission to collect fossils found during construction.	As needed.

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

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

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

- Coastal Zone – The proposed project is not located in a coastal zone. Inyo County is located 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, nor 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, and any other designated recreational trails identified within the study area.
- Farmland/Timberlands – Based on field surveys, no timberlands are located 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.

- 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 Land Use

2.1.1.1 Existing and Future Land Use

Affected Environment

Inyo County is geographically the second largest county in California, with 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. A range of federal agencies and the State of California, as well as the Los Angeles Department of Water and Power and other local agencies/Indian reservations are by far 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 their jurisdiction. Federal agencies involved in the county include the National Park Service (Death Valley National Park), the Bureau of Land Management, U.S. Forest Service, and U.S. Department of Defense (China Lake Naval Weapons Center).

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 diagrams illustrate that a variety of land use designations set the scale, pattern, and types of development for each area of the county. In order 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 Bureau of Land Management, the State of California, the U.S. Forest Service, and Inyo County (see *Figure 2.1*).

U.S. Highway 395 currently 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.

The majority of 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 travels through a large portion of land owned by the Bureau of Land Management. Except for a few residential parcels and one agricultural parcel sprinkled along the highway, the majority of the land is vacant. As the highway corridor travels through Olancha and Cartago, there are parcels designated as residential, agricultural, commercial, and industrial sprinkled along the highway. Once past Cartago, most of the land is vacant, undeveloped, or owned by the 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 or commercial developments planned in the project area. The percentage of the vacant housing units in Olancha and Cartago is higher than the county and state average by 19.4 percent and 18.4 percent respectively. 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 is using 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 the alternatives would require an additional 60 acres for a borrow site that would be used to provide soil and road materials for the project.

Table 2-2 Right-of-Way Impacts

Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4	No-Build Alternative
130 acres	257acres	320 acres	271 acres	517 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 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 & 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 Bureau of Land Management, the U.S. Forest Service, and the Los Angeles Department of Water & Power.

All build alternatives would result in the displacement of residential single-family houses, mobile homes, and/or businesses (*see Section 2.1.3.2*). However, 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, any alignment to the west would be constrained by the jurisdiction of the property owners: the Bureau of Land Management, the U.S. Forest Service, and the Los Angeles Department of Water & Power.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are needed.

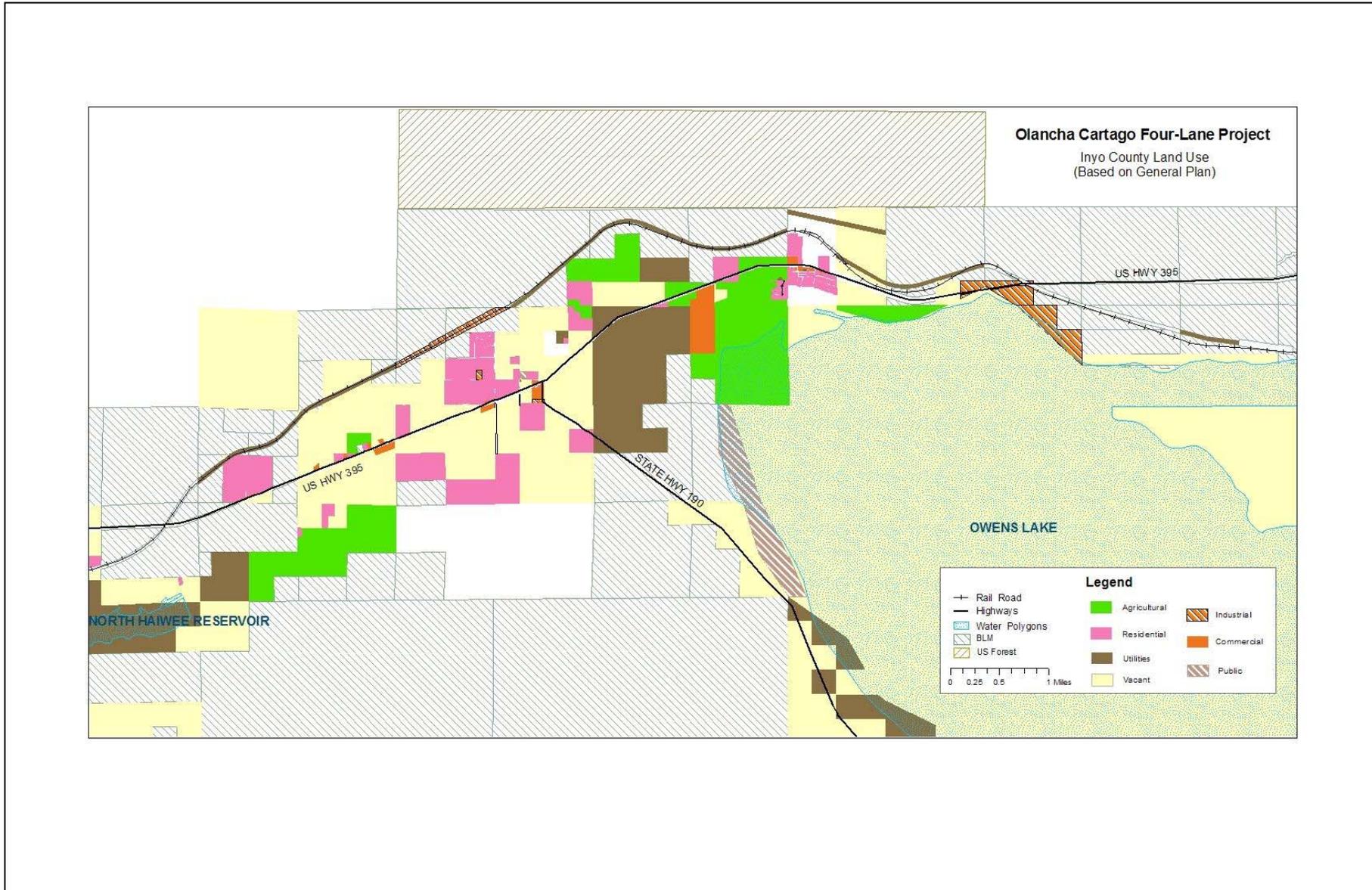


Figure 2.1 Land Use Map

2.1.1.2 Consistency with State, Regional, and Local Plans

Affected Environment

U.S. Highway 395 is the major north-south corridor through Inyo County. It is designated as a rural principal arterial, and 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.

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.

Environmental Consequences

The proposed project shows consistency and compatibility with the Inyo County General Plan and Inyo County Regional Transportation Plan. This proposed project is classified and ranked under the short-range (0-10 years) transportation improvements category, and has been partially programmed for State facilities in Inyo County. This project is identified in the Inyo County Regional Transportation Improvement Fund.

Alternatives 3 and 4 would change the terminus of State Route 190; therefore, Caltrans would seek approval from the California Transportation Commission for a route adoption or route re-designation of State Route 190, as required.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and mitigation measures are required.

2.1.2 Growth

Regulatory Setting

The Council on Environmental Quality regulations, which implement the National Environmental Policy Act of 1969, require evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The Council on Environmental Quality 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 also requires the analysis of a project's potential to induce growth. California Environmental Quality Act 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

Historically, population growth in Inyo County has been slow because it's 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 the 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 by providing frontage roads to serve existing driveways and local roads. Alternative 1 would not affect access points through the communities of Olancha and Cartago. 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.

2.1.3 Community Impacts

2.1.3.1 Community Character and Cohesion

Regulatory Setting

The National Environmental Policy Act 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 United States Code 4331[b][2]). The Federal Highway Administration in its implementation of the National Environmental Policy Act (23 United States Code 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest. 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, 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. Since 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

Population

According to the 2000 Census data, the population of Olancha is 134 people and the population of Cartago is 109 people. According to the Inyo County Planning Department, between 2000 and 2008, the population of Inyo County declined by 4.5 percent. The population of Inyo County is small and shrinking due primarily to a limited stock of privately owned land and few sources of employment. Olancha and Cartago population has declined by 1.4 percent.

Race/Ethnicity

The majority of the population is white (82 percent) and the percentages of all minorities within the project limits are below the averages of Inyo County except for the Hispanic or Latino. Hispanic or Latino residents within the study area are about 13.1 percent of the total population. Overall, this ratio is only slightly higher than the Inyo County average (12.6 percent).

Age of Population

Olancha and Cartago are generally younger than the county population as a whole. Using 2000 Census data, the median age in Olancha was 37 years, with nearly a third of the population under age 25, a quarter between 25 and 44 years old, and more than a third over age 45.

The age profiles of Cartago are very similar, though with a median age of just 28. Nearly a third of the population is under 18, more than a third between 18 and 44, about a third over 44.

County-wide, the population is generally older; the median age was 43 years, with about a quarter of the population under 18, fewer than 6 percent between 18 to 24, nearly a quarter from 25 to 44, more than 25 percent from 45 to 64, and the rest (almost 10 percent) 65 years or older.

Income and Poverty Level

The 2000 U. S. 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 average number of residents living below the federal poverty level in Olancha and Cartago is 7.8 percent and 5.1 percent respectively. This is well below the county average of 12.6 percent (see *Table 2-3*).

Table 2-3 Median Household Income and Poverty Level

Income Category	Olancha	Cartago	Inyo County
Median household income in 1999 *	\$30,000	\$34,375	\$35,006
Estimated median household income in 2007**	\$43,530	\$49,878	\$44,186
Residents below poverty level in 2007 (Percent)**	7.8	5.1	12.6

*Source; U.S. Census Bureau, *Census 2000 Summary, Files (SF 1) and (SF 3)*

** Source; *City-Data.com*, as of July 2007.

Family Households

Households in Olancha and Cartago are more likely to include minor children and they are slightly larger than is true for 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.

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 (see *Table 2-4*).

Table 2-4 Total Family Households

	Olancha	Cartago	Inyo County
Total Family Households	50	40	7,703
Family Households (percent)	76%	62.5%	64.1%
Average Family Size	3.13	3.36	2.88

Source: 2000 U.S. Census

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; whereas, Olancha has a mixture of homes and businesses on both sides of the highway.

Based on interviews, the Ranch House Café, located 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 owners of the Ranch House Café 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 owner of the Ranch House Café Restaurant. The owner affirmed that this restaurant was founded in Olancha in the early 1920’s, and has been operated by the current owner for about 20 years. Ms. Meylemans said, “This restaurant serves as a little oasis for people driving through the long way of Road 395.”

The Olancha Elementary School, 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 the 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 2.1.1.1 – Land Use Designations*).

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 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 to 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 6, Public Involvement.

No traditional community facilities, such as a community center, schools, churches, childcare centers, parks, banks, or grocery stores, were identified in Cartago.

Long-Term Residency

According to the 2000 Census, the percentage of homeowners and renters of Olancha and Cartago living in the same house since 1995 was comparable with Inyo County (see *Table 2-5*).

Table 2-5 Long-Term Residency

	Olancha	Cartago	Inyo County
Same house since 1995	56%	50%	52.9%

Source: 2000 U.S. Census

Home Ownership

According to the 2000 Census, owner-occupied households in Olancha and Cartago were on average with Inyo County (see *Table 2-6*).

Table 2-6 Owner Occupied Households

	Olancha	Cartago	Inyo County
Same house since 1995	64%	65%	65.9%

Source: 2000 U.S. Census

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 mainly located within businesses surrounding U.S. Highway 395 between Olancho and Cartago. Table 2-7 shows the types of occupations for the employed residents within the project study area as of 2000.

Table 2-7 Occupation Types

Occupation	Olancho		Cartago		Inyo County	
	Number	Percent	Number	Percent	Number	Percent
Management, professional, and related occupations	10	14.3	7	13.7	2,212	27.6
Service occupations	12	17.1	10	19.6	1,865	23.3
Sales and office occupations	25	35.7	5	9.8	1,994	24.9
Farming, fishing, and forestry occupations	7	10.0	0	0	117	1.5
Construction, extraction, and maintenance occupations	4	5.7	10	19.6	957	12.0
Production, transportation, and material moving occupations	12	17.1	19	37.3	862	10.8
Total employed residents -16 years and over	70	100	51	100	8007	100
Unemployment rate	-	9.0	-	13.1	-	9.4

Sources: U.S. Census Bureau, Census 2000 Summary

Based on the 2000 Census data, 5.6 percent of the population 16 years of age or older are unemployed in Cartago, however 37 percent of the population 16 years of age or older is not considered in the labor force. Likewise, in Olancho 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 are unemployed, and 39 percent is not considered in the labor force.

According to the most recent information from the California Employment Development Department, the unemployment rate in Olancho is 0 percent and in Cartago 24.4 percent. In Inyo County the total labor force is reported to be 9,860 persons. Of this number, 8,820 are employed while 1,040 are reportedly unemployed. The unemployment rate has increased from 5.3 percent in 2000 to approximately 10.5 percent in 2010.

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 the Excel Bridge Manufacturing, Big Pine Distributors, and Lacey Livestock are also found within the project study area. Table 2-8 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 2-8 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

Based on Caltrans environmental field staff observations and data from Caltrans Design

Environmental Consequences

Alternatives 1, 2 and 2A would displace the post office, however Caltrans will work with the U.S. Postal Service to make sure mail service would not be interrupted.

Alternatives 2 and 2A would have the widest footprint and would displace the greatest number of residences and businesses along U.S. Highway 395 within the communities of Olancha and Cartago. The Right-of-Way Relocation Impact Statement that was prepared for this project shows that there are available housing and business resources for the residents and business owners displaced by this project. Relocation assistance would also be available for businesses and residences affected by these alternatives (*see Section 2.1.3.2*). Additionally, tree removal and a wider roadway would change the aesthetic character of the two communities but these impacts would be mitigated (*see Section 2.1.6*). 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 impact one less business and one less residence in Cartago.

Alternatives 3 and 4 would bypass both Olancha and Cartago. The citizens from these two communities have expressed a concern for the future of their businesses at several public meetings/open houses for the project if one of the bypass alternatives is chosen as the preferred alternative.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and mitigation measures are required for community character and cohesion except for those mentioned in Section 2.1.6 for tree removal.

2.1.3.2 Relocations and Real Property Acquisition

Regulatory Setting

The National Environmental Policy Act of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 United States Code 4331(b)(2)]. The Federal Highway Administration in its implementation of the National Environmental Policy Act [23 United States Code 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest. 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, 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. Since 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

All proposed 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 consists of scattered single-family houses and mobile homes. An estimated 65 percent of the residents within the two communities of Olancha and Cartago are owners of their homes (*see Table 2.6*). 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 Draft Relocation Impact Statement provides a summary of the estimated number of residential and business relocations for each proposed alternative.

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 Draft Relocation Impact Statement.

Table 2-9 Summary of Relocations

Total Displacements	Alternatives				
	1	2	2A	3	4
a. Total Residential Units (Single-family and Mobile Homes)	7	6	7	4	1
Estimated Total of Displaced Residents *	21	18	21	12	3
b. Total Business Units	5	9	8	3	None
Estimated Number of Displaced Employees**	13	10	10	4	None
Total Units Relocations (a + b)	12	15	15	7	1

Source: Draft Relocation Impact Statement

* The estimate of residential displacements is based on an average of 3.0 residents per household as determined by the Department of Finance Demographic Research Unit.

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

Alternative 2 and 2A displaces the most residents and greatest number of businesses, while Alternative 4 displaces the fewest. Table 2-10 shows the estimated impacts to businesses and residences based on the preliminary 2007 right-of-way estimates. Alternatives 1, 2 and 2A would displace the post office, however Caltrans will work with the U.S. Postal Service to make sure mail service would not be interrupted.

Table 2-10 Estimated Impacts to Businesses and Residences

Business or Residence Location	Type	Estimated Impacts	Alternative Affecting Property
APN: 33-410-00	RV & mobile home park	Minor disruption to business / small right-of-way acquisition (.13 acre)	Alternative 1 Alternative 3
APN: 22-110-41	Abandoned business and storage yard	Right-of-way acquisition (1.38 acres)	Alternative 1, Alternative 2, Alternative 2A
APN: 33-490-01	Residence	Right-of-way acquisition (.05 acre)	Alternative 1
APN: 33-460-19	2 abandoned businesses, residence, and storage building	Right-of-way acquisition (.27 acres)	Alternative 1, Alternative 2, Alternative 2A
APN: 33-100-08	Active business	Right-of-way acquisition (.05 acre)	Alternative 1
APN: 33-080-03	Abandoned commercial and storage buildings	Right-of-way acquisition (.28 acre)	Alternative 1
APN: 33-080-36	Barn	Right-of-way acquisition (.26 acre)	Alternative 1 Alternative 2
APN: 33-080-15	Post office	Right-of-way acquisition (total acquisition)	Alternative 1 Alternative 2 Alternative 2A
APN: 33-080-14	Active business	Right-of-way acquisition (total acquisition)	Alternative 1 Alternative 2
APN: 33-080-34	1 active business, 2 residences, and outbuilding	Right-of-way acquisition (2.11 acres)	Alternative 1 Alternative 2 Alternative 3 Alternative 4
APN: 33-080-27	2 residences and outbuildings	Right-of-way acquisition (2.40 acres)	Alternative 1 Alternative 2 Alternative 2A
APN: 29-200-10	Abandoned commercial / storage building	Right-of-way acquisition (.80 acre)	Alternative 1 Alternative 2 Alternative 3
APN: 33-080-38	Abandoned business, storage building, dilapidated structures	Right-of-way acquisition (1.08 acres)	Alternative 1 Alternative 2
APN: 20-200-27	Residence and outbuildings	Right-of-way acquisition (total acquisition)	Alternative 2A
APN: 33-120-04	Active business and	Right-of-way	Alternative 3

Business or Residence Location	Type	Estimated Impacts	Alternative Affecting Property
	residence	acquisition (total acquisition)	
APN: 33-390-01	Residence and outbuildings	Right-of-way acquisition (total acquisition)	Alternative 3
APN: 33-380-05	Residence and outbuildings	Right-of-way acquisition (total acquisition)	Alternative 3

Avoidance, Minimization, and/or Mitigation Measures

The Draft Relocation Impact Statement shows the relocation resources that are available for displaced people. Table 2-11 summarizes the relocation resources available for displaced residential and non-residential, and includes the nearest full-services communities of Lone Pine and Ridgecrest. As well, 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.

Table 2-11 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: Draft Relocation Impact Statement

A thorough investigation of the real estate market was performed for the area surrounding the project limits, which includes not only Olancho 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.

Funding would be available to relocate or re-establish 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*).

2.1.3.3 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 Executive 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 2007, this was \$21,203 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. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

Affected Environment

The proposed alternatives would pass through several populated blocks in Census Tract 6, within Block Group 3. Figure 2.2 shows the 2000 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 2-12 shows the populated blocks within the study area that may be affected by each build alternative.

Table 2-12 Populated Blocks within the Study Area

Alternatives	Populated Blocks Potentially Affected
1, 2, and 2A	041, 042, 083, 084, 097, 102, 107, and 109
3	042, 083, 084, 093, 095, and 109
4	042, 083, 107, 125, and 126

Source, 2000 U.S. Census Bureau, American Fact Finder

Table 2.14 provides the ethnic data of the populated census blocks potentially affected by the build alternatives.

Based on data from the 2000 U.S. Census Bureau, there are 305 people living within the determined study boundaries of the project area.

The majority of the population is white (82 percent) 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 13.1 percent of total population, is just slightly higher than the Inyo County average (12.6 percent). However, when analyzing the block data available individually, blocks 041, 078, 080, 094, and 095 have higher-than-average Hispanic or Latino populations.

Block 041 is in Cartago. This block runs parallel to U.S. Highway 395 north from Cartago Creek. The total population of the block is 27 people: 12 white and 15 Hispanic or Latino. None of this population would be directly affected by the project because all proposed build alternatives are designed to the west of this block.

Block 078 is also in Cartago, on the east side of U.S. Highway 395. The streets of Whitney, Cartago, and Mojave border this block. There are 11 people in this block: four white and seven Hispanic or Latino. The proposed build alternatives would not affect this population because all proposed build alternatives are designed to the west of this block.

Block 080 is in Cartago, on the east side of U.S. Highway 395. Block 079 and the streets of Owens, Cartago, and Mojave border this block. The total population is one person, and that person is identified as Hispanic or Latino. The proposed build alternatives would not affect this population because all proposed build alternatives are designed to the west of this block.

Block 094 is located in Olancha between the Los Angeles Aqueduct and 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 36 people: 26

white, six Hispanic or Latino, and four some other (unstated) race. Alternative 3 is the only build alternative that has a potential to skirt this development but it does not appear any residences would be directly affected even by Alternative 3.

Block 095 is also located in Olancha, on the west side of U.S. Highway 395, and bordered by Shop Street, the Old State Highway, and Fall Road. The total population of this block is 25 people: 16 are white, one is American Indian/Alaska Native, and seven are Hispanic or Latino, with one some other (unstated) race. The proposed build alternatives would not affect this population because all proposed build alternatives are designed to the west or east of this block.

Income and Poverty Level

The 2000 U. S. Census data reports the median household income of Olancha and Cartago was \$30,000 and \$34,375, respectively. The median household incomes of Cartago are close to Inyo County’s average median household income of \$35,006. Olancha is about 18 percent below the County average.

Table 2-13 Household Income and Poverty Level

	Olancha	Cartago	Inyo County
Median household income in 1999 *	\$30,000	\$34,375	\$35,006
Estimated median household income in 2007**	\$43,530	\$49,878	\$44,186
Residents below poverty level in 2007 (Percent)***	7.8	5.1	12.6

*Source; U.S. Census Bureau, Census 2000 Summary

** Source; City-Data.com, as of July 2007.

*** Source: California Employment Development Department, April 2009.

When the two communities’ median household incomes are compared to Inyo County’s average of \$44,186, Cartago’s median household income is higher and Olancha’s median household income is only slightly lower. Table 2-13 shows the median household income for 1999 and estimated median household income for 2007 for Olancha, Cartago, and Inyo County. The two communities have fewer people living below the poverty level than Inyo County.

