

Towne Pass Curve Correction

INYO COUNTY, CALIFORNIA
DISTRICT 9 – INYO – 190 PM 69.2/69.8
09-35320
09-1200-0007

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment and Section 4(f) Evaluation



**Prepared by the
State of California Department of Transportation**

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

September 2016



General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Initial Study/Environmental Assessment (IS/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Inyo County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives Caltrans has considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document.
- Additional copies of this document and related technical studies are available for review at the Caltrans district office in Bishop and the Death Valley National Park Visitor Center. This document may be downloaded at the following website:
<http://www.dot.ca.gov/dist9/environmental/index.html>
- We'd like to hear what you think. If you have any comments about the proposed project, please send your written comments to Caltrans by the deadline.
- Send comments via U.S. mail to:
Angela Calloway, Environmental Office Chief
California Department of Transportation, Environmental Planning
500 Main Street, Bishop, CA 93514
- Send comments via email to: angela.calloway@dot.ca.gov.
- Be sure to send comments by the deadline: November 9, 2016.

What happens next:

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

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call the California Department of Transportation, Attn: Angela Calloway, Environmental Planning, 500 Main Street, Bishop, CA 93514; (760) 872-0603 (Voice), or use the California Relay Service at 711.

A curve correction project in Death Valley National Park on State Route 190 from just east of Towne Pass to approximately 15 miles west of Stovepipe Wells Resort (post miles 69.2 to 69.8) in Inyo County, California

**Initial Study with Proposed Mitigated Negative Declaration/
Environmental Assessment and Section 4(f) Evaluation**

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

THE STATE OF CALIFORNIA
Department of Transportation

Cooperating Agencies: Death Valley National Park Service
Responsible Agencies: California Transportation Commission

09-16-16
Date of Approval


Brent Green
District 9 Director
California Department of Transportation
NEPA and CEQA Lead Agency

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PROPOSED MITIGATED NEGATIVE DECLARATION
Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to realign approximately 0.6 mile of State Route 190 from post miles 69.2 to 69.8 to the east of the current alignment near Towne Pass in Inyo County, California. The current six curves will be reduced to three. This realignment will cover approximately 6 acres of ground disturbance and improve the horizontal and vertical curves to meet a minimum design speed of 55 miles per hour, increase the stopping sight distance to 600 feet, and construct paved shoulders throughout the project area. Also, the project will flatten or stabilize side slopes and create a catchment adjacent to the roadway, thus reducing the potential for rockfall.

Determination

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

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

The proposed project would have no effect on Land Use, Growth, Farmlands/Timberlands, Community Impacts, Utilities/Emergency Services, Traffic and Transportation/Pedestrian and Bicycle Facilities, Hydrology and Floodplain, Geology/Soils/Seismic/Topography, Paleontology, Noise and Vibration, Natural Communities, Threatened and Endangered Species, and Wetlands and other Waters.

In addition, the proposed project would have less than significant effects on Water Quality and Storm Water Runoff, Air Quality, Hazardous Waste or Materials, Plant Species, and Animal Species.

With the following mitigation measures incorporated, the proposed project would have less than significant effects on Visual/Aesthetics and Cultural Resources: aesthetic effects would be mitigated by recontouring and revegetating disturbed areas at the end of the project and preserving existing vegetation when possible; cultural resources would be mitigated by development of a historic context for future use in evaluation and interpretation of the Eichbaum Toll Road and protection of non-impacted portions of the Eichbaum Toll Road by establishment of Environmentally Sensitive Areas.

Brent Green
District Director
District 9
California Department of Transportation

Date

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List of Abbreviated Terms

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
PM	post mile
PM _{2.5}	particulate matter less than 10 microns in diameter
PM ₁₀	particulate matter less than 2.5 microns in diameter
USC	United States Code

Chapter 1 Proposed Project

1.1 Introduction

The Department of Transportation (Caltrans) proposes to improve safety and reduce collisions by realigning horizontal and vertical curves and constructing shoulders along a segment of State Route 190 approximately 13.8 miles east of Panamint Springs from 11.3 miles to 11.9 miles east of Panamint Valley Road within Death Valley National Park near Towne Pass in Inyo County, California. The total length of the project is 0.6 mile. Figures 1-1 and 1-2 are maps of the project location. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

State Route 190 is the main east-west thoroughfare through Death Valley. As it passes through the Panamint and Amargosa mountain ranges, State Route 190 experiences steep grades, dips, and sharp curves. Elevations along the route vary considerably from 3,648 feet at the junction with US 395, to over 5,200 feet near Darwin Road, down to 245 feet below sea level in Death Valley, and back up to 2,070 feet at the junction with State Route 127. The roadway generally consists of two 12-foot lanes with 2-foot shoulders, but includes paved and unpaved shoulder pullout areas. The route is the main connection for valley communities and tourist points of interest. State Route 190 accommodates significant amounts of interregional business and tourist traffic.

The existing facility within the project vicinity is a two-lane conventional highway with a posted speed limit of 55 miles per hour. The current roadway is constructed atop and adjacent to segments of a non-engineered historic alignment, which has been operated and maintained by Caltrans since it was purchased by the State of California and added to the State Highway System in 1934. The roadway was built following existing mountainous topography and is located in an arid mountainous setting with steep grades, dips, and curves.

In the vicinity of the project, State Route 190 is composed of two 12-foot lanes with paved shoulders that vary in width from 0 to 2 feet. In the eastbound direction, travelers ascend an approximately 9-mile grade from Panamint Valley before reaching the Towne Pass Summit and descending into Death Valley. The 30-mile-per-hour curve within the project limits is the first eastbound curve with advisory signs after cresting Towne Pass.

In April 1989, existing “change in alignment” signs and 18-inch by 18-inch reflector warning signs located at approximately post mile 69.2 were replaced with a 96-inch by 96-inch curve warning sign facing eastbound traffic. In February 1996, chevron signs were placed through this curve facing eastbound traffic to update signage to meet standards.

Caltrans Maintenance staff replaced and installed curve warning signs in January 2003 to create more consistent curve signage along portions of State Route 190. This work included placement of chevron signs for westbound traffic through the curve at approximately post mile 69.2.

During the spring/summer of 2004, additional enhancements were made along portions of State Route 190 through the installation of delineators to better indicate the alignment of the roadway.

Within the project limits, two separate Table C investigations (2006 and 2008) were initiated based on quarterly reports that identify highway segments, ramp, or intersection locations that have a significantly high concentration of collisions. A Table C investigation is a data report table extracted from the Caltrans Traffic Accident Surveillance and Analysis System. The recommendation from the 2006 investigation was to replace the existing 36-inch reverse turn advisory sign with a larger 48-inch reverse turn advisory sign with a blinking border. In the period waiting for the recommended improvements to be completed, another Table C within the project limits appeared on a quarterly report for 2008. The investigator for the 2008 Table C made no other improvement recommendations, and Traffic Operations continued to monitor the location. Even with the installed recommended improvements, this highway segment continued to yield higher than average collision rates. For this reason, the concept for this project was developed because all potential incremental improvements to address the non-standard geometrics at this location through signing and delineation modifications had been exhausted.

Figure 1-1 Project Location

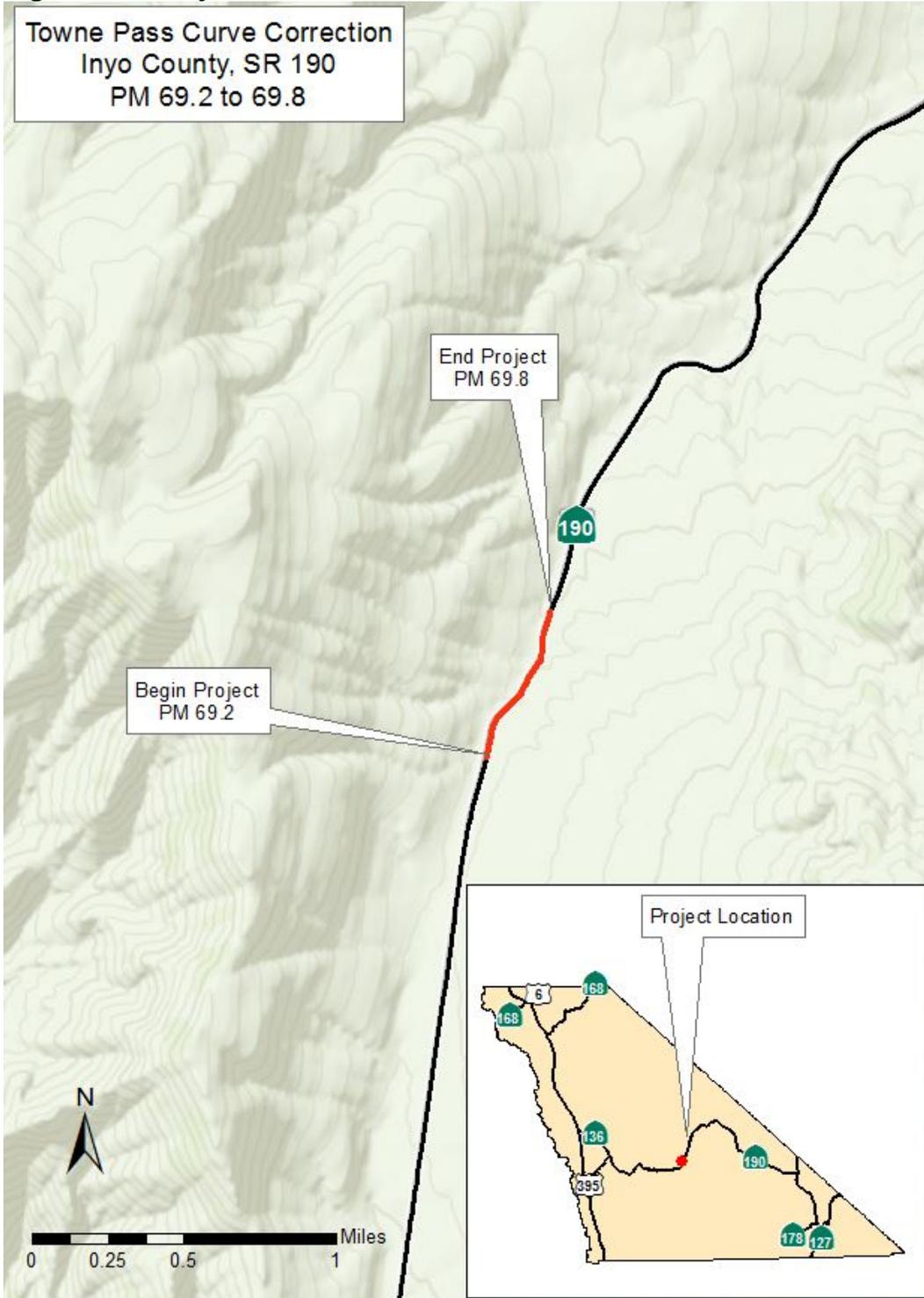
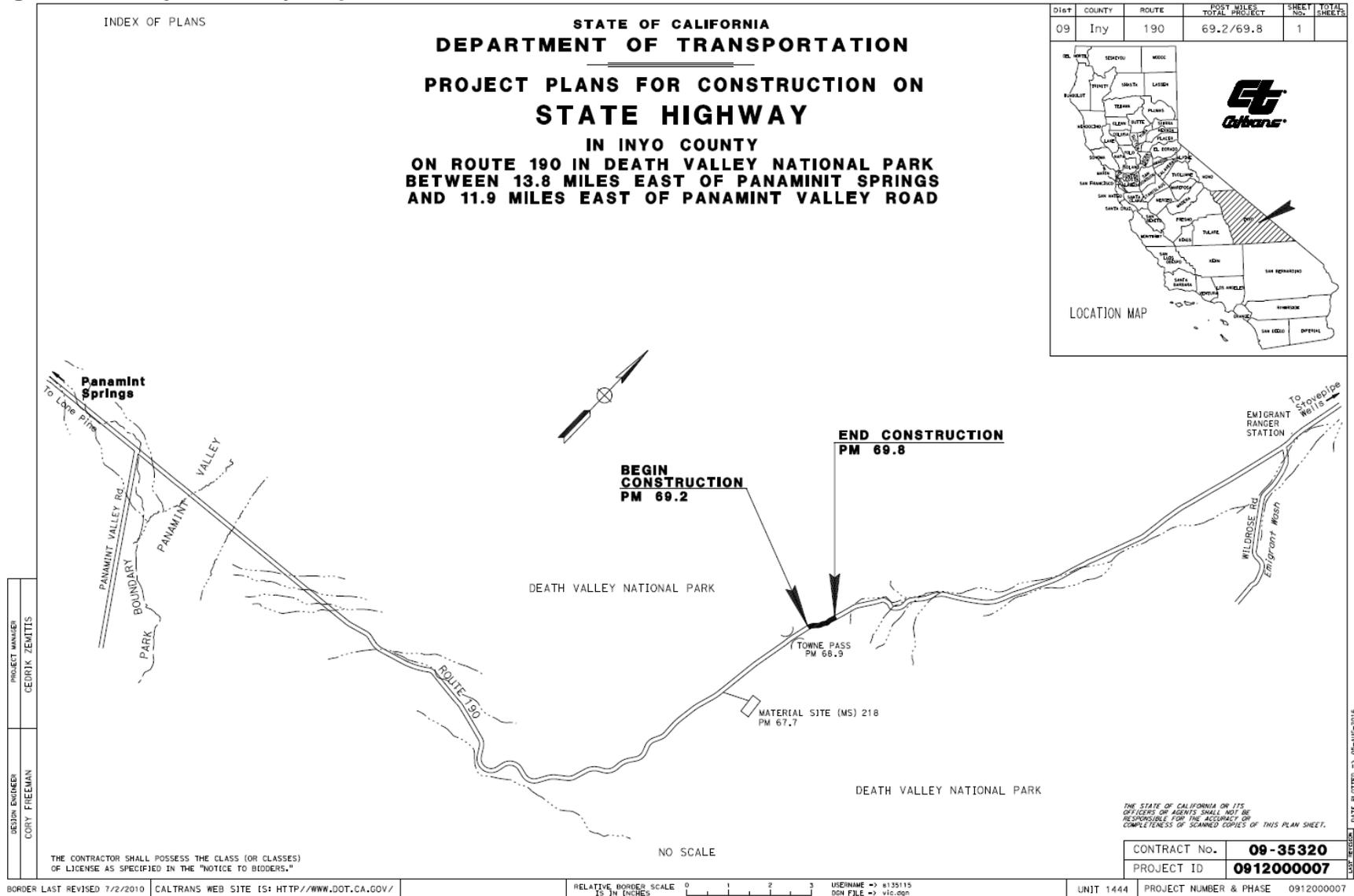


Figure 1-2 Project Vicinity Map with Towne Pass Material Site



1.2 Purpose and Need

1.2.1 Purpose

The purpose of this project is to improve safety and reduce collisions on State Route 190 in the vicinity of Towne Pass.

1.2.2 Need

Problem, Deficiencies and Justification

The total accident rate in the project area is 4.37 times the statewide average, and the combined Fatal and Injury (Fatal + Injury) accident rate is 7.29 times the statewide average for a similar facility as identified by accident data from 2009 to 2014 (see Traffic below).

Within the project limits, the current highway alignment consists of six curves, with curve radii of 390 feet, 350 feet, 920 feet, 385 feet, 560 feet, and 2,292 feet, respectively. The standard curve radius for 55 miles per hour is 960 feet. A smaller curve radius indicates a tighter curve, which must typically be negotiated at a slower speed; a maximum comfortable speed for a typical two-lane conventional highway, such as that present in the project area with a curve radius of 400 feet, is 35 miles per hour. Additionally the reversing nature of the curves in the project area create additional challenges and further reduce the comfortable driving speed for the entire length of the project area.

The stopping sight distance in the project area is as low as 166 feet due to the interaction between crest vertical and horizontal curves. Sight distances associated with this distance would provide for complete stopping only for vehicles moving at about 25 miles per hour. A sight distance of 500 feet provides for complete stopping for vehicles moving at approximately 55 miles per hour.

Paved shoulder widths in the project area range from 0 to 2 feet. Cut slopes are steep, nearly vertical, and are deeply eroded with shallow channels and gullies. Vegetation has not naturally reestablished on cut slopes, and the potential exists for the slopes to shed rocks onto the roadway.

Regional and System Planning

State Route 190 is the only state highway that provides access from the west and all the way through to the east side of Death Valley National Park, a global destination and tourist attraction located in one of the most remote parts of California. Travelers from all over the world use State Route 190 as the gateway to and through Death Valley National Park. Due to the unique nature of the state highway within a national park, Caltrans District 9 and Death Valley National Park have an established partnership and coordinate on all relevant highway-related activities and projects within Death Valley National Park.

State Route 190 in Inyo County is a two-lane conventional highway functionally classified as a minor arterial. State Route 190 within Death Valley National Park is officially designated as a National Scenic Byway and a State Scenic Highway, supporting Death Valley National Park's and Inyo County's policies of scenic preservation. The Towne Pass Curve Correction project is located within the boundaries of Death Valley National Park, whose general

management policies strive to balance resource protection with visitor access and safety. Death Valley National Parks General Management Plan (2002) specifically identified increases in visitation by tourist buses, which currently have to negotiate horizontal and vertical curves that are not built to current standards with kingpin-to-rear-axle distance advisories on State Route 190. Inyo County gets a large portion of its bed tax revenue from Death Valley National Park visitors and highly values good access and safety for recreational and local travelers alike. The Inyo County Regional Transportation Plan identifies a general need to improve traffic flow on State Route 190.

Segment 3 of the Caltrans State Route 190 Transportation Concept Report (2013) specifically recommends realignment of “horizontal and vertical curves and reduce potential for rockfall” for the project area (post miles 69.20 to 69.80), in addition to increasing paved and unpaved shoulder widths.

Traffic

Table 1.1, based on 2014 Traffic Volumes and the 2014 annual average daily traffic (AADT) count, shows current and projected traffic data. The design designation is based on scheduled construction in fiscal year 2017/2018 and a 10-year growth rate of 1.5%.

Table 1.1 Traffic Data

Traffic Data	2014	2018	2023	2028	2038
Annual Average Daily Traffic (AADT) Count	650	690	740	800	930
Design Hourly Volume		120	130	140	160
Directional Split	73.27%				
Percentage Trucks	10.2%				

Source: Caltrans Traffic Operations

The accident history for the 5-year period from October 1, 2009 to September 30, 2014 for this highway segment shows a total accident rate of 9.09 accidents per million vehicle miles (acc/mvm) which is 4.37 times the statewide average of 2.08 accidents per million vehicle miles. See Table 1.2. The combined Fatal and Injury accident rate is 7.58 accidents per million vehicle miles, which is 7.29 times the statewide average of 1.04 accidents per million vehicle miles.

Table 1.2 Accident Rates – Post Miles 69.2 to 69.8

5-Year Data – October 1, 2009 to September 30, 2014

Accident Rates Expressed in Million Vehicle Miles (MVM)					
Actual			Statewide Average		
Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
0.00	7.58	9.09	0.046	1.04	2.08

Source: Caltrans Traffic Operations

Six collisions were recorded during the 5-year period of the accident study. There were six injuries in five injury accidents and no fatalities. One of the collisions caused property damage only. All collisions occurred in clear weather in daylight.

1.2.3 Project Description

This project proposes to realign approximately 0.6 mile of State Route 190 from post miles 69.2 to 69.8 to the east of the current alignment. The current six curves will be reduced to three. The realignment will cover approximately 6 acres of ground disturbance and improve the horizontal and vertical curves to meet a minimum design speed of 55 miles per hour, increase the stopping sight distance to 600 feet, and construct paved shoulders throughout the project area. The project will also flatten or stabilize side slopes and create a rock catchment adjacent to the roadway to reduce the potential for rockfall.

The proposed new alignment and new shoulder designs have been proven to help reduce the types of collisions that have historically occurred within the project limits. The improvements will provide adequate curve radii to maintain control of vehicles, increase stopping sight distance to view any objects in the traveled way, and install a rock catchment to minimize objects in the roadway. The new alignment also provides the opportunity to add paved shoulders wide enough to install skip pattern rumble strips, which would redirect errant motorists back to the traveled way, and provide safer travel for bicyclists and pedestrians in the shoulder.

After construction, portions of the existing roadway not used in the new alignment will be removed. Existing cuts no longer needed for sight distance or shoulders will be stabilized with earthen material from onsite. Both the removed roadway and stabilized cuts will be contoured to look more natural.

To construct this project, approximately 24,000 cubic yards of cut and 12,000 cubic yards of fill will be moved. Approximately 12,000 cubic yards of excess material will be produced. Caltrans intends to pursue a Special Use Permit from Death Valley National Park to allow access to the Towne Pass Material Site for stockpiling and disposal of the excess material; however, disposal of excess material will be the responsibility of the contractor. Specific provisions required for development and use of the material site would be incorporated into the project construction documents.

Possible staging areas include the pullout at the Towne Pass Brake Check area, the Towne Pass Material Site, and within the project limits. Drainage work will be performed in the existing wash to improve storm water conveyance and armoring of fill slopes. Two existing culverts will be upgraded and replaced, and an additional culvert will be added to enhance storm water flows. The current right-of-way is not formally defined. To facilitate the new right-of-way, a Highway Easement Deed from Death Valley National Park will be obtained.

1.3 Alternatives

This section describes the proposed action and the project alternatives that were developed to meet the identified purpose and need of the project, while minimizing environmental impacts. The project is located in Inyo County on State Route 190 in the Death Valley

National Park. The total length of the project is 2.1 miles to incorporate construction signage, but the build area is 0.6 mile in length. Within the limits of the proposed project, State Route 190 is a conventional two-lane, undivided highway with two 12-foot lanes and 0- to 2-foot non-standard shoulders. The project proposes to upgrade the highway to current design standards and to correct operational deficiencies from the non-standard curves.

The alternatives under consideration within this draft environmental document are Alternative 1 and the No-Build Alternative.

1.3.1 Alternative 1

Alternative 1 is the build alternative. The total current cost estimate for Alternative 1 is \$3,897,000, which consists of \$3,884,000 for construction costs and \$13,000 for right-of-way costs.

Alternative 1 proposes to realign the roadway from post miles 69.2 to 69.8 using a 55-mile-per-hour design speed. There are no anticipated exceptions to design standards with this alternative. The current six curves will be reduced to three. Alternative 1 proposes a paved shoulder width of from 4 to 8 feet. This new alignment will be constructed east of the existing alignment. To facilitate the new right-of-way, a Highway Easement Deed from Death Valley National Park will be obtained. During construction, traffic will be maintained by one-way traffic control on the existing roadway, temporary graded dirt surfaces, and/or newly constructed roadway. After construction, portions of the existing roadway not used in the new alignment will be removed. Existing cuts no longer needed for sight distance or shoulders will be stabilized with earthen material from onsite. Both the removed roadway and stabilized cuts will be contoured to look more natural.

Figure 1-3 shows the proposed alignment of the build alternative. Appendix G shows a typical cross-section of this alternative.

Safety Improvements Proposed for Alternative 1

- Increase curve radii to meet current 55-mile-per-hour design speed standards
- Provide uphill and downhill stopping sight distance to meet current design speed standards
- Construct standard super-elevation rates and transitions
- Stabilize cuts and provide rock catchment
- Widen shoulders to a width of 4 to 8 feet
- Install skip pattern rumble strips

Physical Description of Alternative 1

- Between post miles 69.20 and 69.35, the highway will be realigned to the east, away from the existing wash. The maximum offset will be about 55 feet. The inside of the curve will be graded at a variable width, up to 27 feet, to provide horizontal stopping

sight distance. The cut slope beyond the graded area is proposed to be cut at a 2:1 (horizontal:vertical) inclination.