Table 2-14 Ethnicity Data

	Census Tract 6 - Block Group 3 - Inyo County, California																					
	Blocks (3000)																					
	037	041	042	073	074	078	080	083	084	088	093	094	095	097	102	107	109	115	125	126	Total	%
Total population	32	27	25	23	15	11	1	32	32	2	22	36	25	6	2	2	7	1	2	2	305	100
a. One race alone																						
White	28	12	25	20	15	4	0	32	30	2	22	26	16	6	1	2	5	1	2	1	250	82.0
Black or African American	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
American Indian Alaska Native	3	0	0	3	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	1	10	3.3
Asian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Native Hawaiian or Other Pacific Islander	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
b. Some Other Race alone	1	15	0	0	0	7	1	0	1	0	0	10	8	0	0	0	2	0	0	0	45	14.7
c. Total of a + b	32	27	25	23	15	11	1	32	32	2	22	36	25	6	2	2	7	1	2	2	305	100
d. Hispanic or Latino alone	1	15	0	0	0	7	1	1	1	0	0	6	7	0	0	0	1	0	0	0	40	13.1

Source, 2000 U.S. Census Bureau, American Fact Finder
Shaded columns are discussed in Section 2.1.3.3.

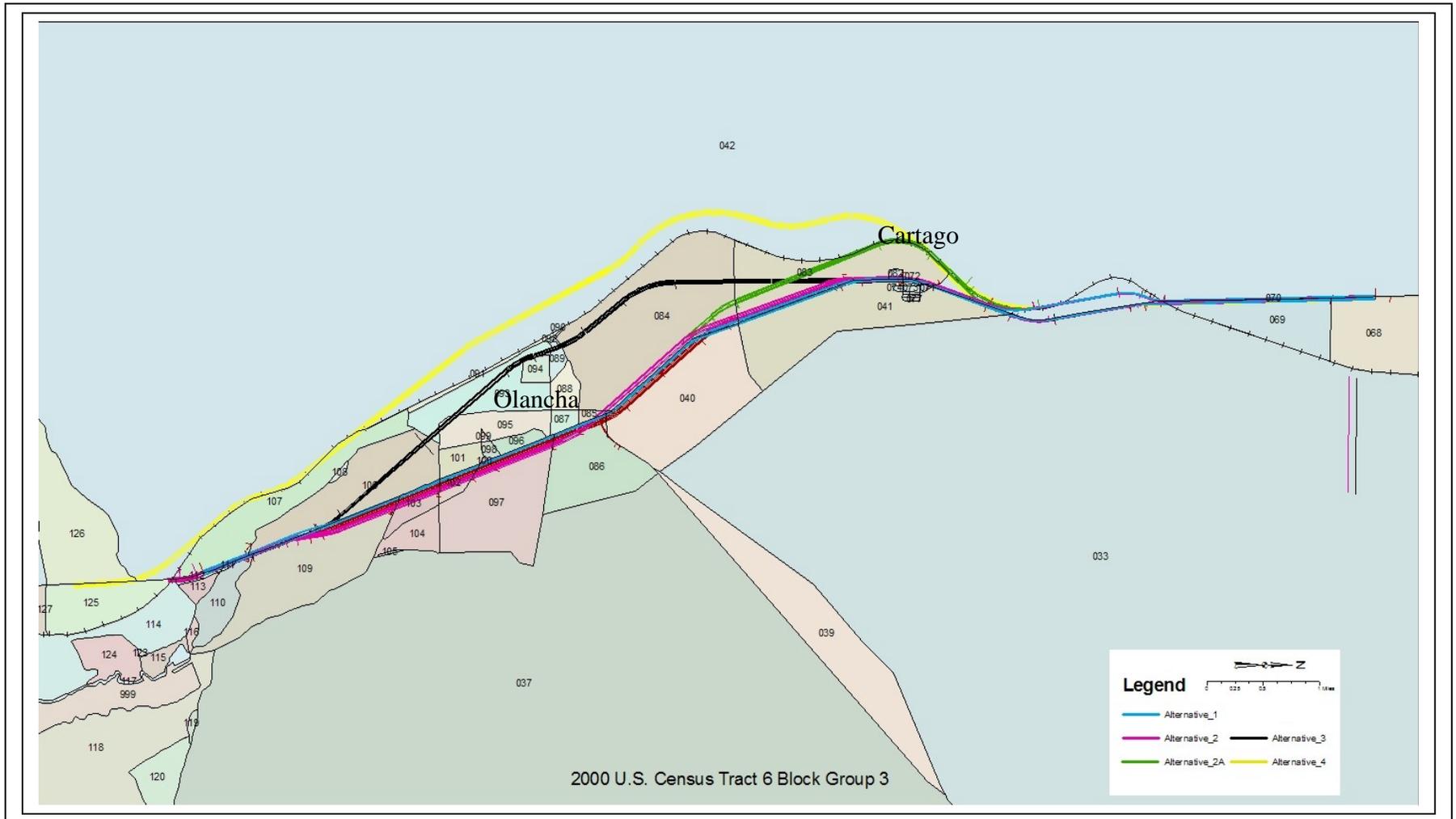


Figure 2.2 Census Block

Environmental Consequences

Caltrans staff supplemented the 2000 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. The field analysis, resident interviews, and the latest census did reveal some census blocks have a higher-than-average Hispanic or Latino population.

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.

2.1.4 Utilities/Emergency Services

Affected Environment

Emergency Services

Inyo County Sheriff's Department, with offices located in Lone Pine; provides law enforcement within the study area. A Sheriff's substation is one of the major public services found in Olancha. 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 provides 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 there is a need.

Utilities

The Los Angeles Department of Water & 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 would have a beneficial impact on fire protection, law enforcement, emergency, and other public services. In addition, the project would 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. Construction activities may temporarily disrupt delivery of emergency services.

Utilities

The proposed project would require the relocation of utility facilities. Caltrans right-of-way division prepared a preliminary data sheet for utility relocations for each alternative. The utility relocation table (*Table 2-15*) summarizes the total electrical poles, the fiber optic lines, and the 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 as of the year 2008 for each proposed alternative.

Table 2-15 Utility Relocations

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

* The cost estimate for the utility relocation (State's Share) as of the current value for Year 2008
Source; Caltrans, Right of Way Data Sheet March 16, 2010

Avoidance, Minimization, and/or Mitigation Measures

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 & 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.

2.1.5 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.

Caltrans and the Federal Highway Administration are committed to carrying out the 1990 Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public would be provided to persons with disabilities.

Affected Environment

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. Secondly, this corridor has major recreational uses. 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 comprised 3.2 percent of the vehicle mix. It also found that 36 percent of the traffic originated in Southern California. A summary of the current and projected traffic data is presented in Table 2.16, based on 2008 traffic volume counts. The future traffic volumes are based on a growth rate of 1.3 percent per year.

Table 2-16 Traffic Data within Project Limits

	2008	2015	2025	2035
Average Annual Daily Traffic	5600	6130	6980	7940
Percent Trucks	21.5	-	-	
20-Year Growth Rate	-	1.3%	1.3%	1.3%

January 2010 Caltrans Traffic Studies

According to the data in Table 2-16, increasing traffic volumes can be expected within this segment on U.S. Highway 395 through 2035.

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 2035. Current and projected levels of service are presented in Table 2-17.

Table 2-17 Level of Service within Project Limits

	2010	2015	2035
Level of service with no improvements made	D	D	E
Level of service with project	-	A	A

January 2010 Caltrans Traffic Studies

This is especially evident on weekends and holidays when traffic volumes are extremely heavy. As slow-moving trails of vehicles back up, drivers become frustrated and attempt to pass, often unsafely. Complicating the situation is the relatively high volume of slower moving vehicle using the route, with trucks and recreational vehicles making up more than a quarter of the traffic.

Slower-moving trucks and recreational vehicles tend to accentuate congestion. Barrier striping prohibits passing on U.S. Highway 395 in more than half of the project limits. In areas without barrier striping, the high traffic volumes for a two-lane highway themselves restrict passing opportunities. The congestion and the resulting longer travel time and their cumulative impacts on driver fatigue and behavior create frustrated drivers willing to attempt unsafe maneuvers.

Accident information is summarized in Table 2-18. The Traffic Accident and Survey Analysis System Table B (an accident data sheet provided by the Caltrans traffic investigation section) indicated that 43 accidents occurred on this portion of U.S. Highway 395 during a three-year period ending December 31, 2008. The fatal accident rate is higher than the statewide average.

Table 2-18 Traffic Accidents Information

(January 1, 2006 through December 31, 2008)

Type of Accidents	Number	Accident Rate/Million Vehicle Miles	
		Study Area	Statewide
Fatal	3	0.036	0.024
Injury	15	0.22	0.34
Property Damage	25		
Total	43	0.52	0.78*

*Total Accident Rate/Million Vehicle Miles includes property damage accidents not shown.

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Pedestrian and Bicycle Access

U.S. Highway 395 currently has no sidewalks or designated pedestrian crossings in the project area. No pedestrian facilities exist along U.S. Highway 395 within the project area. Since services are so scattered 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 wouldn't change, as the expressway designation would still allow bicycle usage.

Public Transportation

No passenger or freight rail service currently exists in Inyo County, and air travel is very limited. 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 Lancaster, California. Most visitors arrive or pass through the county via the highway system.

Environmental Consequences

Access, Circulation, and Parking

The proposed 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. Alternative 1 would provide median crossovers that will facilitate circulation between the existing highway and the new U.S Highway 395, as well as access across the new highway. Traffic along State Route 190 will not change.

U.S. Highway 395 is recognized as a Class III Bike Route in the Inyo County Bikeways Master Plan. This wouldn't change, as the expressway designation would still allow bicycle usage. 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 a majority of commuter generated trips originate from communities other than Olancha and Cartago. The ten-foot outside shoulders and graded side slopes will preserve the existing parking. At the very least, Alternative 1 would remove parking in front of the Ranch House Café, which may require construction of replacement parking.

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, and 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 District 6 Transportation Management Center and Caltrans District 9's Traffic Branch.

2.1.6 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 United States Code 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act [23 United States Code 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

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

Affected Environment

This project is located in an area where the high desert meets the high Sierra. Dominating the view is the Sierra Nevada and especially Olancho Peak known as the “Southern Sentinel of the Sierras”, with an elevation of 11,800 feet above sea level. To the east is the dry lakebed of the 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. Olancho 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 Sierras.

Environmental Consequences

This project would have little impact on the visual quality of the surrounding regional scenery. Expanding the existing two-lane highway to four lanes and providing more open space between vehicles, may offer motorists a clearer view of the Sierra peaks, distant mountain ranges, and lakebed.

The visual impacts that would occur would be a result of disturbance and removal of native vegetation during construction activities. Alternatives 1, 2, and 2A would result in the loss of mature cottonwood trees adjacent to U.S. Highway 395 near Olancha. 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 (see *Section 2.3.1* for more information about trees). Measures to preserve and protect existing vegetation would greatly enhance post construction visual quality. Altering landforms by creating cuts and fills in the adjacent terrain during construction has the potential to create permanent visual impacts.

Avoidance, Minimization, and/or Mitigation Measures

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

- Replant trees and shrubs to ultimately improve and restore the visual quality of the project area. The replanting would include a combination of seeding and container planting vegetation (planting vegetation already started from containers). A minimum 3-year plant establishment period would be included to assure the success of the revegetation. Replaced trees and shrubs would be strategically located to blend with and enhance the existing plant communities.
- When structures are added, types, materials, colors, and textures would be selected to blend with the adjacent natural landscape components (soil, vegetation, rock, etc.) to the greatest practical degree.
- Cut and fill slopes would be contour graded to a non-uniform profile to blend with adjacent slopes. Slope grades would 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.

- The use of metal beam guardrail, or other safety methods would be considered to preserve selected rows of mature trees in lieu of recovery zone areas.
- Topsoil/duff would be collected and stored for placement on disturbed areas prior to replanting.
- The native seed mix, application rates, and planting methods would be determined by or approved in cooperation with a Caltrans landscape architecture representative.
- Existing native vegetation would be protected and preserved wherever possible.

2.1.7 Cultural Resources

Regulatory Setting

“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, 2004, a Section 106 Programmatic Agreement among the Advisory Council, the Federal Highway Administration, the State Historic Preservation Officer, and Caltrans 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

A Historic Property Survey Report was completed in September 2003. Subsequent design changes—in particular, the addition of Alternative 4—prompted the completion of a Supplemental Historic Property Survey Report in January 2010.

Caltrans consulted archival sources and conducted field investigations to identify historic properties in the Area of Potential Effects.

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

Native American consultation efforts included contacts with the Native American Heritage Commission, the Owens Valley Indian Community. The Native American Community identified three main issues: Native American monitoring of archaeological excavations; avoiding disturbance to archaeological deposits that include Native American remains; and curation of artifacts recovered during the course of the project.

The Area of Potential Effects encompassed the areas within the existing and proposed right-of-way boundaries for all of the project alternatives, except where potential archaeological sites extended beyond the boundaries of the Area of Potential Effects. In those spots, the Area of Potential Effects extended beyond the proposed right-of-way and around the site boundaries.

The Historic Property Survey Report describes 175 cultural resources within the Area of Potential Effects. Seventy-one sites were determined to be exempt under a Programmatic Agreement with the California Office of Historic Preservation. The evaluations of 38 sites were postponed until the preferred alternative is selected, to avoid unnecessary disruption of these sites. Of the remaining 66 sites, seven had already been evaluated for eligibility for listing on the National Register of Historic Places. CA-INY-1317 was previously determined to be eligible for listing on the National Register of Historic Places. This prehistoric site contains stone debitage tools, projectile points, milling equipment, brownware sherds, bone tools and ornaments, incised stone, and beads.

Fifty-nine sites were evaluated for potential eligibility for listing on the National Register of Historic Places. Caltrans determined that seven of these sites are eligible for the National Register of Historic Places only for the purposes of this project due to their potential to address important research questions:

CA-INY-1991/H is a large prehistoric site dating back to AD 1425. 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, debitage, 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, debitage, 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.

Olancha Schoolhouse located on APN 33-080-07 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.

The State Historic Preservation Officer concurred with these eligibility determinations in his letter of May 2004 (See Appendix E).

The Supplemental Historic Property Survey Report identified 100 archaeological sites within the Area of Potential Effects. Of the 100 sites, three are previously listed as eligible on the National Register of Historic Places and the remaining 97 sites were evaluated for potential eligibility for listing on the National Register of Historic Places. The evaluations of 24 sites were postponed until the preferred alternative is selected, to avoid unnecessary disruption of these sites.

Caltrans determined that six of these sites are eligible for the National Register of Historic Places only for the purposes of this project due to their potential to address important research questions.

PLI-29 is a historical site associated with the construction of the Los Angeles Aqueduct or Southern Pacific Railroad and consists of a can and refuse dump; a three 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.

PLI-30 is a historic 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-Owens Branch Railroad.

PLI-31 is a historic 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-Owens Branch Railroad.

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, a portable milling slab, and human remains.

PLI-61 is a prehistoric site containing a rock clearing, several rock overhangs, a collection of boulders that appear grave-like in plan view, and a rock ring. Surface artifacts include flaked stone, pieces of pottery, and human remains.

PLI-74 is an ethnographic Native American cemetery location. Forensic dogs were used at the site during previous fieldwork, and several spots were identified as possibly containing human remains. These places include rough rock alignments on terraced flats and a cluster of boulders, all of which may represent burial features.

Environmental Consequences

The following cultural resources may be affected with the construction of each alternative.

Table 2-19 Affected Sites

Alternative 1	Alternative 2	Alternative 2A	Alternative 3	Alternative 4
CA-INY-1991/H	CA-INY-1991/H	CA-INY-1317	CA-INY-1991/H	CA-INY-1317
CA-INY-5967	CA-INY-5967	PLI-74	CA-INY-5967	PLI-29
CA-INY-5984	CA-INY-5984	PLI-71	CA-INY-5984	PLI-30
CA-INY-6021	CA-INY-6021	PLI-76	CA-INY-6021	PLI-31
CA-INY-6263	CA-INY-6263		CA-INY-6263	PLI-36
CA-INY-5350H	CA-INY-5350H		CA-INY-5350H	PLI-61
CA-INY-1317	CA-INY-1317		CA-INY-1317	PLI-71
PLI-74, PLI-71	PLI-74		PLI-74	PLI-74
PLI-76, PLI-88	PLI-71		PLI-71	PLI-88
Olancha	PLI-76		PLI-76	PLI-76
Schoolhouse	PLI-88		PLI-88	
	Olancha		Olancha	
	Schoolhouse		Schoolhouse	

The construction of Alternative 2A and 3 could also affect an additional 38 prehistoric sites. These sites would not be formally evaluated for the National Register unless one of these alternatives is selected, to avoid unnecessary disruption of these sites.

Alternative 4 could also affect an additional 24 prehistoric sites. These sites would not be formally evaluated for the National Register unless this is selected.

Avoidance, Minimization, and/or Mitigation Measures

Upon selection of the preferred alternative, the sites requiring further evaluation for eligibility for the National Register will be evaluated.

Avoiding cultural resources is always the preferred measure. Cultural resources that can be avoided during construction will be designated as environmentally sensitive areas. An Environmentally Sensitive Area Action Plan would be implemented to protect eligible sites from construction impacts associated with this project.

Historic properties that cannot be avoided during construction and would be adversely affected will be mitigated using various methods such as data recovery excavations, report preparation or public outreach.

The Federal Highway Administration will consult with State Historic Preservation Office for No Adverse Effect without Standard Conditions, or a Memorandum of Agreement in compliance with the Section 106 Programmatic Agreement will be established between the Federal Highway Administration and the State Historic Preservation Office. This Memorandum of Agreement will outline the specific requirements for mitigating any potential adverse effects to cultural resources. Mitigation requirements will likely include data recovery, artifact analysis, reporting, and public outreach in compliance with the Secretary of Interior Standards set forth at 36 Code of Federal Regulations Part 800. If cultural materials were discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist could 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. At this time, the person who discovered the remains would contact District 6 Environmental Branch so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable.

2.2 Physical Environment

2.2.1 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, the Federal Water Pollution Control Act was amended, making the discharge of pollutants to the waters of the United States from any point source unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System permit. The Federal Water Pollution Control Act was subsequently amended in 1977, and was renamed the Clean Water Act. The act, as amended in 1987, directed that storm water discharges are point source discharges. The 1987 Clean Water Act amendment established a framework for regulating municipal and industrial storm water discharges under the National Pollutant Discharge Elimination System program. Important sections of the act are as follows:

Sections 303 and 304 provide for water quality standards, criteria, and guidelines.

Section 401 requires an applicant for any federal project that proposes an activity, which may result in a discharge to waters of the United States to obtain certification from the State that the discharge will comply with other provisions of the act.

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 United States. Regional water quality control boards administer this permitting program in California. Section 402(p) establishes addresses storm water and non-storm water discharges.

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

The objective of the act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

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 otherwise) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state.

The State Water Resources Control Board and regional water quality control boards are responsible for establishing the water quality standards (objectives) required by the act, and regulating discharges to ensure that the objectives are met. Details regarding water quality standards in a project area are contained in the applicable Regional Water Quality Control Board Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are state listed in accordance with Clean Water Act Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the act requires establishing total maximum daily loads ("limit"). These limits establish allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Quality Control Board administers water rights, water pollution control, and water quality functions throughout the state. Regional water quality control boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System Program

The State Water Quality Control Board adopted Caltrans Statewide National Pollutant Discharge Elimination System Permit (Order No. 2009-0009-DWQ) on July 15, 2010. This permit covers all Caltrans rights-of-way, properties, facilities, and activities in the State. National Pollutant Discharge Elimination System permits establish a five-year permitting time frame. National Pollutant Discharge Elimination System permit requirements remain active until a new permit has been adopted.

In compliance with the permit, Caltrans developed the Statewide Storm Water Management Plan to address storm water pollution controls related to highway

planning, design, construction, and maintenance activities throughout California. The Statewide Storm Water Management Plan 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 best management practices. The proposed project will be programmed to follow the guidelines and procedures outlined in the 2003 Statewide Storm Water Management Plan to address storm water runoff or any subsequent Statewide Storm Water Management Plan version draft and approved.

Municipal Separate Storm Sewer System Program

The U.S. Environmental Protection Agency defines a Municipal Separate Storm Sewer System 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 are designed or used for collecting or conveying storm water. As part of the National Pollutant Discharge Elimination System program, the U.S. Environmental Protection Agency initiated a program requiring that entities having municipal separate storm sewer systems apply to their local regional water quality control boards for storm water discharge permits. The program proceeded through two phases. Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or greater. Phase II expanded the program to municipalities with populations less than 100,000.

Construction Activity Permitting

Section H.2, Construction Program Management of the Department's National Pollutant Discharge Elimination System permit states: "The Construction Management Program shall be in compliance with requirement of the NPDES General Permit for Construction Activities (Construction General Permit)". Construction General Permit (Order No. 2009-009-DWQ, adopted on September 2, 2009, will become effective on July 1, 2010. The permit will regulate storm water discharges from construction sites that result in a disturbed soil area of one acre or greater, and/or are part of a common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit.

The newly adopted permit separates projects into Risk Levels 1 – 3. 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. Risk levels are determined during the design phase and are based on potential erosion and transport to receiving waters. Applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan.

Caltrans Statewide National Pollutant Discharge Elimination System Permit requires Caltrans to submit a Notice of Construction to the regional water quality control board to obtain coverage under the construction general permit. Upon project completion, a Notice of Completion of Construction is required to suspend coverage. This process will continue to apply to Caltrans projects until a new Caltrans Statewide National Pollutant Discharge Elimination System Permit is adopted by the State Water Resources Control Board. A notice of construction or equivalent form will be submitted to the regional water quality control board at least 30 days prior to construction if the associated disturbed soil area is one acre or more. In accordance with the Department's Standard Specifications, a Water Pollution Control Plan is used for projects with disturbed soil areas of less than one acre.