- Between post miles 69.35 and 69.40, the new roadway will cross the remnants of the Eichbaum Toll Road alignment and will be west of the existing roadway for a short distance. The maximum offset to the west will be about 10 feet. The wash will be offset to the west, and the westerly roadway embankment will be protected with large rocks or buried gabion basket mattresses.
- Between post miles 69.40 and 69.65, the new roadway will be realigned to the west, into the wash. The maximum offset will be about 90 feet. The wash will be offset to the west, and the toe of the new westerly embankment will be protected with large rock or buried gabion basket armoring. The old roadbed will be removed, covered with dirt, and graded to natural contours.
- Between post miles 69.65 and 69.80, the new roadway will converge with the existing roadway.
- Existing drainage patterns will stay as they are throughout the project limits. The two existing culverts at post miles 69.20 and 69.35 will be removed, and two new culverts will be installed in the same drainages. A new culvert will be installed at post mile 69.75.

Material Disposal and Staging

Because the project will result in about 12,000 cubic yards of excess earthen material, Caltrans intends to pursue a Special Use Permit from Death Valley National Park to allow access to the Towne Pass Material Site, 2 miles to the south. Some of the benefits of using the site are as follows:

- Reduced hauling distance (125 miles to Pahrump versus 2 miles to the Towne Pass Material Site)
- Reduction of 600 large truck trips hauling excess material traveling 125 miles to Pahrump
 - Reduction in greenhouse gases
 - Reduction of distressed highway pavement
 - Reduction of conflicts between haul trucks and park visitors/public
- Material would be free of invasive weeds
- If the contractor's equipment is adequately washed and sterilized prior to mobilizing at Towne Pass Material Site, the possibility of picking up invasive seeds would be greatly reduced by keeping equipment within a 3-mile radius for the duration of the project
- Increased efficiency for the contractor
 - Each haul truck could do 10 to 12 loads per day instead of 1 to 2
 - This would result in reduced project costs and shorter construction period
- Earthen material at the project site would, for the most part, match the composition and color of what is at Towne Pass Material Site and the Panamint Range in general

Shoulder Width

This project falls under the design guidance and standards of Design Information Bulletin 79-03 as a “spot” improvement per section 1.4 of the guidance. This guidance requires a minimum paved shoulder width of 2 feet. For preliminary design, 8-foot shoulders were chosen to model the most conservative limit of disturbance. Decreasing shoulder width does not significantly decrease cost or impacts. Other shoulder widths may be used in the future and will be selected based on multiple factors.

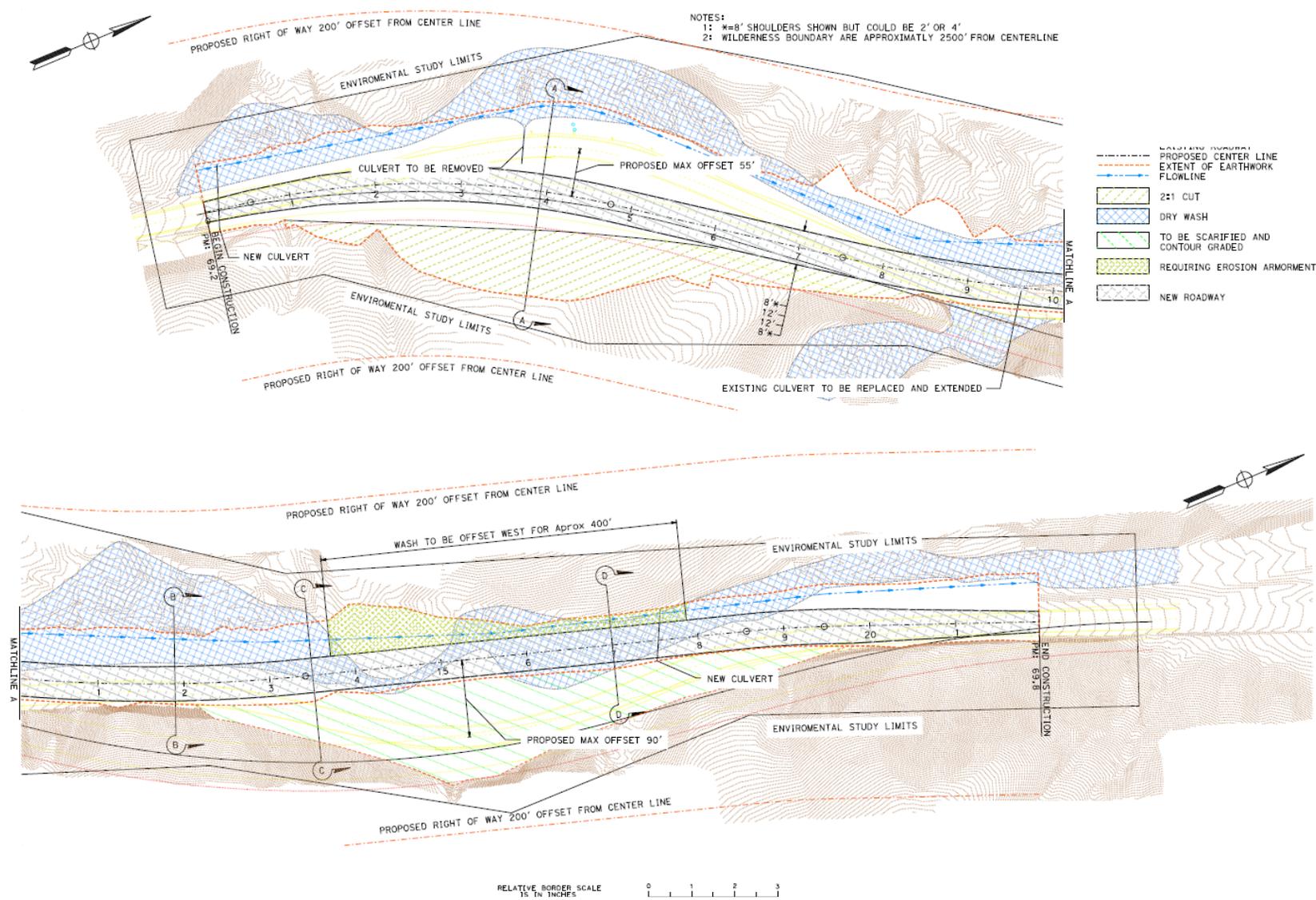
- Two-foot paved shoulders would be consistent with the shoulder widths of the adjacent segments of State Route 190. The shoulders on State Route 190 in Inyo County vary in width between 0 and 2 feet for the entire length of the route from post mile 9.85 at the junction with US 395 to post mile 140.69 at the junction with State Route 127. The exception is that short sections of 5-foot-wide shoulders were put in the Furnace Creek Wash area after the highway was damaged by flooding in 2005.
- Four-foot paved shoulders are wide enough to allow the installation of shoulder rumble strips or more bicycle-friendly skip strips on the edge line. Rumble strips provide an auditory and tactile warning to a driver that the vehicle is veering out of the traveled way. Rumble strips are proven to reduce the accident type prevalent within the limits of this project.
- Eight-foot paved shoulders provide the safety benefits afforded by a 4-foot-wide paved shoulder but also allow a vehicle to pull out of the traveled way while remaining on pavement. This shoulder width also increases the buffer between bicyclists and pedestrians and the vehicular traffic.
- Asymmetrical shoulders could be constructed to provide an 8-foot-wide paved shoulder in the uphill (westbound) direction and a 2- or 4-foot-wide paved shoulder in the downhill (eastbound) direction. This would provide bicyclists an area in which to climb.

Alternative 1 addresses the project’s purpose and need.

1.3.2 No-Build Alternative

The No-Build Alternative would keep the roadway segment as it currently is. No curve or shoulder changes would occur. The No-Build Alternative does not address the project’s purpose and need.

Figure 1-3 Proposed Build Alternative and Environmental Study Area



1.3.3 Comparison of Alternatives

An analysis of the project alternatives indicates that the build alternative would satisfy the safety goal of the project. Table 1.3 shows a comparison of the build alternative and the No-Build Alternative.

Table 1.3 Comparison of Alternatives

Alternative	Cost	Additional Right-of-Way Acquisition	Temporary Construction Easement	Exported Fill Material	Environmental Impacts
Alternative 1	\$4.30 million	Yes	Yes	12,000 cubic yards	Visual/Aesthetics: cuts and fills; Cultural Resources, Section 4(f)
No-Build Alternative	\$0	No	No	No	None

Alternative 1 would have the greatest construction impact when compared to the No-Build Alternative. This alternative carries the highest estimated project cost to build due to the amount of construction work and would also require a temporary construction easement and the acquisition of additional right-of-way from Death Valley National Park.

By changing the existing roadway configuration within the project limits, Alternative 1 would improve the road curvature and vertical profiles of the highway and allow this segment of State Route 190 to meet the standards for a design speed of 55 miles per hour, while providing the safest improvement for motorists and maintenance crews.

After comparing and weighing the benefits and impacts of the feasible alternatives, the Project Development Team has identified Alternative 1 as the preferred alternative, subject to public review.

Final identification of a preferred alternative will occur after the public review and comment period. After the public circulation period, all comments will be considered, and Caltrans will select a preferred alternative and make the final determination of the project's effect on the environment. Under the California Environmental Quality Act (CEQA), if no significant adverse impacts are identified, Caltrans will prepare a Negative Declaration (ND) or Mitigated ND. Similarly, if Caltrans determines the action does not significantly impact the environment, Caltrans, as assigned by the Federal Highway Administration, will issue a Finding of No Significant Impact (FONSI) in accordance with the National Environmental Policy Act (NEPA).

1.3.4 Alternatives Considered but Eliminated from Further Discussion

Alternative 2

During the project development process, the following alignment, referred to here as Alternative 2, was withdrawn from consideration prior to public circulation of this draft environmental document. This alternative is shown in Figure B1-4 in Appendix B of this document.

Alternative 2 proposed to cross the adjacent drainage with a slightly more eastern alignment compared to Alternative 1 and west of the current alignment of State Route 190. This alternative was part of a preliminary look at design options within the project area and would have created a straighter alignment. As design information became available, Alternative 2 was further refined to balance design constraints and reduce potential costs, resulting in Alternative 1.

Alternative 2 would have resulted in approximately 6,000 cubic yards of excess material. The Hydrology Report (January 2016) discussed the 25-, 50-, and 100-year storm events in the Towne Pass area and the volume of water that would need to be handled. To accommodate the potential storm water, large water conveyance structures, such as bridges and/or large multi-box culverts, would be required. The new structures would require ongoing maintenance, further escalating costs.

For these reasons, Alternative 2 was eliminated from further consideration in this environmental document; however, this option is discussed in the Section 4(f) evaluation in Appendix B as an alternative that potentially minimizes harm to Section 4(f) resources.

Alternative 3

During the project development process, the following alignment, referred to here as Alternative 3, was withdrawn from consideration prior to public circulation of this draft environmental document. Alternative 3 would construct a new alignment to the east of the existing roadway primarily within new road cuts. This alternative is shown in Figure B1-5 in Appendix B of this document.

This alternative was part of a preliminary look at design options within the project area and would have created a straighter alignment. Construction of this alignment would require approximately 12 acres of ground disturbance, including approximately triple the cut slopes of those proposed in Alternative 1, resulting in substantially more excess material than Alternative 1, and very little need for fill soils.

This alternative would create greater impacts to resources within Death Valley National Park, a Section 4(f) resource, which is discussed in the Section 4(f) *de minimis* evaluation in Attachment A of Appendix B of this document. This alternative has the potential to create impacts to Death Valley National Park, which would not be appropriate for a *de minimis* finding, and which would require an individual Section 4(f) evaluation.

The escalated construction and mitigation costs (as a result of greater environmental impacts), the increased environmental impacts due to greater acreages impacted (approximately 12 acres when including estimated cut-slopes), the potential that the use to Death Valley National Park would no longer be *de minimis*, and the lower likelihood that Death Valley National Park would agree to an alternative with these impacts would compromise the project to a point where it would be unreasonable to proceed.

For these reasons, Alternative 3 was eliminated from further consideration in this environmental document; however, this option is discussed in the Section 4(f) evaluation in Appendix B as an alternative that potentially minimizes harm to Section 4(f) resources.

1.4 Permits and Approvals Needed

Table 1.4 shows the permits, reviews, and approvals that would be required for project construction.

Table 1.4 Permits and Approvals Needed

Agency	Permit/Approval	Status
California Department of Fish and Wildlife	1602 Agreement for Streambed Alteration	In process and should be complete in July 2018.
Lahontan Region Water Quality Control Board	401 Water Discharge Permit	401 Permit is in process and should be complete in July 2018.
Death Valley National Park	Special Use Permit for Towne Pass Material Site	Will be pursued prior to construction.
Death Valley National Park	Concurrence on Section 4(f) <i>de minimis</i> finding for effects on parklands	In progress, request for comments sent July 1, 2016.
State Historic Preservation Officer	Memorandum of Agreement	Coordination with the State Historic Preservation Officer regarding the effect on historic resources would be required before the final environmental document. Should the build alternative be selected, a Memorandum of Agreement outlining measures to minimize harm to the resource would be required.

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

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

As part of the scoping and environmental analysis done for the project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document, except as noted for temporary construction impacts discussed in Chapter 2:

- **Growth:** The project would not directly or indirectly induce residential development, population growth, or economic activity within the project area (Field visit, March 2, 2016).
- **Farmlands/Timberlands:** There is no farmland or timberland in the project area (Field visit, March 2, 2016).
- **Community Impacts:** The project sits in a remote desert setting within Death Valley National Park and would not require any displacement of homes or businesses (Right of Way Data Sheet, May 13, 2015).
- **Environmental Justice:** The project would not cause disproportionately high and adverse effects on any minority or low-income populations per Executive Order 12898 regarding environmental justice (Field visit, March 2, 2016).
- **Utilities/Emergency Services:** The project would not require the relocation of any utilities or affect emergency services (Right of Way Data Sheet, May 13, 2015).
- **Traffic:** The project would not create permanent impacts because it is not a capacity-increasing project. During reconstruction of the roadway, staged construction would be required to ensure the safe passage of traffic through the work zone. The constraints of the mountainous area, however, would not provide enough space for a temporary detour route to be built. Because the staging for the build alternative would require work next to traffic, temporary lane closures will be required. One-lane traffic control

would cause minimal delay because the work zone is short and daily traffic is light. (Transportation Concept Report 2013; Draft Project Report, August 2016; Field Visit, March 2, 2016)

- Hydrology and Floodplain: The project does not sit within the 100-year floodplain (Hydrology Study, January 8, 2016).
- Geology/Soils/Seismic/Topography: There is no potential for surface fault rupture to occur in the project area, and there are no soil or seismic concerns within the project limits as they relate to public safety (Geotechnical Design Report, June 14, 2016).
- Paleontology: The potential to encounter paleontological resources is nonexistent to low due to the nature of the volcanic rocks and limited excavation proposed to occur in Quaternary sediments present within the project limits (Paleontological Identification Report, October 16, 2015).
- Hazardous Waste or Materials: There are no known sources of hazardous wastes/materials within the project limits. No permanent impacts are expected; temporary construction impacts are discussed in Chapter 2 (Hazardous Waste Revised Initial Site Assessment, June 14, 2016).
- Air Quality: The proposed project lies in the Great Basin Unified Air Pollution Control District. The region encompassing the project limits is a PM₁₀ non-attainment area. The project limits are within an unclassified area for ozone and PM_{2.5}. Short-term impacts to air quality are anticipated due to construction activities, but would be minimized by enforcement of Caltrans' Standard Specifications. This project is a safety project and will not add any capacity to the existing facility. As a result, the project is exempt from air quality conformity requirements under 40 CFR 93.126 as Highway Safety Improvement Program implementation, shoulder improvements, increasing sight distance, and eliminating a hazardous location or feature. The proposed project would not have any substantial long-term impacts to any parameters of air quality (Water Quality, Air Quality, and Noise Evaluation, January 9, 2013).
- Noise and Vibration: The projected peak hour noise levels are below Federal Highway Administration requirements for all receptors within the project vicinity (Water Quality, Air Quality, and Noise Evaluation, January 9, 2013; Caltrans preliminary investigation from Caltrans' Division of Research and Innovation. "Traffic Noise generated by Rumble strips" electronic document accessed on May 26, 2016 at http://www.dot.ca.gov/newtech/researchreports/preliminary_investigations/docs/rumble_strip_noise_preliminary_investigation_3-5-12.pdf).

- **Natural Communities:** There is no riparian habitat within the project area. The project would not have an impact on any sensitive natural communities (Natural Environment Study, June 2016).
- **Wetlands and other Waters:** The project is not located within a wetlands area or near other waters of the United States (Natural Environment Study, June 2016).
- **Animal Species:** The project would not affect any special-status animal species; temporary construction impacts are discussed in Chapter 2 (Natural Environment Study, June 2016).
- **Threatened and Endangered Species:** The project would not affect any threatened or endangered species; temporary construction impacts are discussed in Chapter 2 (Natural Environment Study, June 2016).

2.1 Human Environment

2.1.1 Existing and Future Land Use

Affected Environment

State Route 190 within Death Valley National Park is officially designated as a National Scenic Byway and a State Scenic Highway, which supports Death Valley National Park's and Inyo County's policies of scenic preservation. The Towne Pass Curve Correction project is centrally located in Death Valley National Park, whose general management policies strive to balance resource protection with visitor access and safety.

The Death Valley National Park General Management Plan (2002) specifically identifies an increase in visitation by tourist buses, which currently have to deal with kingpin-to-rear-axle distance advisories on State Route 190 due to horizontal and vertical curves that are not built to current standards.

State Route 190 is functionally classified as an interregional two-lane minor arterial, which provides access from U.S. Highway 395 on the eastern side of the Sierra Nevada Mountains to State Route 127 at Death Valley Junction near the California/Nevada state line.

According to the 2013 State Route 190 Transportation Concept Report prepared by Caltrans District 9, capacity-increasing projects are not being proposed for State Route 190 as they are not warranted at this time and are not anticipated in the future. Safety and operational improvements may be implemented, but would be required to consider any possible scenic or environmental impacts. This proposed project has been programmed into the 2014 State Highway Operation and Protection Program (SHOPP).

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; the policy statement can be found in Appendix C of this document.

Environmental Consequences

The proposed project is consistent with the future system planning for State Route 190.

The current land use pattern around the project is mostly recreation use of Death Valley National Park, administered by the National Park Service. The land is open space and wilderness area; this project will not affect those designations or land use patterns.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are needed.

2.1.2 Parks and Recreational Facilities

Affected Environment

The proposed project sits in a remote desert setting within Death Valley National Park. State Route 190 is the main route serving the park from the west and is the main connection for valley communities and points of tourism interest.

Death Valley National Park is a mostly arid environment, east of the Sierra Nevada mountain range in southern Inyo County and northern San Bernardino County. The park covers about 5,300 square miles, encompassing Saline Valley, a large part of Panamint Valley, almost all of Death Valley, and parts of several mountain ranges.

Death Valley National Park receives more than one million visitors a year. Visitors come from all over the world to enjoy the diverse geologic features, desert wildlife, historic sites, scenery, clear night skies and the seclusion of the extreme desert environment. Visitors also come to the area to enjoy various recreational activities, including hiking, backpacking, backcountry camping, and mountain biking.

Environmental Consequences

The preferred alternative would result in the correction of the horizontal and vertical curves, a slight realignment of the existing facility, the extension replacement of two culverts and the addition of another one. These culverts would be extended to the toe of the new embankment on the west side of the highway.

De minimis impacts on publicly owned parks, recreation areas, and wildlife and waterfowl refuges are defined as those that do not adversely affect the activities, features, and attributes of the 4(f) resource. Death Valley National Park is a Section 4(f) resource. The build alternative proposes the permanent acquisition of additional right-of-way from Death Valley National Park and would also require a temporary construction easement, with eventual permanent acquisition of the right-of-way for the construction of the new embankment on the west side of the highway.

The project proposes a *de minimis* impact to Death Valley National Park because there would be no adverse effects to the activities, features, and attributes of this 4(f) resource. Caltrans requested comments from Death Valley National Park on this preliminary determination (see the correspondence letter in Appendix B).

During the 45-day public circulation and comment period of the draft environmental document, the public will be afforded an opportunity to comment on the *de minimis* impact finding as part of the formal National Environmental Policy Act process. A Public Notice will inform the public of the availability of the draft environmental document and of the opportunity to request a public hearing. All comments will be considered, and the responses will be incorporated into the final environmental document.

Avoidance, Minimization, and/or Mitigation Measures

Any measures to minimize and mitigate the change in the visual character of the proposed project site or its surroundings are discussed in Section 2.1.3 Visual/Aesthetics.

Parks 1 - Through the use of a Traffic Management Plan, State Route 190 will remain open during construction of the proposed project. Any potential disruptions to tourist travel and activity would be kept to a minimum.

2.1.3 Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 USC 4331[b][2]). To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act (23 USC 109[h]) directs that final decisions on 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.

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

Visual Assessment Methodology

Visual resources of the project setting are defined and identified below by assessing *visual character* and *visual quality* in the project corridor. *Resource change* is assessed by evaluating the visual character and the visual quality of the visual resources that compose the project corridor before and after the construction of the proposed project.

Visual character is descriptive and non-evaluative, being based on defined attributes that are neither good nor bad in themselves. A change in the visual character cannot be described as having good or bad attributes until it is compared with the viewer response to that change. Visual character can be distinguished by at least two levels of attributes: pattern elements and pattern character. Visual pattern elements are primary visual attributes of objects: they include form, line, color and texture. The visual contrast between a highway project and its visual environment can frequently be traced to four aspects of pattern character: dominance, scale, diversity, and continuity.

Visual quality is evaluated by identifying the vividness, intactness and unity present in the viewshed. This approach to evaluating visual quality can also help identify specific methods for mitigating specific adverse impacts that may occur as a result of a project. Vividness is the visual power of landscape components as they combine in striking and

distinctive visual patterns. Unity is the visual coherence and compositional harmony of the landscape considered as a whole. Unity frequently attests to the careful design of individual components in the landscape. Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscape, as well as in natural settings.

Viewer response is composed of two elements: viewer sensitivity and viewer exposure. These elements combine to form a method of predicting how the public might react to visual changes brought about by a highway project.

Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' response to change in the visual resources that constitute the view.

Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, type of viewer activity, duration of their view, the speed at which the viewer moves, and the position of the viewer.

Affected Environment

A Visual Impact Assessment was completed for this project on August 1, 2016. The project lies in Death Valley National Park on State Route 190. The setting is rural, and there are no structures or other evidence of human development within the viewshed except for the roadway infrastructure. Segments of the historic Eichbaum Toll Road are not visible or readily identifiable from the roadway. This highway is an officially designated State Scenic Highway. No scenic resources (memorable features of unique or outstanding visual quality and distinctiveness, such as a unique massive rock formation or distinctive group of trees accented in a setting as a focus of attention) have been identified within the project limits.

The visual character within the project limits consists of a winding two-lane roadway with 0- to 2-foot shoulders. Eastbound travelers enter the project area after crossing over Towne Pass. State Route 190 within the project area is located along a drainage valley within the eastern flanks of the Panamint Range. The shrub-covered alluvial slopes are fed by eroding material from steeper, jagged mountain formations at the highest topography toward the east and west.

On the west side of the road are poorly vegetated steep road cuts that transition to moderately vegetated slopes above the existing hinge point where disturbance has not occurred. To the west of the roadway, at the northern end of the project area, is a narrow winding drainage wash that is fed by the steep slopes of the Panamint Range above. Occasionally, views of Death Valley and the distant mountains open up depending on the viewer's location along the roadway and nearby topography. Visible human development is limited to the highway infrastructure (such as signs, delineators, etc.) itself. See Figure 2-1.