During the construction phase, compliance with the permit and Caltrans' Standard Special Conditions requires appropriate selection and deployment of both structural and non-structural best management practices. These best management practices must achieve performance standards of best available technology economically achievable/best conventional pollutant control technology (BAT/BCT) to reduce or eliminate storm water pollution.

Affected Environment

A Water Quality evaluation was completed in August 2008.

The project is located in the Lower Owens Hydrologic area (Hydrologic Unit # 603.03). There are three predominant streams within the project area, and a number of other unnamed streams cross the project area. The named streams include Cartago Creek, Ash Creek and Olancha Creek. The streams primarily flow eastward towards 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

A temporary reduction in water quality may occur during the construction of the project. This only applies to storm water flowing through the work area. The impacts would be temporary. There would be no long-term impacts as a result of this project.

The project proposes building new concrete bridges across the Los Angeles Aqueduct, and installing concrete box culverts and smaller pipe culverts throughout the project limits to promote drainage.

There are no apparent groundwater wells that would be compromised by the proposed construction activities in this area. Wells found during construction would be abandoned in accordance with Inyo County standards and permits. Well abandonment for a small domestic well would cost approximately \$3,000, which would be added to the project costs.

Since the potential water quality impacts would be correctly identified and mitigated by best management practices, it is unlikely that the proposed project would 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 proposed project should not produce significant 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.

A Storm Water Pollution Prevention Plan would be prepared by the contractor and implemented during construction to the satisfaction of the resident engineer. This plan would identify the sources of sediment and other pollutants that affect the quality of storm water discharges. The plan would 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.

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

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

2.2.2 Geology/Soils/Seismic/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.

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 would be built 3600 to 4000 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, however 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 .7 mile and 3.1 miles respectively, west of the project area. The Owens Valley Fault is considered active while 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. This project would have little impact on the visual quality of the surrounding regional scenery and topographic features (see Section 2.2.1 *Visual/Aesthetics*). 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 would design and construct the structures in this project to seismic standards. Soil types and topography would be considered in the design and construction of this project. Visual resources would be mitigated according Section 2.1.6 (Visual/Aesthetics) of this document, and erosion control would be managed according to *Section 2.2.1 Water Quality* of this document.

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 or funded projects (such as the Antiquities Act of 1906 [16 U.S. Code 431-433], Federal-Aid Highway Act of 1935 [20 U.S. Code 78]). Under California law, paleontological resources are protected by the California Environmental Quality Act, 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, dated March 15, 2010, for this project.

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 would be built 3600 to 4000 feet above sea level on the alluvial fans that flow out into the Owens Valley. The alluvial fans are primarily composed of gravel, sand, silt and clay.

Environmental Consequences

Paleontological resources have been known to exist in this type of alluvial fan. In general, the probability of encountering fossils is ranked as fairly low for shallow excavations, becoming significantly higher with deeper excavations. Fossil specimens have been recovered at locations near the project limits and excavations for the proposed project appear likely to affect important paleontological resources of scientific interest.

The 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 borrow site would be mined to a depth of approximately 10 feet deep. The borrow site and construction crossings and bridges are most likely to affect paleontological resources.

Avoidance, Minimization, and/or Mitigation Measures

Further studies will be necessary to determine if mitigation is required. If necessary, Caltrans would implement a well-designed paleontological resource mitigation plan following Caltrans guidelines to salvage fossil specimens during construction excavation for this project. Implementing a well-designed paleontological resource mitigation plan could minimize any adverse impacts to paleontological resources. Proper paleontological monitoring and mitigation could actually result in the beneficial effects on paleontological resources through the discovery of fossils that would not have been exposed without construction and, therefore, would not have been available for study.

2.2.4 Hazardous Waste or Materials

Hazardous Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health, and land use.

The main federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, often referred to as Superfund, is to clean up contaminated sites so that public health and

welfare are not compromised. The Resource Conservation and Recovery Act provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include the following:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety & Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

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

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Affected Environment

Caltrans prepared an Initial Site Assessment for this project in January 2007. Caltrans updated the Initial Site Assessment by preparing an addendum, dated June 15, 2009, and March 17, 2010.

Caltrans staff surveyed 266 parcels to identify hazardous waste issues. The majority of the parcels are vacant land owned by Bureau of Land Management, Los Angeles Power and Water, 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 formally 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 Alternative 1, 2, and 2A:

- APN: 33-080-14 is a former gasoline station and according to Inyo County Environmental Health Department, contains leaking gasoline storage tanks.
- APN: 33-080-27C is a former gasoline station. According to 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 Alternative 3:

- APN: 33-490-02A is vacant land that had previously been used as a landing strip called the Adamson Landing Field. Records suggest that there were barrels of sodium sulfide powder buried on site near the north end of the landing strip. The barrels are believed to be within the project footprint of Alternative 3.

Additionally, buildings and structures throughout the project may contain asbestos and lead-based paint.

Avoidance, Minimization, and/or Mitigation Measures

Investigation and remediation for these types of hazardous waste sites is considered routine and could add between \$50,000 and \$130,000 per location to the cost of the project. Further studies will be conducted to identify the existence and extent of

hazardous waste impact on the selected alternative. Details of the impacts associated with the selected alternative will be provided in the Final Environmental Document. Caltrans will avoid as many of these sites as possible and where these sites are unavoidable, Caltrans will coordinate the 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.

2.2.5 Air Quality

Regulatory Setting

The Clean Air Act, as amended in 1990, is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the concentration of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. Standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), lead (Pb), and sulfur dioxide (SO₂).

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

Regional level conformity is concerned with how well the region is meeting the standards set for carbon monoxide, nitrogen dioxide, ozone, and particulate matter. California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the Regional Transportation Plan, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as Great Basin Unified Air Pollution Control District and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation Plan is in conformity with the State

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

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

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 2.3). 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 CFR 93.126. The project is included in Inyo County Regional Transportation Plan and Transportation Improvement Plan (Adopted on April 22, 2009), and conforms to the Great Basin Unified Air Pollution Control District State Implementation Plan approved in 1998.

The county is an attainment area for State and Federal PM₁₀ standards except for two areas: the Owens and Searles Valleys. The Owens and Searles Valleys are nonattainment areas 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 PM₁₀ that includes mitigation measures designed to minimize windblown dust from Owens dry lake. The plan does not include any measures to reduce PM₁₀ from paved or unpaved roads because roads are not considered a significant contributor to Inyo County's existing PM₁₀ 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 PM₁₀ emissions from mobile sources and transportation-related activities in the planning area. However, fugitive dust from construction-related activities along U.S. Highway 395 has caused significant dust events in the planning area. For transportation conformity purposes, PM₁₀ emissions from construction-related activities would 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 would be subject to District Rules 400 and 401 for controlling fugitive dust.

Project Level Conformity

For federal standards, the project area is classified as attainment for ozone and attainment/maintenance for particulate matter (PM₁₀). For state standards, the project area is classified as non-attainment for carbon monoxide and non-attainment for particulate matter (PM₁₀) (*see Table 2.20*).

Caltrans consulted with the Environmental Protection Agency and the Federal Highway Administration in March 2010, and both felt this project was not a project of air quality concern. The Great Basin Unified Air Pollution Control District has asked for construction-related PM₁₀ modeling to be conducted, and that is currently underway.

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 significant carbon monoxide impacts would occur as a result of the proposed project.

Particulate Matter Hot Spot Analysis

Particles less than 10 micrometers (PM₁₀) 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 proposed project is located in an area classified as “attainment/maintenance” with respect to the federal standard for particulate matter. According to the California Air Resources Board, the highest PM₁₀ concentration measured near the project area in 2008 was 22.3 micrograms per cubic meter measured at the Olancha – Walker Creek Road monitoring station. The Federal Standard was exceeded five times since 2006 at this location. Most of the PM₁₀ problems in this area are associated with wind blown dust from the Owens dry lakebed.

During construction, the proposed project would 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 would be windblown dust generated during excavation, grading, and various other activities. The impacts of these activities would 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.

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) ^a	1 hour 8 hours	0.09 ppm 0.070 ppm	Non-attainment Non-attainment	– ^b 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	50 µg/m ³ 20 µg/m ³	Non-attainment	150 µg/m ³ –	Attainment / Maintenance	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 15 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

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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 <u>ppm</u> 0.030 <u>ppm</u>	Attainment	– 0.053 <u>ppm</u>	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 <u>ppm</u> – 0.04 <u>ppm</u> –	Attainment	– 0.5 <u>ppm</u> 0.14 <u>ppm</u> 0.030 <u>ppm</u>	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, 02/16/2010 (<http://www.arb.ca.gov/aqs/aaqs2.pdf>). Sonoma-Marín Area Rail Transit Draft Air Pollutant Standards and Effects table, November 2005, page 3-52. U.S. Environmental Protection Agency and California Air Resources Board air toxics websites, 05/17/2006

Notes: ppm = parts per million; µg/m³ = micrograms per cubic meter

^a Annual PM10 National Ambient Air Quality Standard revoked October 2006; was 50 µg/m³. 24-hr. PM2.5 National Ambient Air Quality Standard tightened October 2006; was 65 µg/m³.

^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.

Mobile Source Air Toxics

In addition to the criteria air pollutants discussed above for which there are National Ambient Air Quality Standards, the U.S. Environmental Protection Agency also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (for example, aircraft), area sources such as dry cleaners, and stationary sources, typically factories or refineries. Mobile Source Air Toxics are a subset of the 188 air toxics defined by the Clean Air Act. The Mobile Source Air Toxics are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

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.

This Initial Study/Environmental Assessment includes a basic analysis of the likely Mobile Source Air Toxics emission impacts of this project. However, available technical tools do not enable the ability to predict the project-specific health impacts of the emission changes associated with the alternatives in this document. Evaluating the environmental and health impacts from Mobile Source Air Toxics on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the Mobile Source Air Toxics health impacts of this project.

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of Mobile Source Air Toxics emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of Mobile Source Air Toxics 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 Mobile Source Air Toxics, it can give a basis for identifying and comparing the potential differences among Mobile Source Air Toxics 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 Mobile Source Air Toxics 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 Mobile Source Air Toxics emissions for the selected build alternative along the highway corridor, along with a corresponding decrease in Mobile Source Air Toxics emissions along the parallel routes. The emissions increase is offset somewhat by lower Mobile Source Air Toxics emission rates due to increased speeds; according to the Environmental Protection Agency's MOBILE6 emissions model, emissions of all of the priority Mobile Source Air Toxics 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 one percent, it is expected there would be no appreciable difference in overall Mobile Source Air Toxics 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 Mobile Source Air Toxics 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 Mobile Source Air Toxics 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 would include emissions generated by construction equipment, dust generated by grading and earthmoving 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 would not result in adverse or long-term conditions. Implementation of the following measures would reduce any air quality impacts resulting from construction activities:

- The construction contractor would comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 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 10 is directed at controlling dust.
- Water or dust palliative would be applied to the site and equipment as frequently as necessary to control fugitive dust emissions.
- Soil binder would be spread on any unpaved roads used for construction purposes and on all parking areas for project construction.
- Trucks would be washed as they leave the right-of-way as necessary to control fugitive dust emissions.
- Construction equipment and vehicles would 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 special dust control plan documenting sprinkling, temporary paving, speed limits, and expedited re-vegetation of disturbed slopes would be developed to minimize construction impacts to existing communities.

- Equipment and materials storage sites would be located as far away from residential and park uses as practical. Construction areas would be kept clean and orderly.
- To the extent feasible, environmentally sensitive areas would be established for sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited.
- Track-out reduction measures such as gravel pads would 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 would be covered and wet prior to transport, or adequate freeboard (space from the top of the material to the top of the truck) would be provided to reduce PM₁₀ and deposition of particulate during transportation.
- Dust and mud that are deposited on paved, public roads due to construction activity and traffic would be removed to reduce particulate matter.
- To the extent feasible, construction traffic would be routed and scheduled to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Mulch or plant vegetation would be installed as soon as practical after grading to reduce windblown particulate in the area.

Climate Change

Climate change is analyzed in Section 2.4. Neither the Environmental Protection Agency nor the Federal Highway Administration has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on the Federal Highway Administration's climate change website (<http://www.fhwa.dot.gov/hep/climate/index.htm>), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the CEQA chapter of this environmental document (*Section 2.4*) and may be used to inform the NEPA 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

2.2.7 Noise

Noise and Vibration

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

National Environmental Policy Act and 23 Code of Federal Regulations 772

For highway transportation projects with Federal Highway Administration involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations 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 contain noise abatement criteria that are used to determine when a noise impact would occur. The noise abatement criteria differ depending on the type of land use under analysis. For example, the criterion for residences (67 decibels) is lower than the criterion for commercial areas (72 decibels). The following

table lists the noise abatement criteria for use in the National Environmental Policy Act and 23 Code of Federal Regulations 772 analysis and Figure 2.3 shows the noise levels of typical activities.

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.

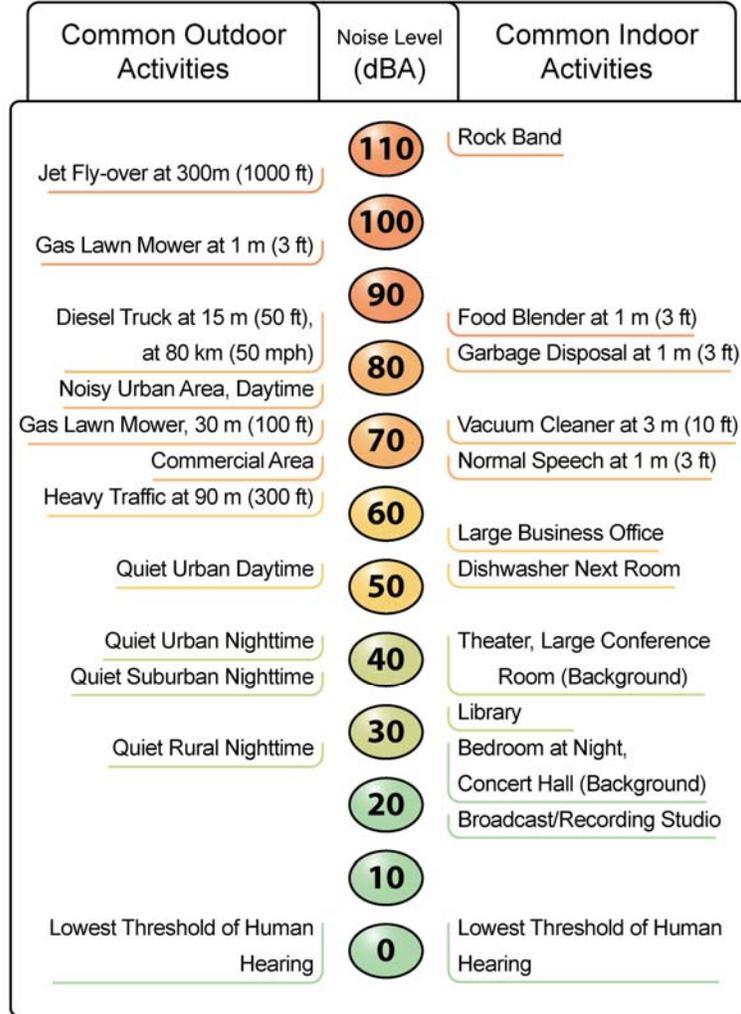


Figure 2.3 Typical Noise Levels

In accordance with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, August 2006, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12-decibel or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 decibel of the criteria.

If it is determined that the project would 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.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include residents' acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies' input, newly constructed development versus development pre-dating 1978, and the cost per benefited residence.

Feasibility of noise abatement is basically an engineering concern. A minimum 5-decibel 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.

Affected Environment

The population density in the project study area is very low, and the type and size of the houses mainly consists 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 H.

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 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 were discussed in the original 2003 Noise Study Report. A field visit to the project area in 2009 revealed a total of five 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 located further 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.

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		1	2	2A	3
R-1	58	58	59	62	49	62	1	1	4	-9	4
R-2	53	53	55	57	51	58	0	2	4	-2	5
R-3	58	59	59	56	47	55	1	1	-2	-10	-3
R-4	40	42	41	48	48	40	1	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	1	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	1	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	1	0	-4	-15	-5
R-18	46	47	47	51	51	37	1	1	5	5	-9
R-19	61	63	63	67	67	40	1	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

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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		1	2	2A	3
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	1	1	1	1	1
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	1	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	1	3	4	7	5
R-41	47	48	49	51	55	52	1	2	4	9	5
R-42	46	46	48	49	55	51	0	2	3	10	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

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 upon 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 2-23.

Table 2-23 Existing and Predicted Noise Levels						
Receiver	Type	NAC	Existing Noise Level (dBA)	Predicted Noise Level (dBA)	Increase over Existing	Alternative(s)
7	Residential	67	63	68	5	2, 2A
9	Residential	67	40	54	14	3
12	Residential	67	41	57	17	3
19	Residential	67	61	67	6	2, 2A
36	Residential	67	40	56	17	3
37	Residential	67	40	58	18	3
45	Residential	67	39	62	23	3

Source: 2010 Noise Study

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 41 to 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 substantial (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 & 2A

The noise modeling results in Table 2.18 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 Alternative 2 and 2A. Table 2-18 shows the noise levels at the remaining receptors for Alternative 2 and 2A would increase above existing noise levels, however, the increase would be less than 12 dBA and therefore not considered substantial, and the noise levels will remain below the noise abatement criteria. Noise abatement does not need to be considered for Alternative 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 2-22 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 substantial increase. The predicted noise levels at these receptors are expected to exceed the existing levels by 14 dBA, 17 dBA, 17 dBA, 18 dBA, and 23 dBA respectively. Because predicted noise levels in the design year are substantially higher, traffic noise abatement must be considered.

Environmental Consequences 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 three 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.

Alternatives 2A, 3, and 4 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.

Avoidance, Minimization, and/or Noise Abatement under the National Environmental Policy Act

For purposes of the National Environmental Policy Act, noise abatement must be considered because five receivers have been identified as approaching or exceeding the noise abatement criteria by 2034.

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 upon 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 (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.

Table 2-24: Future Noise Levels, Soundwall 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	2	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	6	56	7	55	8	54	8	54	8

*Masonry block wall ** Insertion Losses

Source: 2010 Noise Study

While it may be possible to build an acoustically feasible, that is, a 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. 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.

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 the 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

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 7-1.01I and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures would minimize the temporary noise impacts from construction:

- All equipment would 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 would 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.

Avoidance, Minimization, and/or Noise Abatement under the California Environmental Quality Act

Caltrans noise policy is contained in Caltrans' August 2006 *Traffic Noise Analysis Protocol*. This protocol, approved as the California Department of Transportation's official noise policy by the Federal Highway Administration on August 16, 2006, establishes noise abatement criteria of 67 dBA for residential homes.

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 feasible. 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 impact the visual resources in the area and would reflect noise possibly affecting other residences.

While Caltrans recognizes an increase of 12-decibels as a substantial noise increase, Section 5.6 of the Caltrans' Traffic Noise Analysis Protocol only allows consideration of extraordinary abatement measures (insulation of a public or private residence) on a case by case basis when a project causes an increase of 30-dBA, or when after-project noise levels are 75-dBA or higher. No noise increases modeled for this project meet the stated criteria.

Since no significant noise impact would occur as a result of the project, no abatement is proposed. The final decision on noise abatement would be made upon completion of the project design and public involvement process. The noise abatement decision presented is based on preliminary project alignments and profiles, which may be subject to change. 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 eliminated from the final project design. A final decision to construct noise abatement will be made upon completion of the project design.

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 are discussed in Section 2.3.2.

Affected Environment

A Natural Environment Study for this project was completed in June of 2003 and a supplemental Natural Environment Study was completed in January of 2010. A

Botanical Survey was completed in October 2008 and a Wetland Delineation Report was prepared for this project in July 2009.

There are 10 natural plant communities in the biological study area. These include Big Sagebrush Series, Bulrush Series, Creosote Bush Series, Fremont Cottonwood Series, Greasewood Series, Mixed Saltbush Series, Mixed Willow Series, Rubber Rabbitbrush Series, Saltgrass Series, and Shadscale Series.

Big Sagebrush Series

This is an upland vegetation type dominated by shrubs, with annual grasses and wildflowers in the ground layer. The dominant species is big sagebrush (*Artemisia tridentata*). Other typical species of this series observed in the study area are rabbitbrush (*Chrysothamnus* species) and green ephedra (*Ephedra viridis*). The shrub four-wing saltbush (*Atriplex canescens*) also is present but is not characteristic of the series. Annual herbs include cheatgrass (*Bromus tectorum*) and Wilcox's woolly-star (*Eriastrum wilcoxii*). The series is found on well-drained, gravelly soils in a variety of sites including valleys, dry washes, and alluvial fans.

Bulrush Series

This habitat is dominated by the Nevada bulrush (*Scirpus nevadensis*) and the common three-square (*Scirpus americanus*). Associated species include cattail (*Typha x glauca*), saltgrass (*Distichlis spicata*), tall Parish's spike rush (*Eleocharis parishii*), and alkali sacaton (*Sporobolus airoides*).

This habitat series is found in permanently flooded areas in the study area along U.S. Highway 395. In California, it is a typical marsh and swamp community below 6,888 feet, but the series is also found throughout much of North America. Historically, the bulrush series may have been a dominant series in marsh habitat surrounding Owens Lake.

Creosote Bush Series

This upland vegetation type habitat is dominated by shrubs. The ground cover is sparse except for the presence of spring or summer annuals. The dominant species in this series is creosote bush (*Larrea tridentata*). This series merges with the shadscale series in the study area, and thus many of the same plant species are present, although they are more characteristic of the creosote bush than of the shadscale series (Sawyer and Keeler-Wolf 1995). Such species include hop-sage (*Grayia spinosa*), white bursage (*Ambrosia dumosa*), valley saltbush (*Atriplex polycarpa*), goldenbush

(*Ericameria cooperi*), and cheesebush (*Hymenoclea salsola*). This community is found on droughty, well-drained soils of flats, slopes, alluvial fans, and valleys. The study area represents the northern range limit for the creosote bush series in the Owens Valley, although it continues farther north on the east side of Owens Lake.

Fremont Cottonwood Series

This habitat series is the dominant vegetation type along perennial streams within the study area and surrounding vicinity. The Fremont cottonwood series is inclusive of cottonwood-dominated riparian forests throughout California and Baja, below 7,874 feet in elevation. Within the project area, the Fremont cottonwood series occurs most notably on Olancha and Cartago Creeks, but is present along perennial drainages throughout the entire study area. Cottonwood stands bordering private lands along U.S. Highway 395, however, are planted and are not considered to be native trees.

Commonly associated plants within the Fremont cottonwood series of the area include narrowleaf willow (*Salix exigua*), red willow (*Salix laevigata*), quaking aspen (*Populus tremuloides*), giant paintbrush (*Castilleja miniata* ssp. *miniata*), Durango root (*Datisca glomerata*), deergrass (*Muhlenbergia rigens*), and several non-native species such as sourclover (*Melilotus officinale*).

Greasewood Series

Greasewood series is a chenopod scrub that is found in portions of the project area and surrounding vicinity where there is intermittent flooding, such as dry lake beds, plains, saline flats, and alkali playas. The greasewood series is known from the Central Valley, Great Basin, the Sierra Nevada, and Mojave Desert regions between 328 feet and 6,562 feet.

Commonly associated plants within the greasewood series include big sagebrush (*Artemisia tridentata*), fourwing saltbush (*Atriplex canescens*), rubber rabbitbrush (*Chrysothamnus nauseosus*), and saltbushes (*Atriplex* spp.); in other areas, it associates with wetland species such as alkali-heath (*Frankenia salina*) and bush seepweed (*Suaeda moquinii*), neither of which are noted in the study area.

Mixed Saltbush Series

This series merges with the shadscale and greasewood series, a pattern that is common around the margins of dry lakes. The mixed saltbush series is a shrub-dominated community with a sparse ground cover. These include shadscale (*Atriplex confertifolia*), four-wing saltbush, valley saltbush, and spiny saltbush (*Atriplex*

spinifera). However, many other species are present, including those noted under the shadscale series.

Mixed Willow Series

A minor portion of the study area and surrounding vicinity consists of mixed willow woodlands. The mixed willow series within the area is comprised of one or two species including narrowleaf willow (*Salix exigua*), red willow (*Salix laevigata*), and arroyo willow (*Salix lasiolepis*). The mixed willow series is a general riparian habitat type, occurring throughout California, anywhere below 5,906 feet. Within the study area, the mixed willow series occurs on small portions of Cartago and Olancha creek, along pastures and moist ditches along U.S. Highway 395, and in scattered areas subject to seasonal flooding with low gradient depositions.

Commonly associated plants within the series include Fremont cottonwood (*Populus fremontii*), yerba mansa (*Anemopsis californica*), durango root (*Datisca glomerata*), among intermittent upland species like rabbitbrush (*Chrysothamnus* spp.).

Rubber Rabbitbrush Series

The rubber rabbitbrush series (*Chrysothamnus nauseosus*) merges with the shadscale series upslope west of Olancha. This vegetation type is found on well-drained, gravelly soils and is indicative of site disturbance.

Saltgrass Series

Saltgrass is a wetland vegetation type that is known to occur on saline floodplains and alluvial slopes within the project area vicinity. Pickleweed (*Salicornia virginica*) is also found growing in salt marshes. Prior to the draining of Owens Lake, the saltgrass series may have been much more extensive in saline marshes along the lake's edge. Associates of the saltgrass series within the project area include sedges (*Carex* spp.), yerba-mansa (*Anemopsis californica*), greasewood (*Sarcobatus vermiculatus*), and alkali sacaton (*Sporobolus airoides*).

Shadscale Series

This series is the most widespread vegetation type in the study area, accounting for more than half of the natural vegetation. It merges with the big sagebrush, creosote bush, greasewood, and mixed saltbush series. The shadscale series is an upland vegetation type dominated by shrubs but occurs in drier sites than the Big Sagebrush Series. The ground layer in the Shadscale Series is sparse except in spring, when showy annual wildflowers appear. A wide variety of other shrubs are found in this

vegetation type, including hop-sage, cheesebush, budsage (*Artemisia spinescens*), white bursage, winterfat and in some places contain significant amounts of four-wing saltbush, spiny saltbush, or valley saltbush. These patches are similar to mixed saltbush series. The shadscale series can occur on either poorly drained flats with saline or alkaline soils or on well-drained slopes.

Environmental Consequences

The natural communities of special concern in the study area include those that are delineated as wetlands under Army Corps of Engineers guidelines and two additional communities (Fremont cottonwood series and greasewood series) deemed “rare and worthy of consideration” by the California Natural Diversity Database.

Bulrush Series

All the alternatives would directly affect approximately .53 acre of the bulrush series. Indirect effects are not anticipated to this community.

Fremont Cottonwood Series

All of the proposed alternatives would directly affect the Fremont cottonwood series in both the Olancha and Cartago Creek drainages. Alternative 1 would permanently impact approximately a quarter acre of the Fremont cottonwood series. Alternatives 2, 2A, and 3, would permanently affect less than three acres, and Alternative 4 would affect 2.4 acres of the series habitat.

Indirect effects to the Fremont cottonwood series could occur from runoff of pollutants such as oil and gasoline, which may leak from passing vehicles onto the highway and be washed into the stream during storm events.

Greasewood Series

Only Alternative 1 would permanently affect approximately .59 acres of the greasewood series. Alternatives 2, 2A, 3 and 4 would bypass the greasewood series, so no direct effects would be expected other than those currently in existence from the two-lane highway. Indirect effects are not anticipated to this community.

Mixed Willow Series

All the alternatives would directly affect approximately .53 acres of the mixed willow series. Indirect effects are not anticipated to this community.

Saltgrass Series

All the alternatives would directly affect approximately .53 acres of the Saltgrass series. Indirect effects are not anticipated to this community.

Avoidance, Minimization, and/or Mitigation Measures

Freemont Cottonwood Series

Caltrans is proposing to replace any trees removed at a 2:1 ratio. Plantings would occur as close to the project area as possible. If feasible, the replacement trees would be propagated from trees within the study area to maintain local adaptations and genotypes. All newly planted trees would be monitored for the period to be determined by the California Department of Fish and Game. Watering may be required until the taproot is established.

Bulrush Series, Greasewood Series, Mixed Willow Series, Saltgrass Series

Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (see Section 2.3.2).

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 United States Code 1344) is the main law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers with oversight by the Environmental Protection Agency.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game and the Regional Water Quality Control Boards. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement would be required. The California Department of Fish and Game's jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the Department of Fish and Game.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The Regional Water Quality Control Boards also issue water quality certifications in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section earlier in this appendix for additional details.

Affected Environment

A Natural Environment Study for this project was completed in June of 2003 and a supplemental Natural Environment Study was completed in January of 2010. A Botanical Survey was completed in October 2008 and a Wetland Delineation Report was prepared for this project in July 2009. Coordination with Army Corps of Engineers is discussed in Chapter 3.

There are four predominant streams and a number of other unnamed streams that cross the project area. The named streams include Cartago Creek, Ash Creek and Olancha Creek. The streams primarily flow eastward towards 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 approximately 28 total acres of wetlands within the project limits and approximately 85,000 total acres of other waters of the United States within the project limits.

Environmental Consequences

This project is expected to impact wetlands or other waters of the United States. Most of these wetlands areas occur in areas of natural drainage. The project 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.

Table 2-25 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
1	2.33 ac	.41 ac	.41 ac	.41 ac	.41 ac	.41 ac
2	1.14 ac	.12 ac	.12 ac	.12 ac	.12 ac	.12 ac
3	24.71 ac	.19 ac	0 ac	0 ac	0 ac	0 ac
Totals	28.18 ac	.72 ac	.53 ac	.53 ac	.53 ac	.53 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
Totals	85,867 ac	.66 ac	.63 ac	.26 ac	.69 ac	1.49 ac

Source: 2010 Natural Environment Study & Errata Sheet

Avoidance, Minimization, and/or Mitigation Measures

Installing protective wetland mats or performing work outside of the rainy season would minimize temporary impacts to wetlands or other waters of the United States, and these areas would be restored to pre-project conditions. Other mitigation measures as required by United States Army Corps of Engineers will be implemented.

Any wetlands that are not in the direct path of construction would be avoided by designating them as environmentally sensitive areas.

Permanent impacts to wetlands and other waters of the United States would be mitigated through the in-lieu fee process or by purchasing credits from an approved bank at ratio to be determined during the permitting process with the United States Army Corps of Engineers. A mitigation ratio of 1:1 was being proposed to the United States Army Corps of Engineers.

Cumulative Impacts

When added to the past and reasonably foreseeable projects occurring within the general vicinity of the project area, and taking into consideration that permanent and temporary impacts would be offset through minimization and mitigation measures, the proposed project is not expected to contribute significantly to cumulative impacts to Jurisdictional Waters of the United States including wetlands.

2.3.3 Plant Species

Special-status plant species are protected 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; those 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. Those plants are discussed later in this document in Section 2.3.5.

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

Regulatory Setting

The U.S. Fish and Wildlife Service and California Department of Fish and Game share regulatory responsibility for the protection of special-status plant species. Special-status species are selected for protection because they are rare and/or subject to population and habitat declines. “Special-status” is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act and/or the California Endangered Species Act. Please see the Threatened

and Endangered Species section of this appendix (below) for detailed regulatory information regarding these species.

The Plant Species section of Chapter 2 of this document discusses all the other special-status plant species, including California Department of Fish and Game fully-protected species and species of special concern, U.S. Fish and Wildlife Service candidate species, and non-listed California Native Plant Society rare and endangered plants.

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

A Natural Environment Study for this project was completed in June of 2003 and a supplemental Natural Environment Study was completed in January of 2010. A Botanical Survey was completed in October 2008 and a Wetland Delineation Report was prepared for this project in July 2009.

Plant species surveys were conducted in early April 2008, late April 2008, in June 2008, and in March, April, and May 2001. The surveys were timed to coincide with the spring flowering periods of native plants that have the potential to occur in the biological study area. Flowering periods were confirmed as listed in the California Native Plant Society's Inventory of Rare and Endangered Plants of California.

Geyers milk-vetch (*Astragalus geyeri* var. *geyeri*) is an annual plant in the pea family. It flowers from May to August. In California, this species of plant occurs in Inyo, Lassen, and Mono counties at elevations between 3,800 and 5,100 feet. Geyers milk-vetch grows on sandy flats in a wide variety of plant communities, particularly scrub types such as big sagebrush, greasewood, and shadscale, but it also is found on stabilized dunes.

Naked milk-vetch (*Astragalus serenoii* var. *shockleyi*) is a perennial plant in the pea family. Blooms are present between May and July. This species of plant is known from Inyo and Mono counties in California, as well as into Nevada, at elevations

between about 3,900 to 7,000 feet. It grows on bare, gravelly hillsides in sagebrush scrub and in open, alkaline areas within greasewood scrub, shadscale scrub, or pinyonjuniper woodlands.

Inyo County star-tulip (*Calochortus excavatus*) is a perennial herb in the lily family (*Liliaceae*). This species blooms during April and May (USFWS 1996b), but the plants may remain dormant in dry years and not produce above-ground shoots or flowers. It is known only in Inyo and Mono counties at elevations ranging from 3,780 to 6,430 feet. Inyo County star-tulip typically grows in alkali meadows but a few occurrences are known from near seeps or springs in shadscale scrub or in irrigated pastures. At 20 of the 51 known sites, this species grows in association with Owens Valley checkerbloom. The closest documented occurrence of Inyo County star-tulip is in the Alabama Hills near Lone Pine, approximately 12 miles north of the study area.

Pygmy poppy (*Canbya candida*) was identified within the project area. Pygmy poppy is an annual herb of the poppy family that flowers between March and June. Crowned muilla (*Muilla coronata*) was identified within the project area. Crowned muilla is a perennial herb in the lily family and blooms in March and April.

Sanicle cymopterus (*Cymopterus ripleyi* var. *saniculoides*) is a perennial herb of the carrot family (*Apiaceae*). The typical flowering period of sanicle cymopterus is from April to May, but it may continue flowering into June in wet years. The taproot survives from year to year, but above-ground plants appear only during favorable conditions. In California, sanicle cymopterus is restricted to Inyo County, but it also occurs in Nevada. Sanicle cymopterus has been found at elevations ranging from 3,670 to 5,450 feet. This species of plant most often grows in the Joshua tree woodland and creosote bush scrub communities, but in the vicinity of the study area it has been reported from the desert saltbush scrub, shadscale scrub, and greasewood communities. All known sites are on deep or loose, sandy soils.

Sagebrush-like loeflingia (*Loeflingia squarrosa* var. *artemisiarum*) is an annual member of the pink family (*Caryophyllaceae*). It flowers during April and May. This species of plants occurs in Inyo, Kern, Lassen, and Los Angeles counties as well as in Nevada, Oregon, and Wyoming. In California, sagebrush-like loeflingia is found at elevations ranging between 2,300 to 5,300 feet. It typically grows in sandy soils, often in association with greasewood on the margins of clay slicks.

Coso Mountains lupine (*Lupinus magnificus* var. *glarecola*) is a perennial herb in the pea family. Coso Mountains lupine blooms from April to June, but flowers appear only after a fire. It is known from elevations of approximately 3,640 to 8,005 feet in Inyo and San Bernardino counties. Coso Mountains lupine grows on loose, rocky slopes such as talus in Great Basin scrub, Mohave desert scrub, and Joshua tree woodland.

Crowned muilla (*Muilla coronata*) is a perennial herb of the lily family. The corm (a swollen, underground stem) sends up new shoots each year, which produce blooms during March and April. Crowned muilla is known from Inyo, Kern, Los Angeles, San Bernardino, and Tulare counties. It grows at elevations of approximately 3,280 to 5,250 feet. Crowned muilla can be found in a number of plant communities, including Joshua tree woodland, Mohave desert scrub, and pinyon-juniper woodland.

Nevada oryctes (*Oryctes nevadensis*) is an annual herb in the nightshade family (*Solanaceae*). It blooms from April to June. In California, Nevada oryctes is known only from the Owens Valley in Inyo County. The elevation range of known locations in California is from 3,600 to 8,300 feet. Nevada oryctes grows in loose, sandy soils of washes and dunes in the Mohave desert scrub and saltbush scrub communities.

Inyo phacelia (*Phacelia inyoensis*) is an annual herb and a member of the waterleaf family (*Hydrophyllaceae*). Flowers can be found from April to August; plants at higher elevations bloom later than those at lower elevations. This species is found in Inyo and Mono counties at elevations ranging from approximately 3,000 to 10,500 feet. Inyo phacelia grows in alkali meadows, seeps, and in the transition zone between alkali meadow and scrub habitats.

Charlotte's phacelia (*Phacelia nashiana*) is an annual herb in the waterleaf family. It flowers between March and June. This species has been reported from Inyo, Kern, and Tulare counties at elevations ranging from 2,000 to 7,200 feet. It is most often found in creosote bush scrub but also occurs in the Joshua tree woodland and pinyon-juniper communities. Charlotte's phacelia grows on sandy, gravelly, or volcanic ash soils, often on steep slopes.

Parish's popcorn-flower (*Plagiobothrys parishii*) is an annual herb in the borage family (*Boraginaceae*). 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. Parish's 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.

Alkali cord grass (*Spartina gracilis*) is a perennial herb of the grass family (*Poaceae*). It flowers from June to August. Although the individual flowers are inconspicuous, the entire flower stalk is more noticeable. In California, this species occurs only in Inyo and Mono counties, but it ranges northward into Oregon and eastward as far as the Great Plains and eastern Canada. In California, it is found at elevations ranging from approximately 3,280 to 6,890 feet on moist, alkaline soils in meadows, marshes, and within Great Basin scrub communities.

Environmental Consequences

Alternatives 2A would affect the pygmy poppy directly, and none of the alignments would affect it indirectly. Crowned muilla would be affected directly by ground disturbing activities within the alignment of Alternative 4. All the alternatives would affect the Parishs popcorn-flower, as they will impact a small amount of wetland habitat where this species is commonly found. Alternative 2 and 2A would directly affect Sanicle cymopterus.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans intends to collect duff and soil to a depth of six inches, and then redistribute the material on disturbed areas within the study area. This action should be sufficient to mitigate impacts to Parishs popcorn-flower, crowned muilla, Sanicle cymopterus, and pygmy poppy.

Cumulative Impacts

When added to the past and reasonably foreseeable projects occurring within the general vicinity of the project area, and taking into consideration that permanent and temporary impacts would be offset through minimization and mitigation measures, the proposed project is not expected to contribute significantly to cumulative impacts to Parishs popcorn-flower, Owens Valley checkerbloom, crowned muilla, Sanicle cymopterus, and pygmy poppy.

2.3.4 Animal Species

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 Game fully protected species and species of special concern, and the U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration Fisheries Service candidate species.

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration Fisheries Service, and the California Department of Fish and Game are responsible for implementing these laws. The section on Animal Species in Chapter 2 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 a separate section. All other special-status animal species are discussed here under Animal Species, including California Department of Fish and Game fully protected species and species of special concern, and the U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration Fisheries 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
- Marine Mammal Protection 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 (example: county or city) that need to be considered when developing projects. If work is being done on federal land (Bureau of Land Management or Forest Service, for example), then those agencies' regulations, policies, and Habitat Conservation Plans are followed.

Affected Environment

A Natural Environment Study for this project was completed in June of 2003 and a supplemental Natural Environment Study was completed in January of 2010.

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 crevices on rock faces. They forage at night. Species identified during the bat surveys in the project area included the pallid bat, spotted bat, small-footed myotis, long-legged bat, Yuma myotis, long-eared myotis, and fringed myotis. The aggregation of bats under the bridge over the Los Angeles aqueduct was probably a maternity colony of Yuma myotis, based on the number of bats flying in and out from under the bridge and the May date of the field survey.

Mule deer

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

Yellow warbler

The yellow warbler is a small songbird that was once a common migrant breeder throughout California. Yellow warblers generally prefer waterside vegetation, primarily willow and cottonwoods, in close proximity to streams and in wet meadows. It is typically present in California only during the breeding season. The loss of riparian habitat and nests of the brown-headed cowbird has drastically reduced the numbers and range of yellow warblers, which use the nests. Yellow warblers occur very locally in low densities on the Owens Valley floor in Inyo County. There is marginal waterside willow habitat in the Olancha Creek area.

Alkali Skipper

The alkali skipper (*Pseudocopaeodes eunus*) is a butterfly that is found mainly in alkaline meadows where its host plant, saltgrass, is present. No surveys were conducted specifically to detect this species, but it has been reported in several areas around Owens Lake. The saltgrass series occurs east of Highway 395, from Highway 190 northward and it may be expected that the alkali skipper occurs there.

Owens Valley vole

The Owens Valley vole is a subspecies of the common and widely distributed California vole. It inhabits wet meadows in the Owens Valley.

Environmental Consequences

Bats

Construction activities near bridges could injure bats and demolishing buildings, sheds, outhouses, barns, and other structures. could destroy bat habitat.

Mule deer

Alternative 4 contains habitat used as the wintering range for mule deer, and that is a vital area for successful annual migration. Alternative 4 also has a greater potential for collisions between vehicles and deer because traffic would be closer to deer habitat.

Yellow Warbler

The proposed project may remove potential nesting habitat at Olancha Creek.

Alkali Skipper

All of the alternatives could affect alkali skipper wetland habitat.

Owens Valley vole

All of the alternatives could affect Owens Valley vole wetland habitat.

Avoidance, Minimization, and/or Mitigation Measures

Bats

Construction activities near existing structures that provide habitat for bats will be limited to daytime hours or specific times a year. All structures to be demolished will be surveyed for use by bats. If it is determined bats are using any structures, demolition will be scheduled when bats are not present or exclusion measures will be incorporated to prevent any harm to bats.

Mule deer

Alternative 4, if chosen, would incorporate at least two wildlife crossings to minimize impacts to the migration of deer.

Yellow warbler

Prior to project implementation, surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence

of nesting birds. Special provisions will also be included in the construction contract to protect all migratory birds. Riparian areas will be restored and revegetated following project completion.

Alkali Skipper

Prior to project implementation, surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of the alkali skipper. Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (see Section 2.3.2).

Owens Valley vole

Prior to project implementation, surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of the Owens Valley vole. Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (see Section 2.3.2).

Cumulative Impacts

When added to the past and reasonably foreseeable projects occurring within the general vicinity of the project area, and taking into consideration that permanent and temporary impacts would be offset through minimization and mitigation measures, the proposed project is not expected to contribute significantly to cumulative impacts to bats, least Bell's vireo, mule deer, yellow warbler, alkali skipper and Owens Valley vole.

2.3.5 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United States Code, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species.

The outcome of consultation under Section 7 is a Biological Opinion or an incidental take statement. Section 3 of the Federal Endangered Species Act defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code, Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Game is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the California Department of Fish and Game.

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

Affected Environment

A Natural Environment Study for this project was completed in June of 2003 and a supplemental Natural Environment Study was completed in January of 2010.

Owens Valley checkerbloom

Owens Valley checkerbloom is a State Endangered Species. Owens Valley checkerbloom is a perennial herb of the mallow family (Malvaceae). It blooms from April to June. This species is endemic to the Inyo County portion of the 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. 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.

Owens pupfish

The Owens pupfish 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 from water diversions and 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.

Owens tui chub

The Owens tui chub 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.

Western snowy plover

The western snowy plover is a Federally endangered species. The western snowy plover is a sparrow-sized, light colored shorebird that uses sandy beaches, salt pond levees, shores of large alkali lakes for nesting habitat. Potential habitat exists along the western edge of Owens Lake.