Figure 2-1 Existing Conditions Facing South (Eastbound)



The visual quality is moderately affected by a series of existing roadside cut slopes along the east side of the roadway. Since the cut slopes were last excavated, the surrounding native plant community has slowly transmitted seeds onto the disturbed slopes. Regular landslide activity because of the steep nature of the topography has hindered full natural plant regeneration, making the cuts more pronounced.

The existing visual quality within the project limits is very high. Views from State Route 190 consist of a two-lane roadway that crests the Panamint Range at Towne Pass, then descends toward Death Valley or Panamint Valley, depending on the direction of travel. The unity created between the highway and the surrounding landscape is very high. Intactness is moderately high due to the lack of visually intrusive features in the landscape; however, steep, mostly unvegetated road cuts have some impact to the visual character. Vividness is high.

Environmental Consequences

No scenic resources (memorable features of unique or outstanding visual quality and distinctiveness) have been identified within the project area. Therefore, no scenic resources will be impacted.

The most noticeable change will be at the south end of the project limits. The existing roadway will be realigned at a maximum of 55 feet toward the east. An additional 20 to 27 feet of horizontal excavation will provide for adequate site distance for vehicles entering into the curve. This will require removal of native vegetation and a large-scale road cut into the alluvial slope. The final cut slope will be approximately 2:1, compared to existing road cuts that are closer to 1:1. The final slope surface will be unvegetated at least for the first decade or two after construction until native seeds reestablish naturally.

In the middle third of the project, the proposed roadway will shift toward the west into the existing wash. The placement of rock or a gabion wall will minimize impacts to the wash while providing adequate area for the new roadway. The northern third of the project will affect a small portion of the wash and then converge with the existing roadway alignment with little impact to the landscape adjacent to the roadway. See Figure 2-2.

Figure 2-2 Existing Conditions Facing North (Westbound)



Death Valley National Park staff and visitors are regular travelers along this corridor. Park staff and recurring visitors would be most familiar with the roadway and its viewshed, and their viewer response would be moderate to high. This group would likely notice the removal of existing vegetation, all signs of excavation and the new roadway alignment. First time and occasional park visitor response would be moderate. Large-scale road cuts are common throughout Death Valley National Park; therefore, the proposed cut slopes and the scale of the cuts may not seem out of the ordinary. Viewer expectation is most likely based on traveling through an undeveloped environment with minimal signs of human activity.

The visual unity and intactness between the highway and surrounding landscape will be moderately high. Removal of existing vegetation and magnitude of the proposed realignment and cut slope will be quite noticeable to the traveling public, compared to the existing smaller steep cut slopes.

Throughout Death Valley National Park, travelers experience park roads and 4-wheel drive trails of various conditions. Road cuts are common, and the level of vegetation on these cuts range from little to moderate coverage. Death Valley is unique compared to

other regions of California as roadside cut slopes give the traveling public a glimpse into the diverse geology and geography that is common in Death Valley National Park's landscape. One may see several rock formations with different textures, colors and particle sizes in a single road cut. This project proposes flatter cut slopes where possible. This will be most noticeable to travelers as they approach the project area from the either direction. What was a steep road cut will appear to be an extension of the flatter alluvial topography of the upper slopes. Roadway realignment and slope excavation may open up views on the local topography in the middleground and background, providing for opportunities to view the lower slopes of the Panamint Range and the distant Grapevine Mountains.

The change in visual quality would be high. Efforts to contour proposed cut slopes to mimic the natural pattern uphill from the project and restore decommissioned sections of roadway to natural conditions will help address the level of impacts. Viewer response would remain high, and the resulting visual impacts would be low to moderate.

Avoidance, Minimization, and/or Mitigation Measures

With implementation of the following minimization and mitigation measures, the visual impacts of the proposed project can be reduced and would not result in substantial changes in overall visual quality:

Visual 1—All disturbed areas within the project limits not specifically designed as sight distance roadsides or as recoverable surfaces will be graded to appear as natural as possible. Natural-appearing roadside grading will include broad, random undulations, gently rounded transitions between adjacent slope-faces and varied planar surfaces.

Visual 2—Slope rounding of the top of the cut slopes will be implemented where possible.

Visual 3—The current roadway will be decommissioned by obliterating old pavement and removing material, ripping up the old roadbed, placing material excavated from the cut area and contouring the material to look natural, and including features (such as random placement of rock and/or vertical mulch) to encourage natural revegetation where possible.

Visual 4—Existing vegetation in spot locations will be protected when possible by excavating around vegetation when recontouring.

2.1.4 Cultural Resources

Regulatory Setting

The term “cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. The following laws and regulations deal with cultural resources.

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800).

On January 1, 2014, a Section 106 Programmatic Agreement (PA) between the Advisory Council on Historic Preservation, the Federal Highway Administration, State Historic Preservation Officer (SHPO), 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 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration's responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 USC 327).

The Archaeological Resources Protection Act (ARPA) applies when a project may involve archaeological resources located on federal or tribal land. The 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. See Appendix B for specific information about Section 4(f).

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as California Public Resources Code Section 5024.1, which established the California Register of Historical Resources.

Affected Environment

The following document was summarized in the Historic Property Survey Report (September 2016) and serves as the basis for the analysis in this section: *Archaeological Survey Report* (September 2016). Information from the Finding of Effect on historic properties (September 2016) was also used.

The Area of Potential Effects (APE) includes all areas of the project area and a buffer of about 10 feet to allow for potential construction impacts. A larger area was surveyed as part of the analysis. An archaeological/historic resources records search was conducted at the Eastern Information Center at the University of California, Riverside on July 13, 2015 and included a search of all records within 1 mile of the project area. No cultural resources had been previously identified within 1 mile of the project area.

Consultation with the Native American Heritage Commission (NAHC) and Native American tribes and individuals was initiated on April 7, 2015. The Native American Heritage Commission responded on May 8, 2015, indicating it had no knowledge of

specific cultural resources in the project area and providing a contact list. No other responses have been received to date.

An archaeological field survey was conducted on February 22 and 23, 2016. The surface of the archaeological survey area is mostly undeveloped with some steep slopes and an extremely rocky wash. The survey included the entirety of the project area with coverage in 15-meter linear transects.

Phillip Vallejo, Caltrans Architectural Historian, sent letters with a project description and map to the following historic societies and museums on June 10, 2016: Historic Society of the Upper Mojave Desert, Maturango Museum, Searles Valley Historical Society, and Eastern California Museum. No responses have been received to date.

As a result of historic document research and field survey, one cultural resource, remnant segments of the Eichbaum Toll Road, was identified within the Area of Potential Effects and is assumed to be eligible for inclusion in the National Register of Historic Places and is assumed to be a historical resource under the California Environmental Quality Act for the purposes of this project.

The approximately 30-mile-long Eichbaum Toll Road (P-14-5199) from Darwin Wash to Stovepipe Wells was constructed by Herman William (Bob) Eichbaum in 1926. The road provided the first access to Death Valley for recreational purposes. The resource was designated California Historic Landmark No. 848 in 1971, with a plaque located at Stovepipe Wells. The State of California bought the road in 1934 and incorporated it into the state highway system as State Route 127. The road was later redesignated as State Route 190 with subsequent improvements and curve realignments. Much of the toll road appears to have been subsumed by the current alignment of State Route 190; therefore, for the purposes of the current undertaking, the current alignment of State Route 190 within the project area as well as the identified unpaved segments of Eichbaum Toll Road are considered component parts of the historic property.

The period of significance for the Eichbaum Toll Road dates from its construction as an unpaved toll road in 1926 through 1937 when construction of the “Darwin Cut-off” substantially altered the original 1926 alignment of the road. Character-defining features include the following:

- Alignment(s) of the road dating to the period of significance
- Original associated engineering features dating to the period of significance
- Associated ancillary roadside or vehicular camps dating to the period of significance that exhibit research potential

Four discontinuous segments (Segments C through F) of the 1926 unpaved Eichbaum Toll Road within the project Area of Potential Effects were recorded on Department of Parks and Recreation 523 forms during the current survey. Segments C through F are

located about a half-mile north of Towne Pass and 16 miles southwest of Stovepipe Wells.

- **Segment C** runs roughly north-south, contouring the base of the hillside. This segment of dirt road measures 588 feet long and varies in width between 7 and 12 feet.
- **Segment D** runs roughly north-south, contouring the base of the hillside. This segment of dirt road measures 248 feet long and varies in width between 7 and 12 feet.
- **Segment E** runs roughly north-south and passes through Feature 1, an alluvial deposit of boulders and cobbles that has been excavated to provide passage for vehicles. This segment of road measures 135 feet long and varies in width between 7 and 12 feet. Construction of this segment appears to have involved removal of thousands of pounds of boulders and cobbles. The method of removal is unknown. This segment includes a human-made Rock Feature F1 that can be described as a naturally occurring alluvial deposit of boulders and cobbles that have been excavated to either provide passage for vehicles or provide a water diversion feature to protect from erosion due to placement/proximity of the natural wash. It measures approximately 90 feet long, 7 to 12 feet wide and ranges from 2 to 6 feet high.
- **Segment F** runs roughly north-south, contouring the base of the hillside. This segment of dirt road measures 153 feet long and varies in width between 7 and 12 feet.

Archival research and mapping also indicated the possible presence of segments of the Eichbaum Toll Road adjacent to, but outside of, the Towne Pass Material Site. These locations were not field recorded as they lie outside the project limits.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, the Native American Graves Protection and Repatriation Act (NAGPRA), codified at 43 CFR part 10, states that further disturbances and activities shall stop in the area of the discovery and that the federal land managing agency, Death Valley National Park, consult with any known Lineal Descendant and the Indian tribe who are or are likely to be culturally affiliated with the human remains and other cultural items; on whose aboriginal lands the remains and cultural items were discovered; and who are reasonably known to have a cultural relationship to the human remains and other cultural items.

Environmental Consequences

Section 4(f) of the Department of Transportation Act of 1966 states that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” A discussion of Section 4(f) as it relates to the one historic property under the build alternative is provided below. More detailed information can be found in Appendix B, Section 4(f) Evaluation, of this environmental document.

Should Alternative 1 be selected, it will directly affect and obliterate a total 287 linear feet of the Eichbaum Toll Road: 152 feet of Segment D and the entire 135 feet of Segment E. A man-made Rock Feature F1 is included within the length of Segment E and will be directly affected as well. As currently mapped, the Eichbaum Toll Road is approximately 30 miles long, making the impact to approximately less than 0.2% of the overall length; however, the level of preservation of much of the length is currently unknown as discussed above. The damage to these sections of the Eichbaum Toll Road will result in an adverse effect on the Eichbaum Toll Road. Construction of Alternative 1 would also result in realignment of 0.6 mile of State Route 190, which in the project area is assumed to have subsumed the Eichbaum Toll Road. Realignment of 0.6 mile of State Route 190, approximately 2% of the assumed historic alignment of the Eichbaum Toll Road for the purposes of this project, would be considered of a minor scale that would not constitute an adverse effect by itself, but all of the effects from Alternative 1 would result in an adverse effect on the Eichbaum Toll Road.

Consultation with the California State Historic Preservation Officer for this project began on June 23, 2016. Formal consultation regarding a finding of Adverse Effect on the Eichbaum Toll Road with the California State Historic Preservation Officer is ongoing. The Section 106 process is ongoing and further consultation with the State Historic Preservation Officer will be concluded prior to completion of the final environmental document. Should Alternative 1 be selected, a Memorandum of Agreement will be signed that includes measures to mitigate the adverse effects on the Eichbaum Toll Road.

Alternative 1 would result in the use of a Section 4(f) historic property (as discussed above and in the Section 4(f) Evaluation provided in Appendix B)

The No-Build Alternative will result in no effect to any cultural resources, including the Eichbaum Toll Road, and no use of a Section 4(f) historic property.