California wolverine

The California wolverine is a State Threatened species. The California wolverine can be found in the Sierra Nevada and inhabits areas at or above timberline, oftentimes preferring lower-elevation forests during winter.

Least Bell's Vireo

Least Bell's vireo is a State and Federally endangered species. Least Bell's vireo is a small songbird that was once widespread in low-elevation riparian areas of the state. Its preferred habitat is willow riparian woodland. It is present in California only during the breeding season. The loss of riparian habitat and nest parasitism by the brown-headed cowbird (*Molothrus ater*) has drastically reduced the numbers and range of least Bell's vireo. Bell's vireo has historically nested in the Olancha area, but it is unclear if it was the least Bell's vireo subspecies. There is marginal waterside willow habitat in the Olancha Creek area.

Sierra Nevada bighorn sheep

Sierra Nevada bighorn sheep is a State and Federally endangered species. Critical habitat for Sierra Nevada bighorn sheep is located in Tuolumne, Mono, Fresno, Inyo, and Tulare Counties. The closest area of critical habitat to the proposed project location is Herd Unit 12, the Olancha Peak Herd Unit. 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. 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.

Swainson's hawk

Swainson's hawk is a State endangered species. Swainson's hawks breed in the Central Valley and Owens Valley, often nesting in trees adjacent to agricultural fields or pastures. They forage over open shrublands, alfalfa fields, and pastures. They are present in California only for nesting, and they winter in South America.

No Swainson's hawks were observed during the focused surveys or during any other fieldwork on this project. Stick nest sites were frequently observed, but no Swainson's hawks were seen on or near them, although it has been reported that Swainson's hawks have used them in past years.

Desert tortoise

Desert tortoise is a State and Federally threatened species. The desert tortoise is a large, herbivorous reptile that lives throughout the Mojave and Colorado deserts from below sea level to 4,130 feet or higher. Desert tortoises are found in creosote bush scrub, saltbush scrub, and Joshua tree woodland. Tortoises are most active during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rainstorms. Desert tortoises spend the remainder of the year in burrows, escaping extreme conditions of the desert. 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.

In 2003, the U.S. Fish and Wildlife Service agreed to modify the survey protocol for desert tortoise by only surveying the biological study area and not conducting a "zone

of influence” survey. This change was approved as long as evidence of a tortoise was observed within the biological study area.

On five separate occasions, during the months of April and May 2008, individual tortoises and dens were observed and locations were recorded by Caltrans District 9 project team members. During wetland/waters delineation surveys, a contract biologist reported observing a desert tortoise approximately one mile south of the northernmost edge of the project limits.

Mohave ground squirrel

Mohave ground squirrel is a State threatened species. The Mohave ground squirrel is a small squirrel with a total length of nine 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. The squirrel was observed during biological surveys in the southern end of the project area.

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

Environmental Consequences

Owens Valley checkerbloom

All the alternatives would affect the Owens Valley checkerbloom, as they will impact a small amount of wetland habitat where this species is commonly found. All the build alternatives may affect - not likely to adversely affect this species.

Owens pupfish

All the alternatives would impact fewer than 5 acres of wetland habitat. However, this project would have no effect on this species because there are no known populations of Owens pupfish in or near the project location.

Owens tui chub

All the alternatives would impact fewer than 5 acres of wetland habitat. However, this project would have no effect on this species because there are no known populations of Owens tui chub in or near the project location.

Western snowy plover

The proposed project will not impact any western snowy plover habitat and would have no effect on this species.

California wolverine

Suitable habitat for the California wolverine is not present within the project area. This project would have no effect on California wolverine.

Least Bell's vireo

The proposed project may remove potential nesting habitat at Olancha Creek. All the build alternatives may affect - not likely to adversely affect this species.

Sierra Nevada bighorn sheep

Alternative 4 runs parallel to the critical habitat designated by the U.S. Fish and Wildlife Service approximately 1300 feet from the edge. All other alternatives completely avoid all potential contact with any of the herd units in the Olancha/Cartago area. All the build alternatives may affect - not likely to adversely affect 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, all the build alternatives may affect - not likely to adversely affect this species.

Desert tortoise

Desert tortoise is a State and Federally threatened species. Direct effects to the desert tortoise would include construction-related activities that could injure or kill a desert tortoise and cause the loss or destruction of habitat. The desert tortoise could potentially be injured or killed if crushed by a vehicle or other equipment during construction activities. Collapsed or excavated burrows could kill or injure live tortoises or eggs. Predation on desert tortoises may be increased in the work area if common predators, such as ravens (*Corvus corax*) are attracted by human activity. Uninformed workers could also move, collect, or vandalize desert tortoises that they may encounter when in work areas. Improper handling of desert tortoises by humans could spread organisms that could cause upper-respiratory tract disease in the animals.

As a result of this project, desert tortoise habitat would be permanently lost and replaced with pavement, concrete, or grading activities. Within the project area, the desert tortoise shares the same habitat as the Mohave ground squirrel; therefore, the impacts to habitat would be the same for both special-status animal species. Table 2.20 shows the estimated acres of affected habitat for both the desert tortoise and Mohave ground squirrel for each build alternative. All the build alternatives may affect-likely to adversely affect this species.

Mohave ground squirrel

Mohave ground squirrel is a State threatened species. Direct effects to the Mohave ground squirrel would include construction-related activities that could injure or kill a squirrel and cause the loss or destruction of habitat. The Mohave ground squirrel could potentially be injured or killed if crushed by equipment during construction activities. Collapsed or excavated burrows could kill or injure squirrels.

As a result of this widening project, Mohave ground squirrel habitat would be permanently lost and replaced with pavement, concrete, or grading activities. Since the Mohave ground squirrel shares the same habitat with the desert tortoise, the amount of affected habitat would be the same for both animals. All the build alternatives may affect-likely to adversely affect this species.

Avoidance, Minimization, and/or Mitigation Measures

Owens Valley checkerbloom

Caltrans intends to collect duff and soil to a depth of six inches, and then redistribute the material on disturbed areas within the study area. This action should be sufficient to mitigate impacts to Owens Valley checkerbloom.

Owens pupfish

Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (see *Section 2.3.2*). Prior to project implementation surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of Owens pupfish.

Owens tui chub

Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (see *Section 2.3.2*). Prior to project implementation surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of Owens tui chub.

Western snowy plover

No mitigation is necessary for western snowy plover.

California wolverine

No mitigation is necessary for California wolverine.

Least Bell's vireo

Caltrans is proposing to restore and revegetate riparian areas affected by the proposed project at a 3:1 ratio. Prior to project implementation surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of nesting birds. Special provisions will also be included in the construction contract to protect all migratory birds including least Bell's vireo.

Sierra Nevada bighorn sheep

If Alternative 4 becomes the preferred alternative, the following avoidance and minimization measures would be implemented to ensure no harm come to any Sierra Nevada bighorn sheep:

- The qualified biologist(s) shall be responsible to see that all persons employed on the construction project receive instruction regarding the Sierra Nevada bighorn sheep prior to performing on-site work. Instruction shall include the importance of the Sierra Nevada bighorn sheep to the environment, recovery efforts for the Sierra Nevada bighorn sheep, implications of the Endangered Species Act, and the importance of following all terms and conditions provided in the biological opinion. An education program that has been previously approved by the U.S. Fish & Wildlife Service may be used to satisfy this term and condition, provided the project-specific mitigation measures are fully discussed.
- The contractor shall also conform to the following requirements and shall conduct his work accordingly.
 - Wrappers, food scraps, cans, bottles, and other food-related refuse must be disposed of in a closed trash container or removed from the site.
 - The contractor shall not travel or place materials or equipment outside the designated construction areas.
 - The contractor shall not touch, harass, collect, or otherwise harm Sierra Nevada bighorn sheep.
 - If, during construction, the contractor discovers a Sierra Nevada bighorn sheep, the contractor shall protect it and immediately notify the engineer. Work shall be stopped in the immediate area until the

sheep leaves on its own, or can be safely discouraged from the area by an approved biologist.

- If, during construction a Sierra Nevada bighorn sheep is injured or killed, the contractor shall immediately notify the Engineer. Work shall be stopped in the immediate area until the approved biologist can remove the injured or killed Sierra Nevada bighorn sheep.

- Caltrans shall submit the names(s) of the proposed authorized biologist(s) to the U.S. Fish & Wildlife Service for review and approval at least 15 days prior to the onset of activities. No construction activities shall begin until an authorized biologist is approved.

Swainson's hawk

Language would be placed in the contract protecting migratory birds, their occupied nests, and their eggs from disturbance or destruction. Caltrans is proposing to replace any trees removed at a 2:1 ratio. Plantings would occur as close to the project area as possible.

Desert tortoise and Mohave ground squirrel

Caltrans would compensate for direct impacts to the desert tortoise and Mohave ground squirrel as well as their habitat by preserving habitat in areas that are important for the recovery of the desert tortoise and Mohave ground squirrel populations.

Caltrans also would replace each acre of lost habitat with three acres of quality habitat at a location approved by the U.S. Fish and Wildlife Service and California Department of Fish and Game. Total impact compensation acreages for each build alternative are shown in Table 2-26.

A Biological Opinion from the U.S. Fish and Wildlife Service for the potential adverse effects to the federally listed desert tortoise would be required for this project. See Chapter 3 for details of Caltrans coordination efforts with the U.S. Fish and Wildlife Service.

Once a preferred alternative is selected, the Federal Highway Administration would initiate formal consultation with the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act of 1973.

**Table 2-26 Compensatory Mitigation for Impacts to the Desert Tortoise
and Mohave Ground Squirrel**

Project Alternative	Acres of Impact*	Mitigation Ratio	Total Acres of Compensation*
1	215	3:1	645
2	268	3:1	804
2A	279	3:1	837
3	269	3:1	805
4	296	3:1	888

* Includes 60 acres of borrow site

Desert tortoise

Before any construction activity starts, the contractor awarded the proposed project shall furnish a qualified biologist, who will be responsible for overseeing compliance with Contract Special Provisions as stated below. The following will be included in the Contract Special Provisions for protection of desert tortoise throughout the project:

- The qualified biologist(s) shall be responsible to see that all persons employed on the construction project shall receive instruction regarding the desert tortoise prior to performing on-site work. Instruction shall include the importance of the desert tortoise to the environment, recovery efforts for the desert tortoise, implications of the Endangered Species Act, and the importance of following all terms and conditions provided in the biological opinion. Employees shall be notified that they are not authorized to handle or otherwise move desert tortoises encountered on the project site. An education program that has been previously approved by the U.S. Fish and Wildlife Service may be used to satisfy this term and condition, provided the project-specific mitigation measures are fully discussed.
- Only biologists authorized by the U.S. Fish and Wildlife Service and California Department of Fish and Game shall handle desert tortoises.
- No construction activities shall begin until an authorized biologist is approved.
- The authorized desert tortoise biologist shall monitor installation of the temporary fence using either plastic diamond mesh, or silt fence used as a temporary linear sediment barrier, either of which shall be installed per Caltrans standards. The entire project area shall be surveyed for desert tortoises by the authorized biologist after installation of the fence and within seven days prior to the start of any further construction activities.

- Desert tortoise burrows within the project limits shall be excavated by hand either by or under the direct supervision of the authorized biologist, and collapsed to prevent reentry.
- All desert tortoises found shall be removed from within the fenced area or placed outside of the construction corridor. If the removal is during the season of aboveground activity, the desert tortoises shall be placed beside a nearby burrow of appropriate size. If the removal is not in the season of aboveground activity, the desert tortoise shall be moved (dug out of burrow, if necessary) on a seasonably warm day and placed at the mouth of a nearby burrow of appropriate size. If the desert tortoise does not enter the burrow, an artificial burrow may be constructed and the desert tortoise placed within it. The authorized biologist shall be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.
- If desert tortoises are encountered above ground during construction, the desert tortoise shall be moved out of the construction corridor, placed under a shrub in the direction it was traveling. In general, desert tortoises should be moved the minimum distance possible to ensure their safety. If desert tortoises need to be moved at a time of the day when ambient temperatures could harm them (i.e. extremely low [less than 40°F] or high [greater than 90°F] temperatures), they shall be held overnight in a clean cardboard box. These desert tortoises shall be kept in the care of the authorized biologist under appropriate controlled temperatures and released the next day when temperatures are favorable. All cardboard boxes shall be properly discarded after one use.
- The authorized biologist(s) shall follow the *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council 1994 - revised 1999).
- If it is necessary for a worker to park temporarily outside of the fenced enclosures, the worker shall inspect for desert tortoises under the vehicle prior to moving it. If a desert tortoise is present, the worker shall carefully move the vehicle only when necessary and when the desert tortoise would not be injured by moving the vehicle or shall wait for the desert tortoise to move out from under the vehicle. The authorized biologist may also be contacted to remove the desert tortoise. The authorized biologist shall maintain a record of all desert tortoises handled. This information shall include for each desert tortoise:
 - The locations (narrative and maps) and dates of observations,
 - General condition and health, including signs of diseases, injuries and state healing, and whether animals voided their bladders,

- Location moved from and location moved to,
- Diagnostic markings (e.g., identification numbers or marked lateral scutes), and
- Photograph of each handled desert tortoise.

Mohave ground squirrel

Worker education programs would be implemented to avoid the take of Mohave ground squirrels and minimize loss of habitat during construction activities. If a Mohave ground squirrel were found within or near the project areas, a qualified biologist would be notified immediately. All work in the vicinity of the Mohave ground squirrel that could injure or kill the animal would cease until the Mohave ground squirrel is moved from harm's way by the authorized biologist or it moves from the construction area on its own accord.

If the authorized biologist identifies a Mohave ground squirrel using burrows within the project area, the California Department of Fish and Game would be consulted regarding the need for a trapping effort to relocate these animals to a safe site. The construction contractor would also comply with the requirements specified by the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

Cumulative Impacts

A detailed cumulative impact analyses was conducted in the Natural Environmental Study to comply with Section 7 of the Federal Endangered Species Act. No cumulative effects are expected as a result of this project.

Mitigation measures would be taken for each of the potential impacts, and a biological opinion would be obtained from the U.S. Fish and Wildlife Service as appropriate.

2.3.6 Invasive Species

A Natural Environment Study for this project was completed in June of 2003 and a supplemental Natural Environment Study was completed in January of 2010.

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

There are a number of invasive species present in the project area including giant reed (*Arundo donax*), cheat grass, and salt cedar (*Tamarix ramosissima*), red brome (*Bromus madritensis* ssp. *rubens*), five-horn bassia and black locust, russian thistle (*Salsola tragus*), wild oats (*Avena fatua*), Italian ryegrass (*Lolium multiflorum*), and Mediterranean grass (*Schismus arabicus*).

Giant reed, wild oats, Italian ryegrass, and Russian thistle occurred only on the roadside along the existing lanes of U.S. Highway 395 and were quite sparse. Cheat grass and Mediterranean grass also were sparse and were observed only along dirt roads. Red brome was found occasionally in a variety of plant communities but did not grow in dense stands during the survey years. Black locust was found at an old homesite and is planted along U.S. Highway 395 in Olancha. Five-horn bassia was confined to an alkaline area north of Cartago near Willow Dip. Salt cedar forms a large stand east of U.S. Highway 395 south of Olancha and could spread to other riparian areas if left unchecked. giant reed (*Arundo donax*), wild oats (*Avena fatua*), Italian ryegrass (*Lolium perenne*), and Russian thistle (*Salsola tragus*).

Environmental Consequences

All of the invasive species establish themselves in disturbed areas and may subsequently spread into undisturbed 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 would not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions would be taken if invasive species were 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.

2.4 Climate Change under the California Environmental Quality Act

Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of greenhouse gases related to human activity that include carbon dioxide (CO₂), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2 –tetrafluoroethane), and HFC-152A (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards, California needed a waiver from the U.S. Environmental Protection Agency (EPA). The waiver was denied by the U.S. Environmental Protection Agency in December 2007. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. However, on January 26, 2009, it was announced that the U.S. Environmental Protection Agency would reconsider their decision regarding the denial of California's waiver. On May 18, 2009, President Barack Obama announced the enactment of a 35.5-mile per gallon fuel economy standard for automobiles and light duty trucks, which will take effect in 2012. On June 30, 2009, the EPA granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by

the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the California Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state’s Climate Action Team.

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

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

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

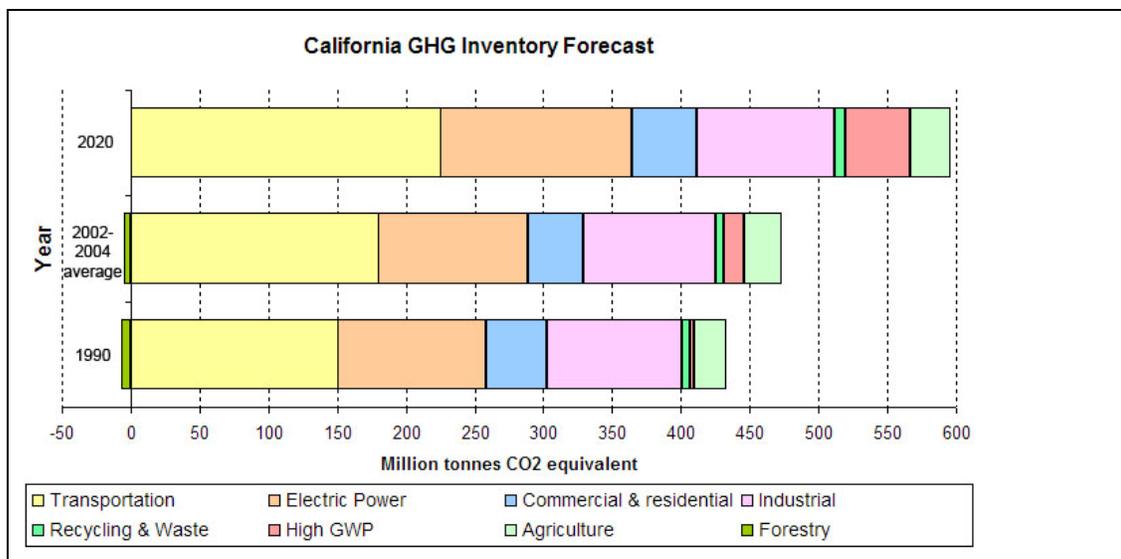
- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)--in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009. ¹

According to *Recommendations by the Association of Environmental Professionals on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of greenhouse gases. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(i)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, the California Air Resources Board recently released an updated version of the greenhouse gas inventory for California (June 26, 2008). Shown below in Figure 2.11 is a graph from that update that shows the total greenhouse gas emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

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

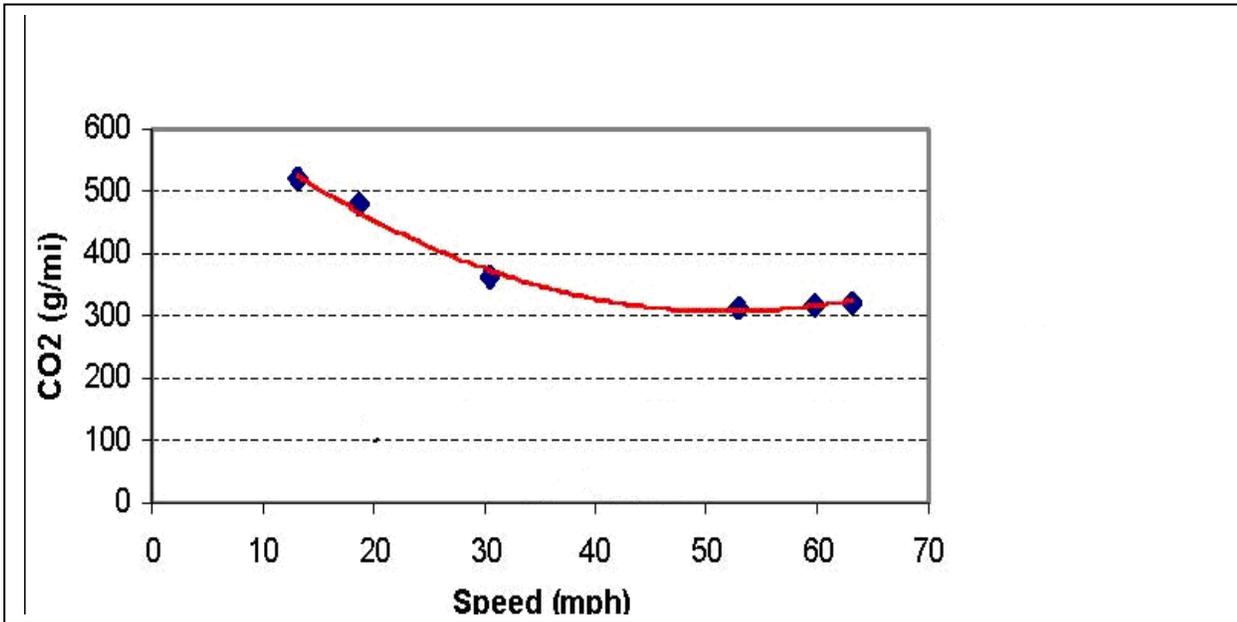


Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Figure 2.4 California Greenhouse Gas Inventory

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

One of the main strategies in Caltrans’ Climate Action Program to reduce greenhouse gas 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 2.12). Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in greenhouse gas emissions.



Source: Center for Clean Air Policy - [http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20\(1-13-04\).pdf](http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20(1-13-04).pdf)

Figure 2.5 Fleet Carbon Dioxide (CO₂) Emissions vs. Speed (Highway)

Project Analysis

The project lies in the Great Basin Air Pollution Control District, which is currently classified as “in attainment/unclassified” for carbon monoxide levels in federal air quality standards and state standards. Carbon dioxide is a common indicator of the various greenhouse gases. Carbon dioxide and most of the greenhouse gases are not currently listed in the Clean Air Act as Priority Pollutants; therefore, there is no federal or state ambient air quality limit for these gases.