Avoidance, Minimization, and/or Mitigation Measures

With implementation of the following avoidance, minimization, and mitigation measures, the impacts of the proposed project on cultural resources can be reduced to a less than significant level:

Cultural 1—Environmentally Sensitive Areas will be established to protect and avoid Segments C and F, and the portions of Segment D that are outside the project limits. Environmentally Sensitive Areas will also be established adjacent to the material site

where the Eichbaum Toll Road may be present as mapped by archival research but outside the project area.

Cultural 2—The conceptual mitigation measure for effects to the Eichbaum Toll Road would include development of a historic context for the Eichbaum Toll Road for future use by Death Valley National Park in interpretation and/or recordation and evaluation of the whole Eichbaum Toll Road, however measures will be finalized in a Memorandum of Agreement with the State Historic Preservation Officer.

2.2 Biological Environment

2.2.1 Plant Species

Regulatory Setting

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

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

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

Affected Environment

The plants listed are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the presence of habitat required by the special-status plants occurring onsite. This section provides a detailed discussion of the two rare or threatened plant species that were found or had unconfirmed observations within the Biological Study Area. The Mojave fish-hook cactus was found to be present in the Biological Study Area, and the black milk-vetch may be present in the Biological Study Area.

Black milk-vetch (Astragalus funereus)

Black milk-vetch is a perennial herb in the Fabaceae family. The black milk-vetch has been found in California (Inyo County) and Nevada. Its habitat includes Mojavean desert scrub with sometimes carbonate, gravelly, clay, or rock soils at elevations between 4,198 feet and 6,888 feet. Black milk-vetch is in bloom between March and May, with flowers containing black calyx hairs. Black milk-vetch is a California Native Plant Society 1B.2 plant, meaning it is rare, threatened, or endangered in California or elsewhere and is moderately threatened in California (20-80% of occurrences are threatened) in California. The closest reported occurrence of this species is 6 miles east of the Biological Study Area in the Dunes 7.5” U.S. Geological Survey Topo Quad, at an elevation of 2,500 feet.

The exact location is unknown, and reference populations were not established by National Park Service or project biologists.

The Biological Study Area is within the elevation range of this species, so there is potential for this species to occur. Habitat within the Biological Study Area is marginal however, because the Mojavean desert scrub habitat is highly disturbed. This species was unconfirmed if present in the Biological Study Area during field surveys in 2015 where it was keyed to the genus level (*Astragalus sp.*).

Environmental Consequences

The proposed project has the potential to impact this species if the species is found in the project area. Ground disturbance work and staging areas have the potential to remove or impact black milk-vetch individual plants. With proper avoidance measures, there is no anticipated impact to black milk-vetch.

Mojave fish-hook cactus (Sclerocactus polyancistrus)

Mojave fish-hook cactus is a succulent stem shrub in the Cactacea family. Mojave fish-hook cactus has been found in Inyo, Kern, and San Bernardino counties as well as Nevada. Its habitat includes Great Basin scrub, Joshua tree woodland, and Mojavean desert scrub in usually carbonate soils, at elevations between 2,099 feet and 7,609 feet. Mojave fish-hook cactus blooms between April and July, with rose-purple flowers on cylindrical rib stems with characteristic hooked central spines.

Mojave fish-hook cactus is a California Native Plant Society 4.2 plant, which means it has a limited distribution and is fairly endangered in California. Reference populations were not established by National Park Service or project biologists, but there were at least five observations of Mojave fish-hook cactus during botanical surveys within the Biological Study Area on April 21, 2015 by the project biologist.

Environmental Consequences

The proposed project does have potential to affect this species because the plant has been determined to occur within the Biological Study Area. If the species is documented within the project area, ground disturbance would likely remove or impact Mojave fish-hook cactus individuals. With proper avoidance measures, there is no anticipated impact to Mojave fish-hook cactus from the proposed project.

Avoidance, Minimization, and/or Mitigation Measures

Biology 1—Preconstruction botanical surveys for sensitive species and focused surveys for black milk-vetch (*Astragalus funereus*), California Native Plant Society 1B.2, and Mojave fish-hook cactus (*Sclerocactus polyancistrus*), California Native Plant Society 4.2, will be conducted. If sensitive species are found in preconstruction surveys, these species will be avoided or transplanted.

Biology 2—Death Valley National Park requested avoidance measures be enacted to reduce impacts to Mojave fish-hook cactus (*Sclerocactus polyancistrus*), which is listed on the California Native Plant Society Inventory of Rare and Endangered Plants as a 4.2

plant (limited distribution). Five individuals were located during surveys and will be transplanted in coordination with the National Park Service Biologist prior to construction.

2.3 Construction Impacts

2.3.1 Water Quality and Storm Water Runoff

A Water Quality Evaluation was completed for this project on January 9, 2013. The project sits in Death Valley National Park at an elevation of 4,000 feet. This is an arid region that receives less than 6 inches of rainfall per year. An intermittent drainage exists next to the project area, and several unnamed drainages cross the existing alignment in low-lying areas. These drainages carry storm water flows during major precipitation events.

Caltrans District 9 storm damage records indicate that localized ponding has occurred in the past as rainwater pooled in the shoulder areas of the project site during brief thunderstorms. There has been no flooding or storm damage in the project limits because the water soon infiltrates into the ground or evaporates.

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.

Avoidance, Minimization, and/or Mitigation Measures

Water Quality 1—Contamination of any surface water would be avoided. The contractor's water quality control plan, which is mandated, would explain in detail how contamination would be avoided. No reclaimed water, if used, would be allowed to mingle with surface flows.

Water Quality 2—Best management practices as outlined in the National Pollutant Discharge Elimination System Statewide Storm Water Permit and the Waste Discharge Requirements would be used to reduce water pollutants coming from the Caltrans construction project as much as possible.

Water Quality 3—Construction site pollutants would be controlled by the use of structural devices, such as silt fences and fiber rolls, and non-structural activities such as good housekeeping and construction-related waste management.

Water Quality 4—A Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP), as applicable, would be prepared by the contractor and implemented during construction to the satisfaction of the resident engineer and according to the regulations of the Lahontan Regional Water Quality Control Board. The SWPPP or WPCP would identify sources of sediment and other pollutants that affect the quality of storm water discharges. The plan would also eliminate sediment and other pollutants in storm water as well as non-storm water discharges.

Permits related to Waters of the State are required for the proposed project, and coordination efforts with the Lahontan Regional Water Quality Control Board (LRWQCB) and California Department of Fish and Wildlife have been made. Caltrans will be acquiring a Lahontan Regional Water Quality Control Board 401 and California Department of Fish and Wildlife 1600 agreement.

2.3.2 Hazardous Waste/Materials

An Initial Site Assessment was provided on August 10, 2015. On June 14, 2016, a revised Initial Site Assessment for the project was completed due to project description changes.

The Initial Site Assessment included a review of the Cortese List, a set of data resources identified by the California Environmental Protection Agency. The Cortese List includes the following:

- EnviroStor database, a list of Hazardous Waste and Substances sites maintained by the Department of Toxic Substances Control
- Geotracker database, which includes a list of Leaking Underground Storage Tank sites maintained by the State Water Resources Control Board
- Sites Identified with Waste Constituents above Hazardous Waste Levels outside the Waste Management Unit maintained by the State Water Resources Control Board
- Active Cease and Desist Orders, and Cleanup and Abatement Orders, maintained by the State Water Resources Control Board
- Hazardous waste facilities subject to corrective action, maintained by the Department of Toxic Substances Control

Also, the Solid Waste Information System database maintained by the Department of Resources Recycling and Recovery was reviewed.

There were no facilities identified by any of the above data resources within or adjacent to the project area.

The Initial Site Assessment indicated that yellow and white paint/striping/markings have been found to contain high lead levels. The Initial Site Assessment also indicated that aerially deposited lead (ADL) is likely to occur within surface soils in the project area because aerially deposited lead is a result of the historic use of leaded gasoline and its emissions settling along the highway shoulders. The Initial Site Assessment recommended that a Preliminary Site Investigation, testing for aerially deposited lead, be completed.

No other potential hazardous waste/materials have been identified within the project area.

A Preliminary Site Investigation is planned prior to completion of the final environmental document to determine if elevated lead concentrations exist in surface soils next to State Route 190 to better characterize the soil prior to the removal and disposal of soils by the contractor.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans Standard Special Provisions would be included in the construction contract pertaining to proper handling, disposal, and worker/public safety to minimize hazardous waste impacts.

Haz Waste 1—The appropriate provisions to address aerially deposited lead concentrations will be implemented.

Haz Waste 2—The appropriate provisions to address the removal of traffic striping and pavement markings will be implemented.

2.3.3 Air Quality

The project will not create permanent air quality impacts.

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment also are expected and would include carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs), directly emitted particulate matter (PM₁₀ and PM_{2.5}), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from nitrogen oxides and volatile organic compounds in the presence of sunlight and heat.

Site preparation and roadway construction typically involves clearing, cut-and-fill activities, grading, removing or improving existing roadways, building bridges, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. These activities could temporarily generate enough PM₁₀, PM_{2.5}, and small amounts of carbon monoxide, sulfur dioxide, nitrogen oxides, and volatile organic compounds to be of concern. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site could deposit mud, which could be an added source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Construction activities for large development projects are estimated by the U.S. Environmental Protection Agency (U.S. EPA) to add 1.2 tons of fugitive dust per acre of

soil disturbed per month of activity. If water or other soil stabilizers are used to control dust, the emissions can be reduced by up to 50 percent. Caltrans' Standard Specifications (Section 14-9.03) on dust minimization requirements requires use of water or dust palliative compounds and will reduce potential fugitive dust emissions during construction.

In addition to dust-related PM₁₀ emissions, heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate carbon monoxide, sulfur dioxide, nitrogen oxides, volatile organic compounds and some soot particulate (PM₁₀ and PM_{2.5}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, carbon monoxide and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

SO₂ is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Under California law and Air Resources Board regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel (not more than 15 parts per million sulfur), so sulfur dioxide-related issues due to diesel exhaust will be minimal.

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

Avoidance, Minimization, and/or Mitigation Measures

Most of the construction impacts to air quality are short term in duration and, therefore, will not result in long-term adverse conditions. Implementation of the following measures, some of which may also be required for other purposes such as storm water pollution control, will reduce any air quality impacts resulting from construction activities:

Air Quality 1—The construction contractor must comply with Caltrans' 2015 Standard Specifications in Section 14-9.

Air Quality 2—Standard Specifications Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

Air Quality 3—Section 18 of the 2015 Standard Specifications is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications described in Section 18 of the Standard Specifications will be met.

Air Quality 4—Water or dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a

“no visible dust” criterion either at the point of emissions or at the right-of-way line depending on local regulations.

Air Quality 5—Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.

Air Quality 6—A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts.

Air Quality 7—Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.

Air Quality 8—ESA (Environmentally Sensitive Area)-like areas or their equivalent will be established near sensitive air receptors. Within these areas, construction activities involving the extended idling of diesel equipment or vehicles will be prohibited, to the extent feasible.

Air Quality 9—Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.

Air Quality 10—All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust (particulate matter) during transportation.

Air Quality 11—Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to decrease particulate matter.

Air Quality 12—To the extent feasible, construction traffic will be scheduled and routed to minimize congestion and related air quality impacts caused by idling vehicles during peak travel times.

Air Quality 13—Mulch will be installed or vegetation planted as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may need to use controls such as dampened straw.

Construction Conformity

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

2.3.4 Animal Species

Animals are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status animals occurring onsite. This section provides a detailed discussion of special-status animal species that have the potential to occur within the Biological Study Area.

Avian species such as Brewer's sparrow (*Spizella breweri*), Le Conte's thrasher (*Toxostoma lecontei*), prairie falcon (*Falco mexicanus*), and burrowing owl (*Athene cunicularia*) may have the potential to occur within the Biological Study Area.

Mammalian species with the potential to occur within the Biological Study Area are the desert bighorn sheep (*Ovis canadensis nelsoni*) and Townsend's big-eared bat (*Corynorhinus townsendii*). One reptile species, the rosy boa (*Charina trivirgata*), also has the potential to occur within the project area.

Brewer's sparrow (Spizella breweri)

Brewer's sparrow is a small sparrow distinguished by a notched tail, conical bill, a finely streaked brown crown, and a defined white eye ring. This species migration occurs throughout North America. In California, this species uses the Great Basin region as breeding habitat where sagebrush is the dominant plant community from April to June. Nesting occurs in sagebrush shrub stands that are taller and denser than the surrounding vegetation. The species' winter range can extend to southeastern California where habitat is composed of sagebrush shrublands and desert dominated by saltbrush vegetation and creosote. Brewer's sparrows forage on insects and grains and are adapted to arid environments where water sources can be scarce.

Brewer's sparrow is a U.S. Fish and Wildlife Service Bird of Conservation Concern. The Fish and Wildlife Conservation Act (1988 amendment) states that the U.S. Fish and Wildlife Service must "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973."

Brewer's sparrows were not observed during field surveys in 2015. The Biological Study Area may contain foraging habitat, but the marginal sagebrush scrub does not offer suitable nesting habitat; tall and dense sagebrush shrub cover is not present. There are no occurrences for this species nearby in the California Natural Diversity Database (one occurrence in Mono County), but it is listed as a species of concern for this project by U.S. Fish and Wildlife Service.

The proposed project is not expected to impact the Brewer's sparrow or its habitat.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are needed for this species.

Le Conte's thrasher (Toxostoma lecontei)

Le Conte's thrasher is a large, long-tailed songbird with a distinct down-curved bill. In California, this species is a resident of the southeastern portion of the state's desert habitats. Suitable habitat for Le Conte's thrasher is open desert washes, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Nesting habitat is dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2 to 8 feet above ground. Le Conte's thrashers forage on arthropods and plant seeds.

Le Conte's thrasher is a California Department of Fish and Wildlife Species of Special Concern, which identifies wildlife species at risk within California, and is considered under the California Environmental Quality Act. Le Conte's thrasher is threatened by habitat loss to agriculture land throughout much of its range, particularly the San Joaquin Valley.

Le Conte's thrasher was not observed during field surveys in 2015. The Biological Study Area may contain foraging habitat, but that habitat is unlikely to be suitable for nesting; dense, spiny shrub or densely branched cacti are not present. The closest California Natural Diversity Database occurrence of this species is 25 miles southwest of the Biological Study Area, near China Lake Naval Air Weapons Station in Inyo County.

The proposed project is not expected to impact this species.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are needed for this species.

Prairie falcon (Falco mexicanus)

Prairie falcon is a large, light brown falcon. This species is distinguished by its large, dark eyes, square head, dark ear patch, and white area around the eyes. Dark feathers on the underside of the wing closest to the head, which contrast well against the lighter color of the rest of the underwing, are another distinctive feature. This species is an uncommon permanent resident in California that ranges from southeastern deserts to the northwest throughout the Central Valley and along the inner Coast Ranges and Sierra Nevada. General habitat is dry, open terrain in Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, or valley and foothill grassland plant communities. Breeding sites are located on cliffs, and the bird will forage mostly on small mammals, some small birds, and reptiles in open areas.

Prairie falcon is a U.S. Fish and Wildlife Service Bird of Conservation Concern and a California Department of Fish and Wildlife Watch List species. The Fish and Wildlife Conservation Act (1988 amendment) states that the U.S. Fish and Wildlife Service must "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973." This species is also included in the California Department of Fish and Wildlife Special Animals List, which identifies species with future potential conservation needs. This species is at risk to nestling

predation by other predatory birds and dichlorodiphenyldichloroethylene (DDE) pesticide poisoning.

Prairie falcons were not observed during field surveys in 2015. The Biological Study Area may contain foraging habitat within the open areas of the dry wash. Nesting habitat is not present as rocky cliffs and outcroppings are not present in the Biological Study Area. There was a California Natural Diversity Database occurrence of prairie falcon from April 1977 in which several adult birds were observed 3 miles southwest of the Biological Study Area. Another occurrence 16 miles east of the project area—of an inactive nest—was observed in May 1980.

Construction of the proposed project may reduce foraging habitat, but impacts to nesting habitat is not expected. With implementation of avoidance and minimization measures prior to construction, it is expected that the proposed project will not impact this species.

Avoidance, Minimization, and/or Mitigation Measures

Preconstruction nesting bird surveys will be conducted and avoidance measures will be implemented to construction activities if species are found within or near project area. This measure is listed as Biology 3, below.

Burrowing owl (*Athene cunicularia*)

Burrowing owl is a small species of ground-nesting owl with a distinct oval facial ruff with a broad buffy-white eyebrow-to-malar stripe on the interior. This species is a yearlong resident of open dry grassland and desert habitat in California containing grasses, forbs, pinyon-juniper, or ponderosa pine-dominant plant species. Breeding occurs from March to August, and this species uses the burrows of ground squirrels or other small mammals for nesting in semi-colonial groups. Young will fledge and fly from the burrow within 4 weeks. Burrowing owl forages on mostly insects and also small mammals, reptiles, birds, and carrion.

Burrowing owl is a California Department of Fish and Wildlife Species of Special Concern, which identifies wildlife species at risk within California, and is considered under the California Environmental Quality Act. Burrowing owls have declined due to habitat conversion to agriculture and poisoning of ground squirrels.

Burrowing owl individuals or sign (scat, tracks, prey remains, burrows, nests, etc.) were not observed during field surveys in 2015. The Biological Study Area may contain marginal burrow or foraging habitat in the open desert Mojavean scrubland as some small mammal burrows are present. The closest California Natural Diversity Database occurrence was recorded in 1891, 28 miles southeast of the Biological Study Area in the Badwater U.S. Geological Survey 7.5-minute Topo Quad; this location was called “Bennett Wells.”

Construction of the proposed project may reduce burrow and foraging habitat if burrowing owls are found to be present within the Biological Study Area. The National Park Service Biologist had concerns about burrowing owl being present in the Biological Study Area and advised the Caltrans project biologist to ensure that burrowing owls are

not present prior to any construction work as existing burrows could be impacted. With implementation of avoidance and minimization measures prior to construction, it is expected that the proposed project will not impact this species.

Avoidance, Minimization, and/or Mitigation Measures

Biology 3—Preconstruction nesting bird surveys will be conducted and avoidance measures will be implemented to construction activities if species are found within or near project area.

Desert bighorn sheep (Ovis canadensis nelsoni)

Desert bighorn sheep is a subspecies of bighorn sheep that occupy dry desert mountains from the White Mountains in Mono County to the Chocolate Mountains in Imperial County, California. Bighorn sheep are characterized by an ever-growing horn that both males and females have. Desert bighorn sheep group in herds of no more than 20 individuals, and mating (rutting) generally occurs between August and September. Female sheep (ewes) reproduce one lamb per year on average, between February and March. Desert bighorn sheep occupy open rocky steep areas with vegetation for foraging and a nearby water source, such as springs. Vegetation habitat types that desert bighorn sheep occupy include alpine, alpine dwarf scrub, chaparral, chenopod scrub, Great Basin scrub, Mojavean desert scrub, montane dwarf scrub, pinyon and juniper woodlands, riparian woodland, and Sonoran desert scrub.

Desert bighorn sheep is a California Department of Fish and Wildlife Fully Protected species, which identifies and provides additional protection to those animals that are rare or face possible extinction. Desert bighorn sheep have declined due to water source and forage competition with wild horses and burros, and disease from domestic livestock.

No desert bighorn sheep individual or sign was observed during field surveys in 2015. The Biological Study Area may contain marginal foraging habitat in open Mojavean scrub habitat, but water sources are not consistently present within the Biological Study Area to support this species. California Natural Diversity Database mapping and occurrence records of desert bighorn sheep from 1986 indicate the extent of the range is within less than 100 feet of the Biological Study Area. After contacting the National Park Service Biologist, it was determined that the area of Towne Pass is not a critical habitat area for desert bighorn sheep.

The proposed project may reduce marginal foraging habitat, but impacts to breeding or migration habitat are not expected.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are needed for this species.

Townsend's big-eared bat (Corynorhinus townsendii)

Townsend's big-eared bat is a species found throughout California year-round. It is identified by its characteristic large ears, which measure more than a third of its body length. Distribution of this species is not well known, but the species is found in most

habitat types in any season. This species, like most bat species, is generally found in moist habitats with high availability of cover. Townsend's big-eared bats roost in caves, mines, tunnels, buildings, and other man-made structures (such as culverts and bridges). This species forages on moths, beetles, and other soft-bodied insects through its ability to echolocate (locate prey through sound waves).

Townsend's big-eared bats are active at night and roost during daylight hours in colonies with densities of one bat per 310 acres, 10 to 12 miles apart. Mating occurs between November and February, with births occurring between May and June. Young are weaned and fly within 3 weeks of birth, and females return to the birth site after their first year with return rates of 70 to 80 percent.

Townsend's big-eared bat is a California Department of Fish and Wildlife Candidate Threatened species. A state Candidate species is one that the Fish and Game Commission has formally declared a candidate species under the California Endangered Species Act. There is limited information on this species to warrant a threatened status in California, but the species still is imperiled enough to warrant candidacy. This species has declined greatly in California, potentially due to roost site abandonment due to sensitivity to disturbance.

No Townsend's big-eared bat individual or sign was observed during field surveys in 2015. The Biological Study Area may contain roosting sites within the drainage culverts under the road, but the habitat is not moist because it has no consistent water source. Existing culverts in the project area were examined for sign of Townsend's big-eared bat (and any bat species), and no sign or individual was observed. The closest California Natural Diversity Database occurrence of this species was found on March 8, 1992, 4.5 miles north-northeast of the Biological Study Area in the Emigrant Springs area. Another California Natural Diversity Database occurrence from March 6, 1993 found individuals roosting in closed mines in the Skidoo area, 6 miles north-northeast of the Biological Study Area.

The proposed project may impact roosting habitat with the planned removal of two existing drainage culverts in the project impact area, if Townsend's big-eared bat is found within the Biological Study Area. This species is highly sensitive to disturbance and will abandon roost sites from a single disturbance event. With implementation of avoidance and minimization measures prior to construction, it is expected that the proposed project will not impact this species.

Avoidance, Minimization, and/or Mitigation Measures

Biology 4—Preconstruction bat roost surveys will be conducted and avoidance measures will be implemented prior to construction if species is found within or near project area. If the species is found within drainage culvert structures, exclusionary work can be conducted to safely allow roosting bats to exit structures and prevent reentrance prior to completion of construction and permit their return once new structures have been completed. Coordination with the National Park Service Biologist will be implemented in the event this species is found within the project area during preconstruction surveys.

Rosy boa (Charina trivirgata)

Rosy boa is a smaller species of boa snake that inhabits Southern California. It is identified by its heavy body, smooth shiny scales, and three longitudinal stripes along its body that vary in color from brown to red, depending on location in its range. Rosy boas prefer moderate to dense vegetation and rocky cover in chaparral, Mojavean desert scrub, and Sonoran desert scrub vegetation habitats. Rosy boas can also survive in low-moisture environments where water sources are absent. This species will often occupy vacant small mammal burrows to escape the peak high temperatures of Southern California. Rosy boa preys on vertebrate species, such as young desert woodrats (*Neotoma lepida*), that can be found using its infrared-sensing pores. Rosy boas will bear up to 14 offspring, which are born between October and November.

Rosy boa is a U.S. Forest Service Sensitive Species, which is defined by the U.S. Forest Service as “those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by (1) significant current or predicted downward trends in population numbers or density, or (2) significant current or predicted downward trends in habitat capability that would reduce a species’ existing distribution.”