Estimated annual Carbon dioxide emissions were modeled using CT-EMFAC 2007. The Average Daily Traffic was the same for built and no build. The assumptions used in the model assume a peak hour (two hours per day) prevailing speeds of 5-45 miles per hour and the non-peak hour prevailing free flow speed was 35-60 miles per hour for the No-build Alternative. For the Build Alternative, the peak hour speed assumption was 40-45 and the non-peak hour speed assumption was 35-55.

The results in Table 2-27 indicate only a rough estimate of emissions based on projected annual average daily traffic data.

Table 2-27 Estimated Carbon Dioxide Emissions in Tons Per Year

Volume	2005	2022 Build	2022 No Build	2032 Build	2032 No-Build
CO2	987.8	1,069	1,072	1,097	1.127

According to EMFAC modeling results, both the Build and No-build alternatives would result in more greenhouse gasses than the existing conditions. This is primarily because of EMFAC’s focus on predicted traffic volumes and speeds, which would increase with the addition of more lanes and vehicles the project adds to the highway.

The build alternatives are predicted to cause less carbon dioxide than the No-Build Alternative.

The proposed project would improve traffic operations and reduce delay under build alternatives, compared to the No-build Alternative. Therefore, it is anticipated that the project would provide reduced greenhouse gas emissions compared to the No-build alternative.

The main purpose of the Olancha / Cartago project is to improve safety and level of service on this segment of U.S. Highway 395 in Inyo County. The safety improvements and the improved level of service are expected to reduce the accidents within the project area, which may also reduce incidence of stop-and-go traffic and reduce greenhouse gas emissions.

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 from post miles 29.2 to 41.8 in Inyo County. The addition of two traffic lanes would provide a safe and comfortable ride that is consistent with the design speed of 65 - 75 miles per hour on this segment of U.S. Highway 395. The project would provide additional capacity, which would improve circulation, provide passing opportunities, and reduce congestion. New pavement surfaces would ensure the smoothest ride possible for motorists. A reduction in greenhouse gases and an improvement in traveling vehicles’ fuel economy may occur as a result of the proposed improvements.

The proposed project is included in the Inyo County Regional Transportation Plan and in the 2001 Inyo County General Plan (see *Section 2.1.1.2*).

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced 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. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

Based on the type of project that is proposed, there would be a low- to no-potential for impacts to climate change. Construction emissions would be unavoidable; however, there would likely be long-term greenhouse gas benefits as a result of the improvements to safety and operation.

CEQA Conclusion

Daily CO₂ emissions would be expected to decrease as a result of the project. Based on the above quantitative modeling, Caltrans does anticipate a reduction in greenhouse gas emissions with the project.

It is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas 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 sections.

AB 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as California Air Resources Board works to implement AB 1493 and help achieve the targets set forth in Assembly Bill 32. Many of the strategies Caltrans is using to help meet the targets in Assembly Bill 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state's

transportation system, education, housing, and waterways, including \$107 billion in transportation funding during the next decade. As shown on the following figure, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

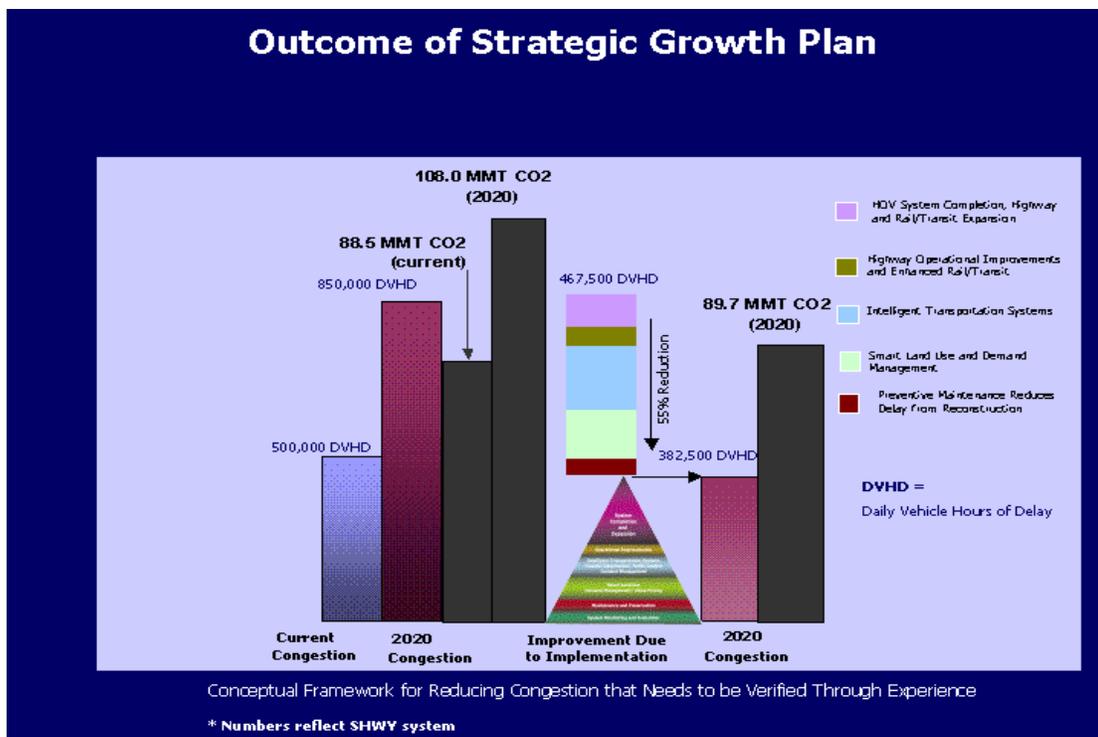


Figure 2.6 Outcome of Strategic Growth Plan

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

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

Table 2-28 summarizes the Department and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. For more detailed information about each strategy, please see *Climate Action Program at Caltrans* (December 2006); it is available at: <http://www.dot.ca.gov/docs/ClimateReport.pdf>.

Table 2-28 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	.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 &	Division of Equipment	Department of General Services		Fleet replacement B20	0.0045	0.0065 0.45

Strategy	Program	Partnership	Method/Process	Estimated CO ₂ Savings (MMT)	
Fuel Diversification			B100		.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team	Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and construction industries	2.5% limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs	Goods Movement Action Plan	Not estimated	Not estimated
Total				2.72	18.67

Caltrans continues to be actively involved on the Governor’s Climate Action Team as the Air Resources Board works to implement Assembly Bills 1493 and 32. As part of the Climate Action Program at Caltrans (December 2006), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, transit-oriented communities, and high-density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority.

Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars and light and heavy-duty trucks. However, it is important to note that control of fuel economy standards is held by the U.S. Environmental Protection Agency and the Air Resources Board.

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

To the extent that it is applicable or feasible for the project, the following measures can also help to reduce the greenhouse gas emissions and potential climate change impacts from projects:

1. Using reclaimed water—currently 30 percent of the electricity used in California is used for the treatment and delivery of water. Using reclaimed

water helps conserve this energy, which reduces greenhouse gas emissions from electricity production.

2. Adding landscaping—reduces surface warming and through photosynthesis decreases carbon dioxide.
3. Substituting Portland cement—using lighter color surfaces such as Portland cement helps to reduce the albedo effect (measure of how much light a surface reflects) and cool the surface; in addition, Caltrans has been a leader in the effort to add fly ash to Portland cement mixes. Adding fly ash reduces the greenhouse gas emissions associated with cement production—it also can make the pavement stronger.
4. Lighting—using energy efficient lighting, such as LED traffic signals, reduces the electricity needed to adequately illuminate the project.
5. Restricting idling time—limiting the amount of time trucks and equipment are allowed to idle reduces greenhouse gas emissions from construction projects.

Adaptation Strategies

Adaptation strategies allow Caltrans and others to 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, more storm surges with greater intensity, and increased frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaptation must 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, Governor Schwarzenegger signed Executive Order S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change.

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

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

- relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates;
- the range of uncertainty in selected sea level rise projections;
- 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 for California.

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

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks

and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding the next five years (through 2013), or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.) This project is located about 250 miles from the Pacific Ocean and is situated at about 3500-foot elevation. This project would not be vulnerable to future 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. Caltrans is an active participant in the efforts being conducted as part of Governor's Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment which is due to be released by December 2010.

On August 3, 2009, Natural Resources Agency in cooperation and partnership with multiple state agencies released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of discussion draft, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The discussion draft focuses on sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to Gov. Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings. A revised version of the report was posted on the Natural Resource Agency website on December 2, 2009; it can be viewed at:

<http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>.

Currently, 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 impacts, 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, the Caltrans will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process 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. This report has been updated with the most recent update being in July 2008.

Public Participation

Caltrans has held three public information meetings for the Olancha/Cartago Project with the first being on April 10, 2000, the second on July 25, 2002, and the last on December 3, 2008. All of these were held at the Olancha School located at 123 School Road in Olancha from 4:00 to 7:00 pm. All of these meetings were publicly noticed in the Inyo Register. Between 50 and 80 people attended each of the meetings. 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. Generally the public favored Alternative 1. This was partially because of the public perception of the economic losses to the business if the road bypassed the communities. Another factor was the feeling that the communities would be an island and access to the open areas surrounding the communities would be restricted.

Biology

Caltrans consulted informally with the U.S. Fish and Wildlife Service in June 2002 and again in March of 2010. Informal consultation with the California Department of Fish and Game occurred in July 2002.

Caltrans consulted with Tom Stevenson of the California Department of Fish & Game 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, California Department of Fish & Game biologist regarding the migration of the Monache deer herd and providing deer crossings with Alternative 4.

Informal consultation was held with California Department of Fish & Game 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, Swainsons's hawk sightings and potential nest locations as well as survey protocol for desert tortoise.

A field review was conducted on March 24, 2009 with Army Corps of Engineers liaison Theresa Stevens to review the project area. The Jurisdictional Delineation Report for the Olancho / Cartago Project was submitted to the Army Corps of Engineers for a jurisdictional determination on December 2, 2009. Army Corps of Engineers made a jurisdictional determination on wetlands and other waters of the United States on May 18, 2010. Their determination was consistent with the Jurisdictional Delineation Report submitted to them.

Cultural

Caltrans contacted the Native American Heritage Commission to identify any local Native American groups and individuals that might have interest in the project. The Commission responded by providing a list of six Native American individuals that 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 the Owens Valley Paiute-Shoshone tribe.

In April 7, 2004 Caltrans submitted the Historic Property Survey Report to the State Historic Preservation Officer for review and concurrence.

On May 24, 2004 the State Historic Preservation Officer concurred with Caltrans' determinations on the National Register of Historic Places eligibility of several

cultural resources in the proposed project's Area of Potential Effects (See Appendix E).

On January 20, 2010 Caltrans submitted the Supplemental Historic Property Survey Report to the State Historic Preservation Officer for review and concurrence.

On March 23, 2010 the State Historic Preservation Officer concurred with Caltrans' determinations on the National Register of Historic Places eligibility of several cultural resources in the proposed project's Area of Potential Effects identified in the Supplemental Historic Property Survey Report (See Appendix E).

Utilities

A relocation plan for utilities would require environmental review before approval to comply with the California Environmental Quality Act (CEQA) and Public Utilities Commission regulations. Caltrans would coordinate with the appropriate local jurisdictions on the relocation of all utilities.

Chapter 4 List of Preparers

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

Allam Alhabaly, Transportation Engineer. B.S., California State University, Fresno, School of Engineering; 10 years in Environmental Engineering unit. Contribution: Noise Study.

Jamal Assi, Environmental Planner. Doctorate in Agricultural Sciences - Pannon University of Agriculture, Hungary; more than five years of postdoctoral environmental research experience in the Department of Animal Science at the University of California, Davis; more than one year of environmental planning experience at Caltrans. Contribution: Community Impact Assessment.

Christopher Bassar, Associate Environmental Planner. B.S., Environmental Resource Management, Pennsylvania State University; 10 years of environmental planning experience (five years of technical and five years of generalist experience). Contribution: Noise Study.

Andrew Brandt, Transportation Engineer; eight years 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 seven years of health and safety experience. Contribution: Hazardous Waste Study.

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 Chegwiddden, 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 development of project.

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

Sarah Gassner, Chief, Southern Sierra Environmental Analysis Branch. B.A., Anthropology, California State University, Fresno; M.A., Cultural Resources Management, Sonoma State University; 14 years of archaeological experience; 9 years of cultural resource management and environmental planning experience with Caltrans. Contribution: Environmental unit supervisor.

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.

Joseph Llanos, Graphic Designer I. B.A., Graphic Design, California State University, Fresno; 14 years of visual design and public participation experience. Contribution: Project mapping and graphics.

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, Chief, Eastern Sierra Management Branch in Bishop and Professionally Qualified Staff – Principal Investigator Prehistoric Archaeology. M.A., Anthropology; 12 years 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: Draft Environmental Document and environmental coordination.

Lora Rischer, Associate Right-of-Way Agent. B.S., Sports Medicine, California State University, Sacramento; 16 years experience in right-of-way. Contribution: Draft Relocation Impact Report.

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 finance, budgeting, and administration/management experience. Contribution: Project manager.

Appendix A California Environmental Quality Act Checklist

CEQA Environmental Checklist

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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

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

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

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

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

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.

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

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

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

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) Otherwise substantially degrade water quality?

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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j) Result in Inundation by seiche, tsunami, or mudflow

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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X. LAND USE AND PLANNING: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XIII. POPULATION AND HOUSING: Would the project:

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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XIV. PUBLIC SERVICES:

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Fire protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Police protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Schools?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Parks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Other public facilities?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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XV. RECREATION:

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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XVI. TRANSPORTATION/TRAFFIC: Would the project:

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

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:

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

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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VIII. MANDATORY FINDINGS OF SIGNIFICANCE

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| <p>a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</p> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <p>b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Appendix B Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-3206
FAX (916) 654-6608
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August 25, 2009

TITLE VI POLICY STATEMENT

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


RANDELL H. IWASAKI
Director

"Caltrans improves mobility across California"

Appendix C Summary of Relocation Benefits

California Dept. 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:

Matthew Palmer, Associate Environment Planner
San Joaquin Valley Analysis Branch
California Department of Transportation
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726

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.

The Business and Farm Relocation Assistance Program

For more information or a brochure on the relocation of a business or farm, please contact:

Matthew Palmer, Associate Environment Planner
San Joaquin Valley Analysis Branch
California Department of Transportation
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726

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 council 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 D Minimization and/or Mitigation Summary

Relocations

The Relocation Payment Program would help eligible residential occupants 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 C*).

Utilities/Emergency Services

Caltrans would coordinate with the Los Angeles Department of Water & 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.

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.

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, and 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 delays, closures, and major changes in traffic patterns. The resident engineer would provide this information through both the Caltrans District 6 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:

- Replant trees and shrubs to ultimately improve and restore the visual quality of the project area. The replanting would include a combination of seeding and container planting vegetation (planting vegetation already started from containers). A minimum 3-year plant establishment period would be included to assure the success of the revegetation. Replaced trees and shrubs would be strategically located to blend with and enhance the existing plant communities.
- When structures are added, types, materials, colors, and textures would be selected to blend with the adjacent natural landscape components (soil, vegetation, rock, etc.) to the greatest practical degree.
- Cut and fill slopes would be contour-graded so they have a non-uniform profile to blend with adjacent slopes. Slope grades would 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.
- The use of metal beam guardrail, or other safety methods would be considered to preserve selected rows of mature trees in lieu of recovery zone areas.
- Topsoil/duff would be collected and stored for placement on disturbed areas prior to replanting.
- The native seed mix, application rates, and planting methods would be determined by or approved in cooperation with a Caltrans landscape architecture representative.
- Existing native vegetation would be protected and preserved wherever possible.

Cultural Resources

Upon selection of the preferred alternative, the sites requiring further evaluation for eligibility for the National Register will be evaluated.

Avoiding cultural resources is always the preferred measure. Cultural resources that can be avoided during construction will be designated as environmentally sensitive areas. An Environmentally Sensitive Area Action Plan would be implemented to protect eligible sites from construction impacts associated with this project.

Historic properties that cannot be avoided during construction and would be adversely affected will be mitigated using various methods such as data recovery excavations, report preparation or public outreach.

A Memorandum of Agreement in compliance with the Section 106 Programmatic Agreement (PA) will be established between Caltrans and the State Historic Preservation Office and will outline the specific requirements for mitigating any potential adverse effects to cultural resources. Mitigation requirements will likely include data recovery, artifact analysis, reporting, and public outreach in compliance with the Secretary of Interior Standards set forth at 36 Code of Federal Regulations Part 800.

If cultural materials were discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist could 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. At this time, the person who discovered the remains would contact District 6 Environmental Branch so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable.

Water Quality and Storm Water Runoff

By incorporating proper and accepted engineering practices and best management practices, the proposed project should not produce significant 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.

A Storm Water Pollution Prevention Plan would be prepared by the contractor and implemented during construction to the satisfaction of the resident engineer. This plan would identify the sources of sediment and other pollutants that affect the quality of storm water discharges. The plan would 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.

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

Geology/Soils/Seismic/Topography

Caltrans would design and construct the structures in this project to seismic standards. Soil types and topography would be considered in the design and construction of this project. Visual resources would be mitigated according Section 2.1.6 (Visual/Aesthetics) of this document, and erosion control would be managed according to Section 2.2.1 (Water Quality) of this document.

Paleontology

Further studies will be necessary to determine if mitigation is required. Implementing a well-designed paleontological resource mitigation plan could minimize any adverse impacts to paleontological resources. Proper paleontological monitoring and mitigation could actually result in the beneficial effects on paleontological resources through the discovery of fossils that would not have been exposed without construction and, therefore, would not have been available for study. The implementation of a well-designed paleontological resource mitigation plan following Caltrans guidelines to salvage fossil specimens during construction excavation for this project would result in a reduction of any adverse impacts.

Hazardous Waste and Materials

Investigation and remediation for these types of hazardous waste sites is considered routine and could add between \$50,000 and \$130,000 per location to the cost of the project. Further studies will be conducted to identify the existence and extent of hazardous waste impact on the selected alternative. Details of the impacts associated with the selected alternative will be provided in the Final Environmental Document. Caltrans will avoid as many of these sites as possible and where these sites are unavoidable, Caltrans will coordinate the 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 would not result in adverse or long-term conditions. Implementation of the following measures would reduce any air quality impacts resulting from construction activities:

- The construction contractor would comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 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 10 is directed at controlling dust.
- Water or dust palliative would be applied to the site and equipment as frequently as necessary to control fugitive dust emissions.
- Soil binder would be spread on any unpaved roads used for construction purposes and on all parking areas for project construction.
- Trucks would be washed as they leave the right-of-way as necessary to control fugitive dust emissions.
- Construction equipment and vehicles would 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 special dust control plan documenting sprinkling, temporary paving, speed limits, and expedited re-vegetation of disturbed slopes would be developed to minimize construction impacts to existing communities.
- Equipment and materials storage sites would be located as far away from residential and park uses as practical. Construction areas would be kept clean and orderly.
- To the extent feasible, environmentally sensitive areas would be established for sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited.
- Track-out reduction measures such as gravel pads would 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 would be covered and wet prior to transport, or adequate freeboard (space from the top of the material to the top of the truck) would be provided to reduce PM₁₀ and deposition of particulate during transportation.

- Dust and mud that are deposited on paved, public roads due to construction activity and traffic would be removed to reduce particulate matter.
- To the extent feasible, construction traffic would be routed and scheduled to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Mulch or plant vegetation would be installed as soon as practical after grading to reduce windblown particulate in the area.

Noise

Avoidance, Minimization, and/or Noise Abatement under the National Environmental Policy Act

For purposes of the National Environmental Policy Act, noise abatement must be considered because five receivers have been identified as approaching or exceeding the noise abatement criteria by 2034.

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 upon 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 (Table D1). 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.

Table D1: Future Noise Levels, Soundwall 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	2	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	6	56	7	55	8	54	8	54	8

*Masonry block wall **Insertion losses

Source: 2010 Noise Study

While it may be possible to build an acoustically feasible, that is, a 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. 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.

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 the 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

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 7-1.01I and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures would minimize the temporary noise impacts from construction:

- All equipment would 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 would 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.

Avoidance, Minimization, and/or Noise Abatement under the California Environmental Quality Act

Caltrans noise policy is contained in Caltrans' August 2006 *Traffic Noise Analysis Protocol*. This protocol, approved as the California Department of Transportation's official noise policy by the Federal Highway Administration on August 16, 2006, establishes noise abatement criteria of 67 dBA for residential homes.

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 feasible. 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 impact the visual resources in the area and would reflect noise possibly affecting other residences.

While Caltrans recognizes an increase of 12-decibels as a substantial noise increase, Section 5.6 of the Caltrans' Traffic Noise Analysis Protocol only allows consideration of extraordinary abatement measures (insulation of a public or private residence) on a case by case basis when a project causes an increase of 30-dBA, or when after-project noise levels are 75-dBA or higher. No noise increases modeled for this project meet the stated criteria.

Since no significant noise impact would occur as a result of the project, no abatement is proposed. The final decision on noise abatement would be made upon completion of the project design and the public involvement processes. The noise abatement decision presented is based on preliminary project alignments and profiles, which may be subject to change. 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 eliminated from the final project design. A final decision to construct noise abatement will be made upon completion of the project design.

Natural Communities

Freemont Cottonwood Series

Caltrans is proposing to replace any trees removed at a 2:1 ratio. Plantings would occur as close to the project area as possible. If feasible, the replacement trees would be propagated from trees within the study area to maintain local adaptations and genotypes. All newly planted trees would be monitored for the period to be determined by the California Department of Fish and Game. Watering may be required until the taproot is established.

Bulrush Series, Greasewood Series, Mixed Willow Series, Saltgrass Series

Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (*see Section 2.3.2*).

Wetlands and Other Waters

Installing protective wetland mats or performing work outside of the rainy season would minimize temporary impacts to wetlands or other waters of the United States, and these areas would be restored to pre-project conditions. Other mitigation measures as required by United States Army Corps of Engineers will be implemented.

Any wetlands that are not in the direct path of construction would be avoided by designating them as environmentally sensitive areas.

Permanent impacts to wetlands would be mitigated through the in-lieu fee process or by purchasing credits from an approved bank at ratio to be determined during the permitting process with the United States Army Corps of Engineers. A wetland mitigation ratio of 1:1 is being proposed to the United States Army Corps of Engineers.

Plant Species

Caltrans intends to collect duff and soil to a depth of six inches, and then redistribute the material on disturbed areas within the study area. This action should be sufficient to mitigate impacts to Parish's popcorn-flower, crowned muilla, Sanicle cymopterus, and pygmy poppy.

Animal Species

Bats

Construction activities near existing structures that provide habitat for bats will be limited to daytime hours or specific times a year. All structures to be demolished will be surveyed for use of bats. If it is determined bats are using any structures, demolition will be scheduled when bats are not present or exclusion measures will be incorporated to prevent any harm to bats.

Mule deer

Alternative 4, if chosen, would incorporate at least two wildlife crossings to minimize impacts to the migration of deer.

Yellow warbler

Prior to project implementation surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of nesting birds. Special provisions will also be included in the construction contract to protect all migratory birds. Riparian areas will be restored and revegetated to pre-project conditions following project completion.

Alkali Skipper

Prior to project implementation, surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of the alkali skipper. Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (*see Section 2.3.2*).

Owens Valley vole

Prior to project implementation, surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of the Owens Valley vole. Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (*see Section 2.3.2*).

Threatened and Endangered Species

Owens Valley checkerbloom

Caltrans intends to collect duff and soil to a depth of six inches, and then redistribute the material on disturbed areas within the study area. This action should be sufficient to mitigate impacts to Owens Valley checkerbloom.

Owens pupfish

Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (*see Section 2.3.2*). Prior to project implementation surveys will be

performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of Owens pubfish.

Owens tui chub

Caltrans is proposing to mitigate impacts to wetlands at a 1:1 ratio to ensure no net loss of wetlands (*see Section 2.3.2*). Prior to project implementation surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of Owens tui chub.

Western snowy plover

No mitigation is necessary for western snowy plover.

California wolverine

No mitigation is necessary for California wolverine.

Least Bell's vireo

Caltrans is proposing to restore and revegetate riparian areas affected by the proposed project at a 3:1 ratio. Prior to project implementation surveys will be performed according to guidelines set by the U.S. Fish and Wildlife Service to accurately determine the presence or absence of nesting birds. Special provisions will also be included in the construction contract to protect all migratory birds including least Bell's vireo.

Sierra Nevada bighorn sheep

If Alternative 4 becomes the preferred alternative, the following avoidance and minimization measures would be implemented to ensure no harm come to any Sierra Nevada bighorn sheep:

- The qualified biologist(s) shall be responsible to see that all persons employed on the construction project receive instruction regarding the Sierra Nevada bighorn sheep prior to performing on-site work. Instruction shall include the importance of the Sierra Nevada bighorn sheep to the environment, recovery efforts for the Sierra Nevada bighorn sheep, implications of the Endangered Species Act, and the importance of following all terms and conditions provided in the biological opinion. An education program that has been previously approved by the U.S. Fish & Wildlife Service may be used to satisfy this term and condition, provided the project-specific mitigation measures are fully discussed.
- The contractor shall also conform to the following requirements and shall conduct his work accordingly.

- Wrappers, food scraps, cans, bottles, and other food-related refuse must be disposed of in a closed trash container or removed from the site.
 - The contractor shall not travel or place materials or equipment outside the designated construction areas.
 - The contractor shall not touch, harass, collect, or otherwise harm Sierra Nevada bighorn sheep.
 - If, during construction, the contractor discovers a Sierra Nevada bighorn sheep, the contractor shall protect it and immediately notify the engineer. Work shall be stopped in the immediate area until the sheep leaves on its own, or can be safely discouraged from the area by an approved biologist.
 - If, during construction a Sierra Nevada bighorn sheep is injured or killed, the contractor shall immediately notify the Engineer. Work shall be stopped in the immediate area until the approved biologist can remove the injured or killed Sierra Nevada bighorn sheep.
- Caltrans shall submit the names(s) of the proposed authorized biologist(s) to the U.S. Fish & Wildlife Service for review and approval at least 15 days prior to the onset of activities. No construction activities shall begin until an authorized biologist is approved.

Swainson's hawk

Language would be placed in the contract protecting migratory birds, their occupied nests, and their eggs from disturbance or destruction. Caltrans is proposing to replace any trees removed at a 2:1 ratio. Plantings would occur as close to the project area as possible.

Desert tortoise and Mohave ground squirrel

Caltrans would compensate for direct impacts to the desert tortoise and Mohave ground squirrel as well as their habitat by preserving habitat in areas that are important for the recovery of the desert tortoise and Mohave ground squirrel populations.

Caltrans also would replace each acre of lost habitat with three acres of quality habitat at a location approved by the U.S. Fish and Wildlife Service and California Department of Fish and Game. Total impact compensation acreages for each build alternative are shown in the table below.

A Biological Opinion from the U.S. Fish and Wildlife Service for the potential adverse effects to the federally listed desert tortoise would be required for this project. See Chapter 3 for details of Caltrans coordination efforts with the U.S. Fish and Wildlife Service.

Once a preferred alternative is selected, the Federal Highway Administration would initiate formal consultation with the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act of 1973.

Table D2 - Compensatory Mitigation for Impacts to the Desert Tortoise and Mohave Ground Squirrel

Project Alternative	Acres of Impact*	Mitigation Ratio	Total Acres of Compensation*
1	215	3:1	645
2	268	3:1	804
2A	279	3:1	837
3	269	3:1	805
4	296	3:1	888

* Includes 60 acres of borrow site

Desert tortoise

Before any construction activity starts, the contractor awarded the proposed project shall furnish a qualified biologist, who will be responsible for overseeing compliance with Contract Special Provisions as stated below. The following will be included in the Contract Special Provision for protection of desert tortoise throughout the project:

- The qualified biologist(s) shall be responsible to see that all persons employed on the construction project shall receive instruction regarding the desert tortoise prior to performing on-site work. Instruction shall include the importance of the desert tortoise to the environment, recovery efforts for the desert tortoise, implications of the Endangered Species Act, and the importance of following all terms and conditions provided in the biological opinion. Employees shall be notified that they are not authorized to handle or otherwise move desert tortoises encountered on the project site. An education program that has been previously approved by the USFWS may be used to satisfy this term and condition, provided the project-specific mitigation measures are fully discussed.
- Only biologists authorized by the USFWS and CDFG shall handle desert tortoises.

- No construction activities shall begin until an authorized biologist is approved.
- The authorized desert tortoise biologist shall monitor installation of the temporary fence. Two types of material can be used to construct the temporary fence: 1) Plastic diamond mesh, install a minimum of 18 inches above ground and fold the bottom of the mesh toward the habitat side of the barrier and away from the highway then backfill: 2) Install temporary linear sediment barrier (Type silt fence), minimum 18 inches above ground and bury material minimum 6 inches below ground. After installation, the qualified biologist(s) shall conduct 100 percent coverage clearance surveys and regularly inspect the fence to ensure its integrity. Any repairs to the fence shall be made immediately. The entire project area shall be surveyed for desert tortoises by the authorized biologist after installation of the fence and within seven days prior to the start of any further construction activities.
- Desert tortoise burrows within the project limits shall be excavated by hand either by or under the direct supervision of the authorized biologist, and collapsed to prevent reentry.
- All desert tortoises found shall be removed from within the fenced area or placed outside of the construction corridor. If the removal is during the season of aboveground activity, the desert tortoises shall be placed beside a nearby burrow of appropriate size. If the removal is not in the season of aboveground activity, the desert tortoise shall be moved (dug out of burrow, if necessary) on a seasonably warm day and placed at the mouth of a nearby burrow of appropriate size. If the desert tortoise does not enter the burrow, an artificial burrow may be constructed and the desert tortoise placed within it. The authorized biologist shall be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.
- If desert tortoises are encountered above ground during construction, the desert tortoise shall be moved out of the construction corridor, placed under a shrub in the direction it was traveling. In general, desert tortoises should be moved the minimum distance possible to ensure their safety. If desert tortoises need to be moved at a time of the day when ambient temperatures could harm them (i.e. extremely low [less than 40°F] or high [greater than 90°F] temperatures), they shall be held overnight in a clean cardboard box. These desert tortoises shall be kept in the care of the authorized biologist under appropriate controlled temperatures and released the next day when temperatures are favorable. All cardboard boxes shall be properly discarded after one use.

- The authorized biologist(s) shall follow the *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council 1994 - revised 1999).
- If it is necessary for a worker to park temporarily outside of the fenced enclosures, the worker shall inspect for desert tortoises under the vehicle prior to moving it. If a desert tortoise is present, the worker shall carefully move the vehicle only when necessary and when the desert tortoise would not be injured by moving the vehicle or shall wait for the desert tortoise to move out from under the vehicle. The authorized biologist may also be contacted to remove the desert tortoise. The authorized biologist shall maintain a record of all desert tortoises handled. This information shall include for each desert tortoise:
 - The locations (narrative and maps) and dates of observations,
 - General condition and health, including signs of diseases, injuries and state healing, and whether animals voided their bladders,
 - Location moved from and location moved to,
 - Diagnostic markings (e.g., identification numbers or marked lateral scutes), and
 - Slide photograph of each handled desert tortoise

Mohave ground squirrel

Worker education programs would be implemented to avoid the take of Mohave ground squirrels and minimize loss of habitat during construction activities. If a Mohave ground squirrel were found within or near the project areas, a qualified biologist would be notified immediately. All work in the vicinity of the Mohave ground squirrel that could injure or kill the animal would cease until the Mohave ground squirrel is moved from harm's way by the authorized biologist or it moves from the construction area on its own accord.

If the authorized biologist identifies a Mohave ground squirrel using burrows within the project area, the California Department of Fish and Game would be consulted regarding the need for a trapping effort to relocate these animals to a safe site. The construction contractor would also comply with the requirements specified by the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

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 would not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions would be taken if invasive

species were 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.

Appendix E SHPO Concurrence

RESOURCES AGENCY



STATE OF CALIFORNIA – THE
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

Christopher Ryan
May 27, 2004
Page 1

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-evaluated 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

Christopher Ryan
May 27, 2004
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for the National Register and does not contribute to any potential eligibility of the larger resource. I concur with Caltrans determination for this resource.

**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:

2010

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,

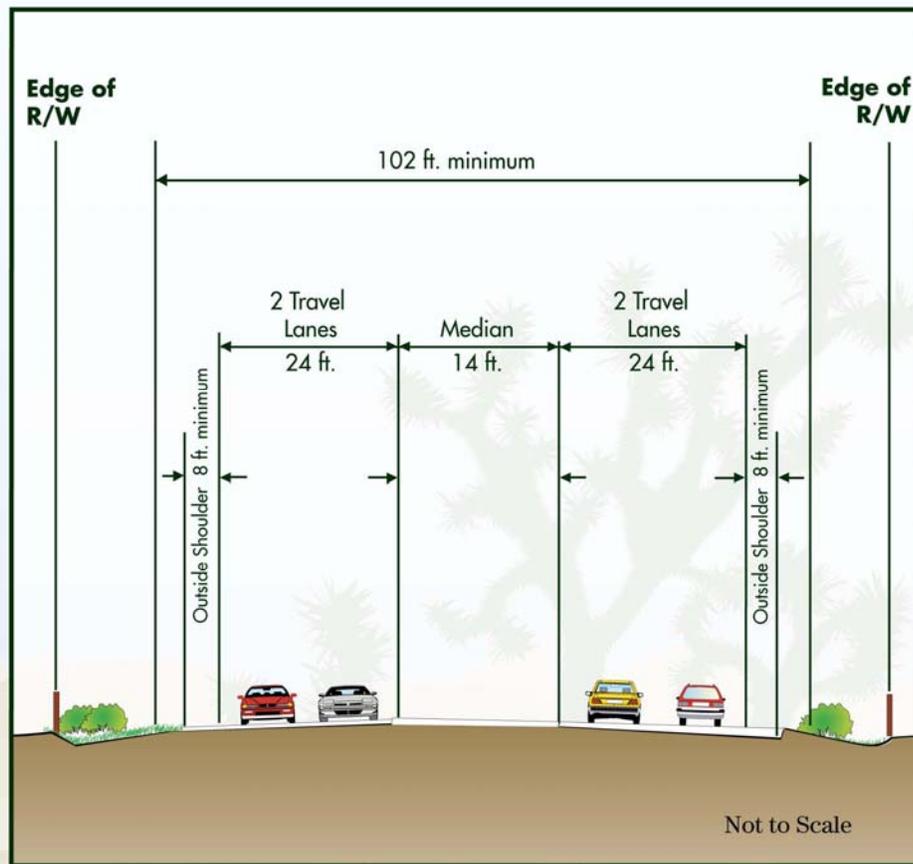


Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Appendix F Typical Cross Sections

Olancha - Cartago
4-Lane Project 

Cross Section



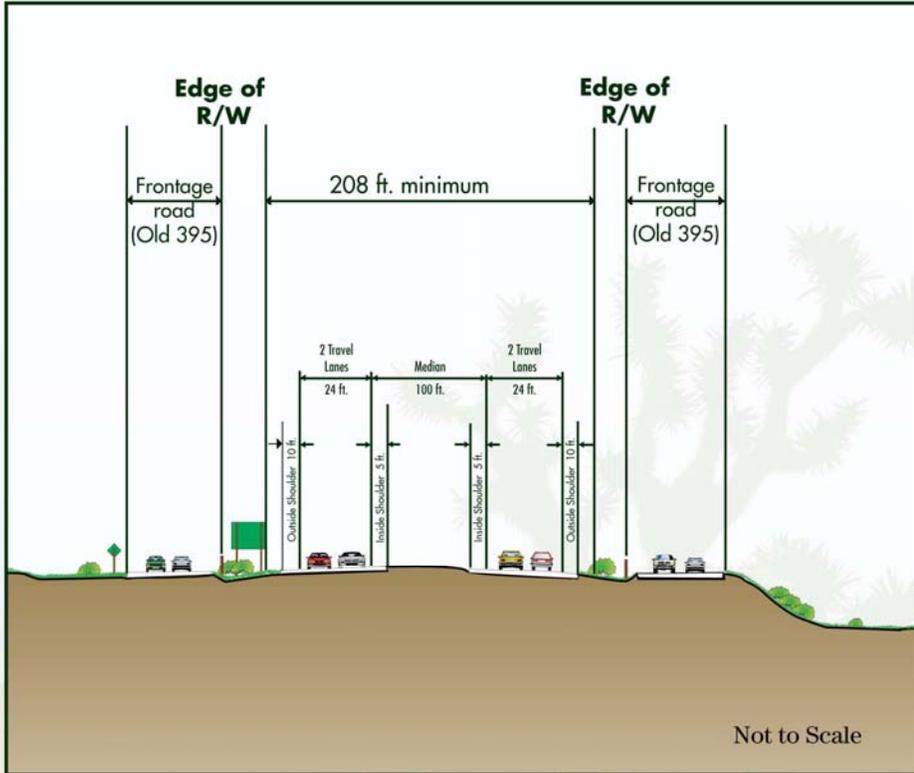
Alternative 1

PM 37.1 - 38.4 and PM 32.2 - 35.7
(Through Cartago) (Through Olancha)



US Department of Transportation
Federal Highway Administration

Cross Section



Alternative 2 and 2A

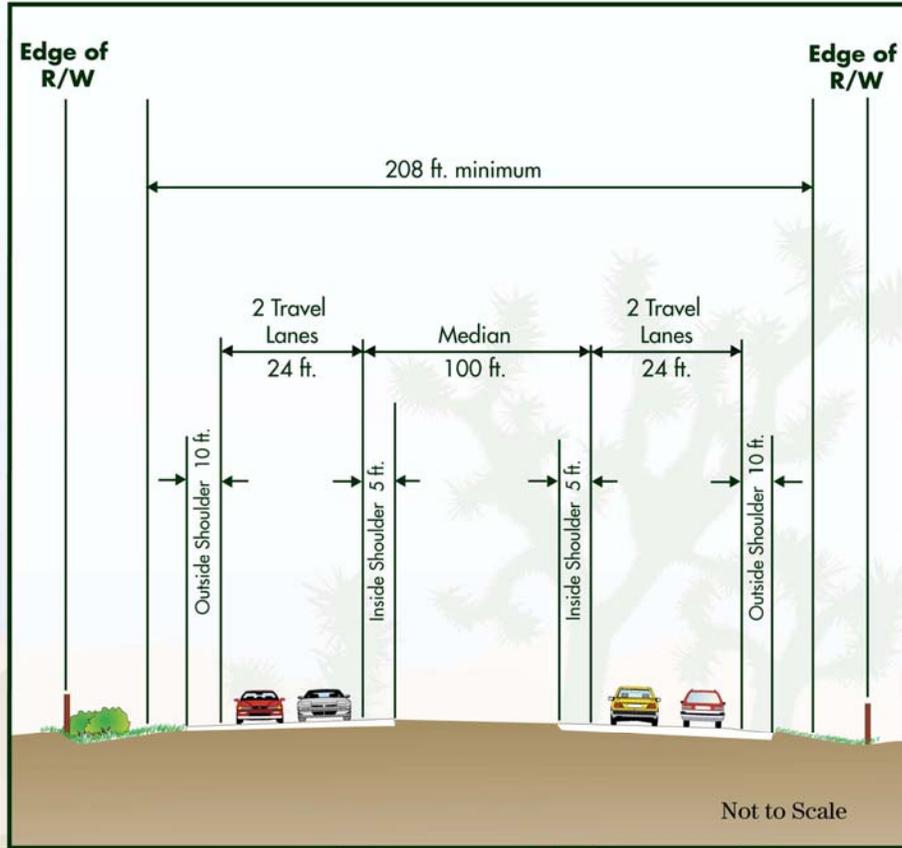
Expressway with Frontage Road

(Frontage Roads will be on one side or the other but not both)



US Department of Transportation
Federal Highway Administration

Cross Section



All Alternatives Expressway without Frontage Roads



US Department of Transportation
Federal Highway Administration

Appendix G U.S. Fish and Wildlife Service Species List



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003



IN REPLY REFER TO:
81440-2010-SL-0200

March 26, 2010

Virginia Strohl
Acting Chief, Central Region Biology Branch
California Department of Transportation, District 6
2015 East Shields Avenue, Suite A-100
Fresno, California 93726

Subject: Species List for the Proposed Project on U.S. Highway 395 between Post Miles
29.2 and 41.8, Inyo County, California

Dear Ms. Strohl:

This letter is in response to your request, dated and received in our office March 4, 2010, for information on endangered, threatened, proposed, or candidate species that may occur within the vicinity of the proposed project. The California Department of Transportation (Caltrans) is proposing a project on U.S. Highway 395 from just south of its junction with State Route 190 at post mile 29.2 to just north of Cartago at post mile 41.8. The Federal Highway Administration has delegated authority for consultation to Caltrans; consequently, your request and our response are made pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act).

This letter fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Act. Caltrans, as the delegated lead Federal agency for the project, has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a construction project which may require an environmental impact statement¹, Caltrans has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If Caltrans determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a written request for formal consultation. During this review process, Caltrans may engage in planning efforts but may not

¹ "Construction project" means any major Federal action which significantly affects the quality of the human environment designed primarily to result in the building of structures such as dams, buildings, roads, pipelines, and channels. This includes Federal actions such as permits, grants, licenses, or other forms of Federal authorizations or approval which may result in construction.



Virginia Strohl

2

make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Only listed species receive protection under the Act; however, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Game's Natural Diversity Data Base. You can contact the California Department of Fish and Game at (916) 324-3812 for information on other sensitive species that may occur in this area.

Should you have any questions, please contact Erin Shapiro of the Ventura Fish and Wildlife Office at (805) 644-1766, extension 369.

Sincerely,



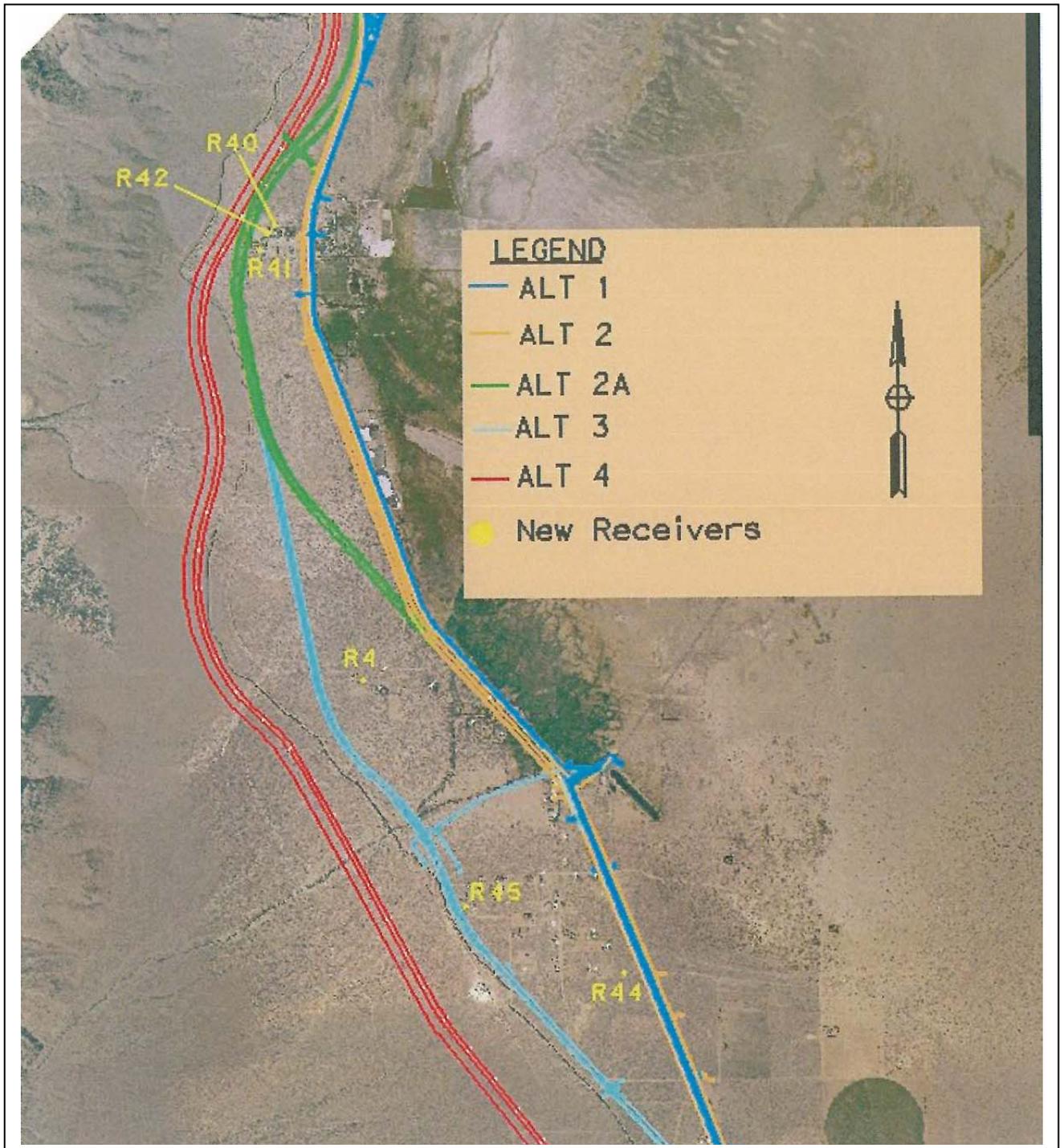
Raymond Bransfield
Senior Biologist

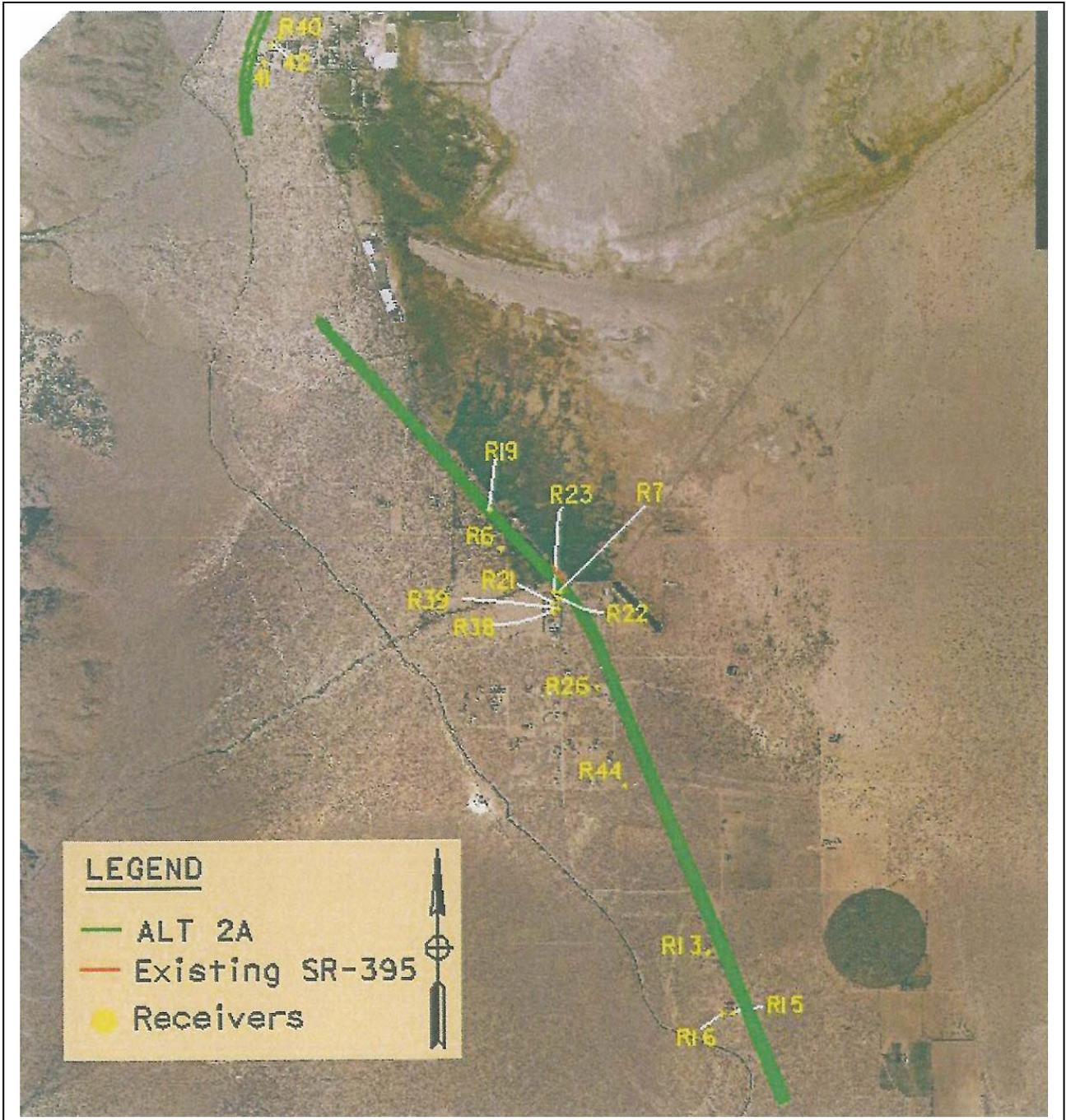
Appendix G • U.S. Fish and Wildlife Service Species List

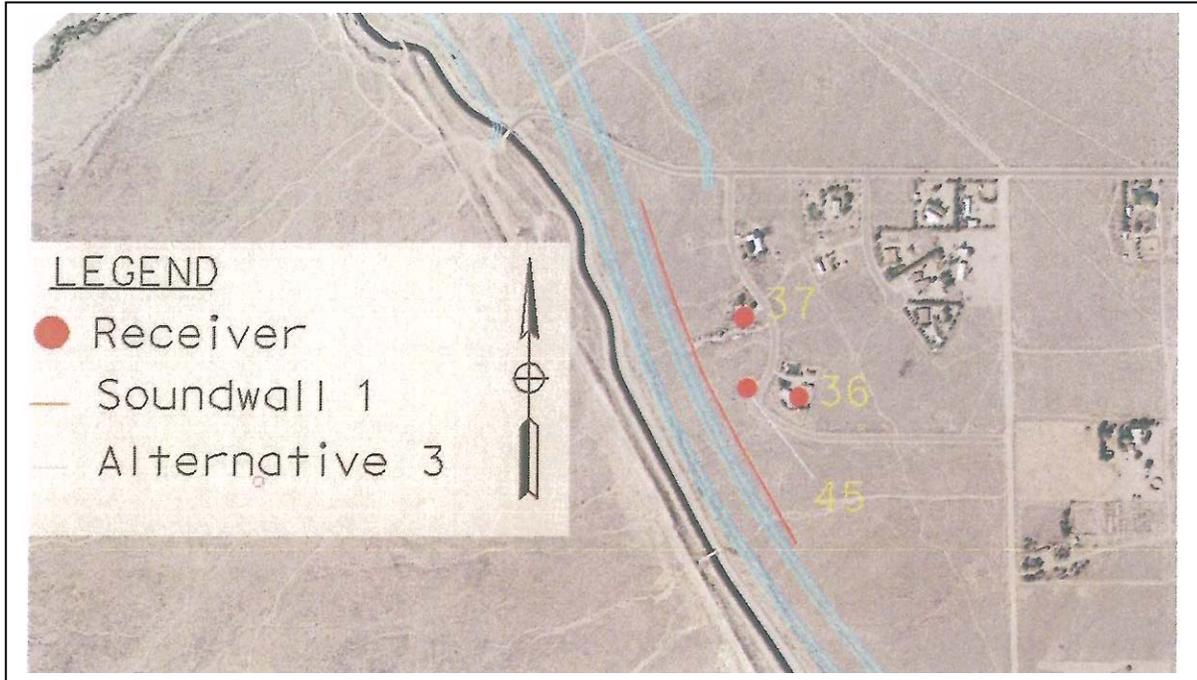
California Department of Fish and Game
 Natural Diversity Database
 Selected Elements by Scientific Name - Landscape

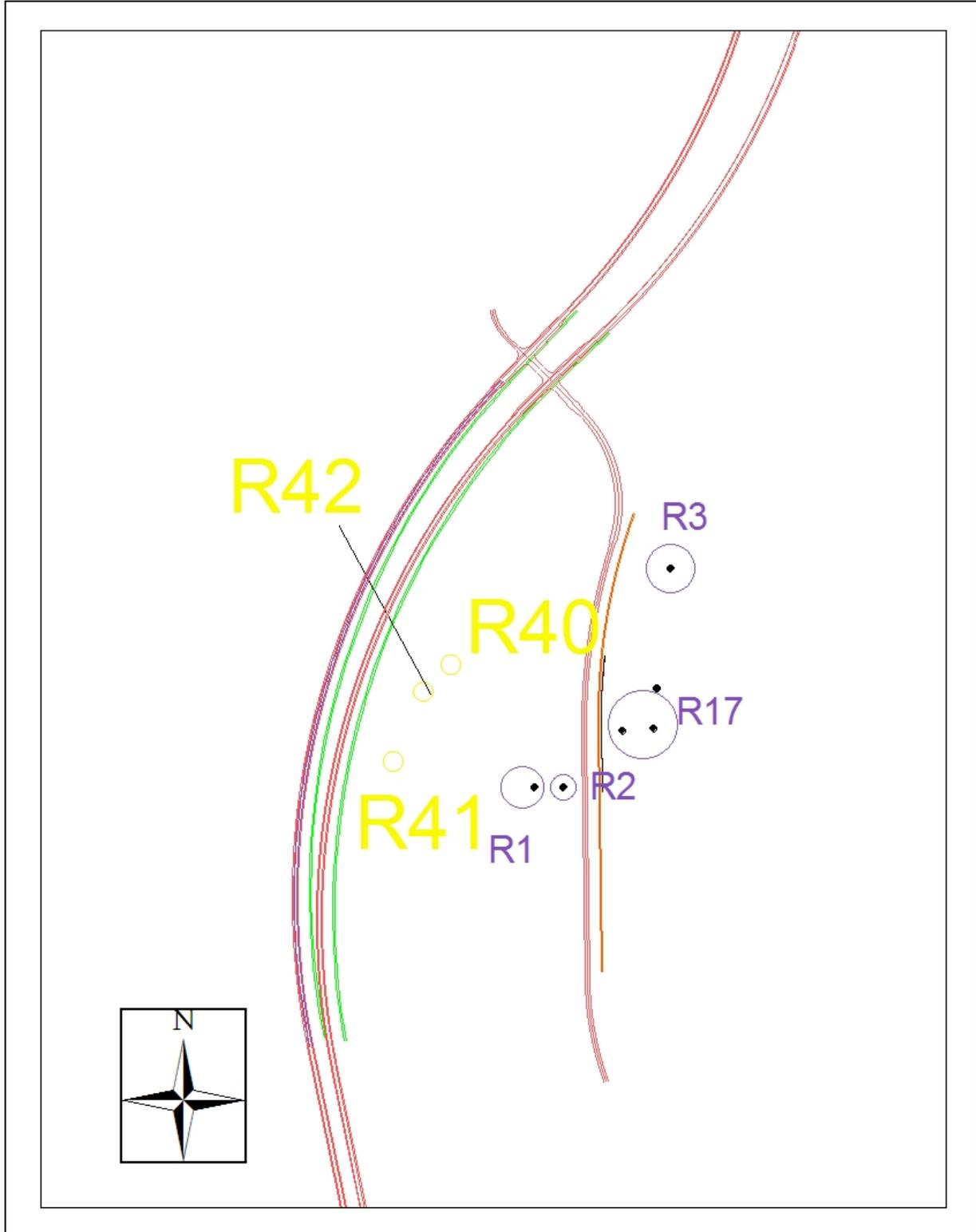
Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
1 <i>Buteo swainsoni</i>	Swainson's hawk	ABNKC19070		Threatened	G5	S2		
2 <i>Charadrius alexandrinus nivosus</i>	western snowy plover	ABNNB03031	Threatened		G4T3	S2		SC
3 <i>Cyprinodon radiosus</i>	Owens pupfish	AFCNB02090	Endangered	Endangered	G1	S1		
4 <i>Gila bicolor snyderi</i>	Owens tui chub	AFCJB1303J	Endangered	Endangered	G4T1	S1		
5 <i>Gopherus agassizii</i>	desert tortoise	ARAAF01010	Threatened	Threatened	G4	S2		
6 <i>Gulo gulo</i>	California wolverine	AMAJF03010		Threatened	G4	S2		
7 <i>Lupinus padre-crowleyi</i>	Father Crowley's lupine	PDFAB2B2Z0		Rare	G1	S1.2	1B.2	
8 <i>Ovis canadensis sierrae</i>	Sierra Nevada bighorn sheep	AMALE04011	Endangered	Endangered	G4T1	S1		
9 <i>Sidalcea covillei</i>	Owens Valley checkerbloom	PDMAL11040		Endangered	G3	S3.1	1B.1	
10 <i>Vireo bellii pusillus</i>	least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2		
11 <i>Xerospermophilus mohavensis</i>	Mohave ground squirrel	AMAFB05150		Threatened	G2G3	S2S3		

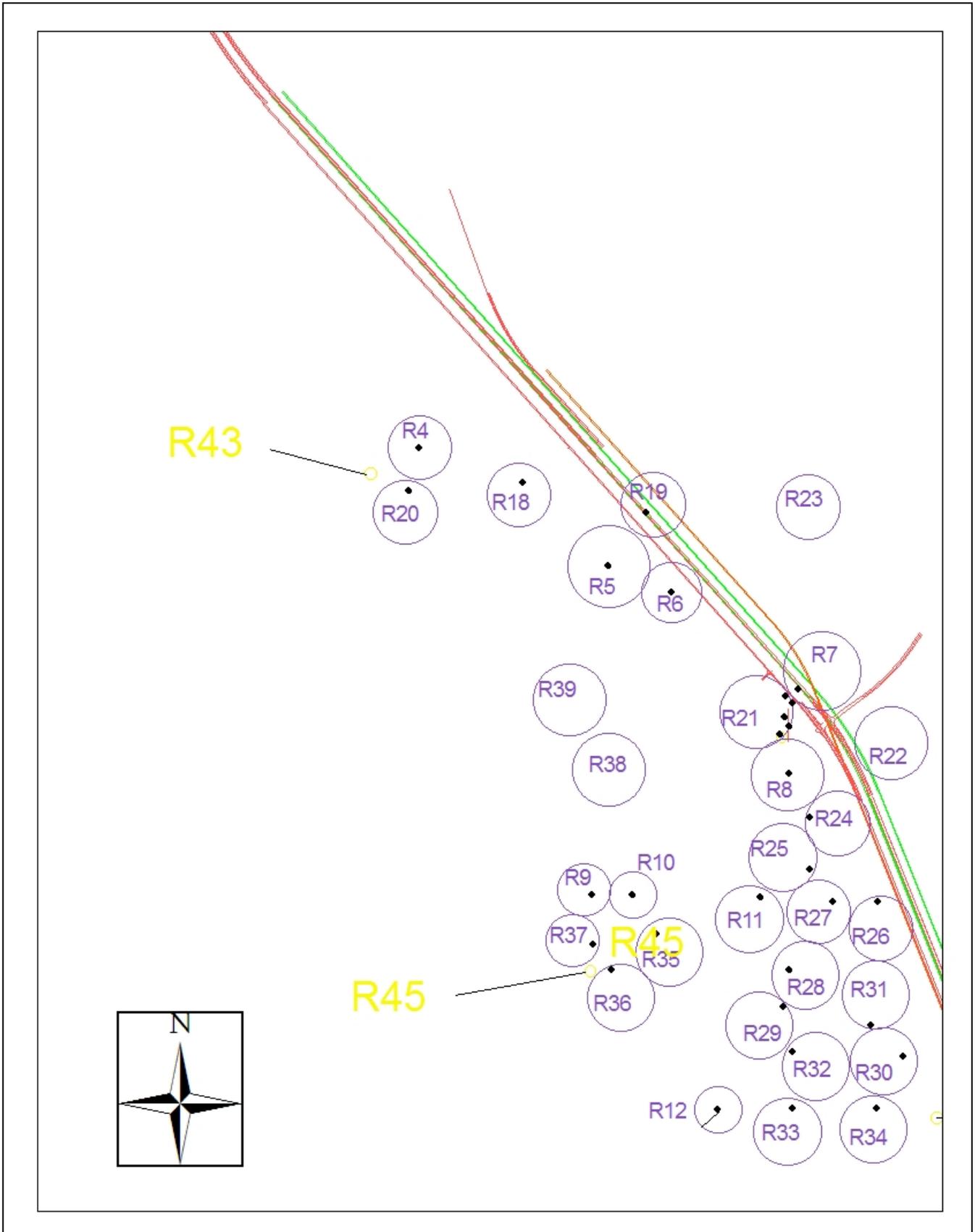
Appendix H Noise Receptor Locations

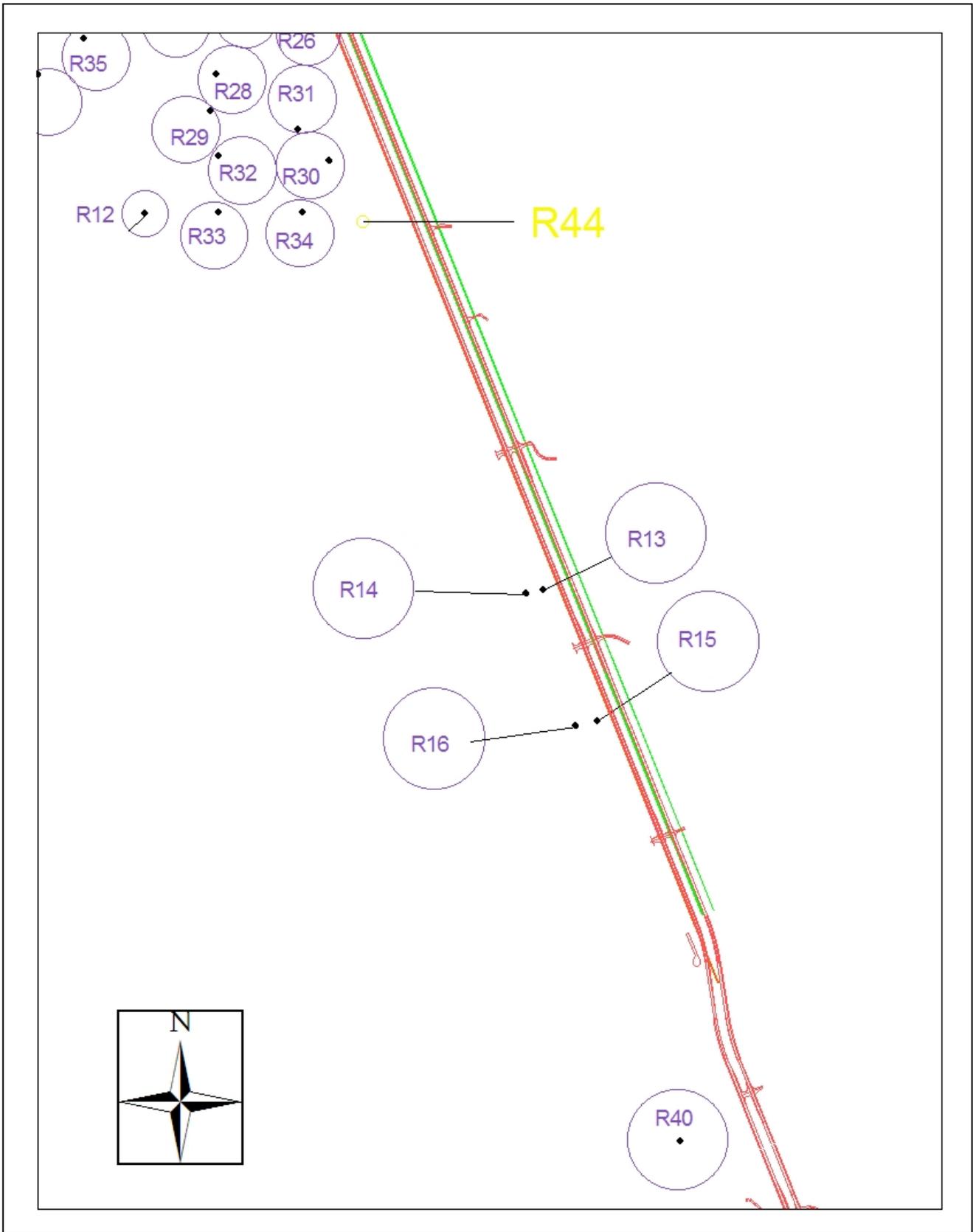












List of Technical Studies that are Bound Separately

Draft Relocation Statement
Air Quality Report
Noise Study Report
Noise Abatement Decision Report
Water Quality Report
2003 Natural Environment Study
2010 Natural Environment Study
Botanical Survey
Wetland Delineation Report
Location Hydraulic Study / Floodplain Evaluation
Historical Property Survey Report

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

Initial Site Assessment for Hazardous Waste
Visual Impact Assessment
Community Impact Assessment
Paleontological Identification Report