No rosy boas were observed during field surveys in 2015. The Biological Study Area may contain abundant prey sources due to presence of small mammals such as the woodrat species, as evidenced by their burrows. The Biological Study Area may have marginal Mojavean desert scrub habitat, but dense vegetation cover is not present. The closest California Natural Diversity Database occurrence of the rosy boa was made on July 13, 2000, 2.5 miles north of the Biological Study Area along the roadside of State Route 190.

The proposed project is not expected to impact rosy boa within the project area, but it may impact the species if the boa is found to be within the Biological Study Area. It is unlikely and not expected that this species will be found within the Biological Study Area due to the marginal Mojavean desert scrub habitat. If necessary, avoidance and minimization measures would be implemented prior to construction to ensure the proposed project does not impact rosy boa.

Avoidance, Minimization, and/or Mitigation Measures

Biology 5—If prior to or during construction this species is observed within the project area, avoidance measures will be implemented to reduce impacts to this species. Coordination with the National Park Service Biologist will also be implemented.

2.3.5 Invasive Species

A Natural Environment Study-Minimal Impacts was completed for this project in June 2016.

Alternative 1 will produce approximately 24,000 cubic yards of fill material and require approximately 12,000 cubic yards for embankment construction on the west side of the proposed alignment. Alternative 1 would require the export of approximately 12,000

cubic yards of excess fill material from the project location. No import of fill from outside Death Valley National Park is anticipated.

Invasive species are known to exist within Death Valley National Park. Fill soils will be collected from within the project, minimizing the potential to spread invasive species.

Avoidance, Minimization, and/or Mitigation Measures

Biology 6—In compliance with the Executive Order on Invasive Species, Executive Order 13112 and guidance from the Federal Highway Administration, the landscaping and erosion control included in the project will not use species listed as invasive.

Biology 7—In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

Biology 8—All equipment and materials will be inspected for the presence of invasive seeds, and equipment will need to be cleaned prior to entering Death Valley National Park to avoid the introduction of invasive plants and will stay in the park until the completion of the project or will be otherwise inspected prior to reentering Death Valley National Park.

Biology 9—Caltrans and the contractor will adhere to standard Best Management Practices to prevent the introduction and spread of invasive species, improve the success of re-vegetation associated with regulatory requirements, and reduce the need for long-term use of herbicides. Topsoil, duff, and a native seed erosion control application will be required for the new roadway side slopes to minimize erosion and encourage revegetation of the disturbed soil areas.

2.4 Climate Change under the California Environmental Quality Act

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are mostly concerned with the emissions of greenhouse gases generated by human activity including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of greenhouse gas emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the greatest source of greenhouse gas-emitting sources. The dominant greenhouse gas emitted is carbon dioxide, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing greenhouse gas emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)¹.

There are four main strategies for reducing greenhouse gas emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower greenhouse gas-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.²

Regulatory Setting

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

¹ http://climatechange.transportation.org/ghg_mitigation/

² http://www.fhwa.dot.gov/environment/climate_change/mitigation/

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (June 1, 2005): The goal of this order is to reduce California's greenhouse gas emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that the Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

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

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Federal

Although climate change and greenhouse gas reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing greenhouse gas emissions reductions and climate change at the project level. Neither the U.S. Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis.³ The Federal Highway Administration supports the approach that climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by the Federal Highway Administration to lessen climate change impacts correlate with efforts that the State is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the “National Clean Car Program” and Executive Order 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

U.S. EPA’s authority to regulate greenhouse gas emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The court ruled that greenhouse gases meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the court’s ruling, the U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court’s interpretation of the existing act and EPA’s assessment of the scientific evidence that form the basis for EPA’s regulatory actions. The U.S. EPA in conjunction with the

³ To date, no national standards have been established regarding mobile source greenhouse gases, nor has U.S. EPA established any ambient standards, criteria or thresholds for greenhouse gases resulting from mobile sources.

National Highway Traffic Safety Administration (NHTSA) issued the first of a series of greenhouse gas emission standards for new cars and light-duty vehicles in April 2010.⁴

The U.S. EPA and the National Highway Traffic Safety Administration are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced greenhouse gas emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever greenhouse gas regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle greenhouse gas regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012 to 2016).

On August 28, 2012, the U.S. EPA and National Highway Traffic Safety Administration issued a joint Final Rulemaking to extend the national program for fuel economy standards to model-year 2017 through 2025 passenger vehicles. Over the lifetime of the model-year 2017-2025 standards, this program is projected to save approximately four billion barrels of oil and two billion metric tons of greenhouse gas emissions.

The complementary U.S. EPA and National Highway Traffic Safety Administration standards that make up the Heavy-Duty National Program apply to combination tractors (semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel-efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce carbon dioxide emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model-year 2014 to 2018 heavy-duty vehicles.

Project Analysis

An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of greenhouse gas.⁵ In assessing cumulative impacts, it must be determined if a project's

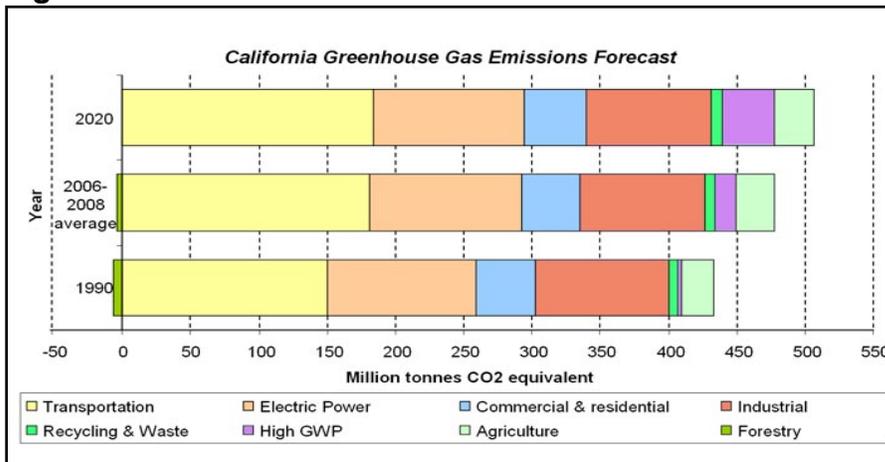
⁴ <http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq>

⁵ This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District

incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce greenhouse gas emissions. As part of its supporting documentation for the Draft Scoping Plan, the Air Resources Board released the greenhouse gas inventory for California (forecast last updated: October 28, 2010). See Figure 2-3. The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the scoping plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the greenhouse gas inventory for 2006, 2007, and 2008.

Figure 2-3 California Greenhouse Gas Forecast



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

Caltrans and its parent agency, the State Transportation 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, Caltrans has created and is implementing the *Climate Action Program at Caltrans* that was published in December 2006.⁶

The purpose of the proposed project is to improve safety on this segment of State Route 190 in Death Valley National Park. The safety improvements are expected to lower the

(Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

⁶ Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

occurrence of potential accidents within the project area, which may also reduce incidence of stop-and-go traffic allowing uninterrupted traffic flow and may reduce greenhouse gas emissions. The proposed project will not add vehicle capacity and is not expected to result in increased operational emissions. In addition, the realignment proposed for this project would correct the curvature and sight distance problems between the project post mile limits. The super-elevation and its relationship to the roadway curves would provide a safe and comfortable ride that is consistent with the design speed of 55 miles per hour in this segment of State Route 190. Because the project would provide new pavement surfaces and ensure the smoothest ride possible for motorists, a reduction in greenhouse gases may occur as a result of the lessening of rolling resistance and the resulting improvement in traveling vehicles' fuel economy.

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.

Caltrans is currently working with Death Valley National Park to secure a Special Use Permit for stockpiling excess fill material at the Towne Pass Material Site, near the project area, resulting in a significant reduction in emissions caused by hauling excess material out of Death Valley National Park or to a farther-removed stockpile location. Use of the Towne Pass Material Site for excess material would result in reducing approximately 600 truck trips traveling 125 miles each way to Pahrump to traveling approximately 2 miles each way, a savings of approximately 253.42 tons of carbon dioxide equivalent greenhouse gas emissions.

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.

CEQA Conclusion

While the project would result in a slight increase in greenhouse gas emissions during construction, Caltrans expects that there would be no operational increase in greenhouse gas emissions associated with this proposed project. However, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination on the project's direct impact and its contribution on the cumulative scale to climate change. Nonetheless, Caltrans is taking further measures to help reduce energy consumption and greenhouse gas emissions. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Figure 2-4 Mobility Pyramid



Caltrans continues to be involved on the Governor's Climate Action Team as the Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in greenhouse gas emissions, while accommodating growth in population and the economy. The Strategic Growth Plan

relies on a complete systems approach to attain carbon dioxide reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements, as shown in Figure 2-4 Mobility Pyramid.

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. EPA and Air Resources Board.

Caltrans is also working toward enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), SB 391 (Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. The plan defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system. The purpose of the California Transportation Plan is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private

sector, and other transportation stakeholders. Through this policy framework, the California Transportation Plan 2040 will identify the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the State's transportation needs.

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

Caltrans Activities to Address Climate Change (April 2013)⁷ provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measures will also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project.

Project-specific Greenhouse Gas Reduction Measures

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

1. Landscaping through revegetation of cut slopes (see Avoidance, Minimization, and/or Mitigation Measures in section 2.1.3)—reduces surface warming and, through photosynthesis, decreases carbon dioxide.
2. Idling restrictions—for trucks and equipment (see Avoidance, Minimization, and/or Mitigation Measures in Section 2.3.3).
3. According to Caltrans' Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) rules, ordinances, and regulations for air quality restrictions (see Avoidance, Minimization, and/or Mitigation Measures in section 2.3.3).

Adaptation Strategies

“Adaptation strategies” refer to how Caltrans and others can plan for the effects of climate change on the State's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be

⁷ http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml

economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011⁸, outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

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

On November 14, 2008, then-Governor Arnold Schwarzenegger signed Executive Order S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This order set in motion several agencies and actions to address the concern of sea level rise. In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency), was directed to coordinate with local, regional, State and federal public and private entities to develop California Climate Adaptation Strategy (December 2009),⁹ which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and outlines solutions that can be implemented within and across State agencies to promote resiliency.

The strategy outline is in direct response to Executive Order S-13-08 that specifically asked the Resources Agency to identify how State agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing (now called the State Transportation Agency); Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the State's adaptation strategy will be updated to reflect current findings.

⁸ <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>

⁹ California Energy Commission. Website: <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report¹⁰ to recommend how California should plan for future sea level rise. The report was released in June 2012 and included the following:

- Relative sea level rise projections for California, Oregon, and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates
- Range of uncertainty in selected sea level rise projections
- Synthesis of existing information on projected sea level rise impacts to State infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems
- Discussion of future research needs regarding sea level rise

In 2010, interim guidance was released by the Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the State's infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academy's Study.

All State agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge, and storm wave data.

All projects that have filed a Notice of Preparation as of the date of Executive Order S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project is outside the Coastal Zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

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

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative

¹⁰ National Academics Press. 2012. *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*. 2012. Website: http://www.nap.edu/catalog.php?record_id=13389.

sea level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding, the increased frequency and intensity of storms and wildfires, rising temperatures, and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to Executive Order S-13-08, and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

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

Death Valley National Park

December 15, 2014: Caltrans met with Death Valley National Park staff to review the project area and discuss the proposed design features and issues.

December 15, 2014: Drew Kaiser, National Park Service Acting Botanist, contacted Jenny Richardson, Caltrans Biologist; sent list of sensitive plant species. Mr. Kaiser also offered assistance with botanical surveys.

April 7, 2015: Caltrans notified Death Valley National Park Archaeologist Wanda Raschkow of the project via letter.

April 27, 2015: Jenny Richardson, Caltrans Biologist, contacted Kirsten Lund, Death Valley National Park Biological Science Technician; emailed an update about Mojave fish-hook cactus (*Sclerocactus polyancistrus*) mapping data. Death Valley National Park Archaeologist Wanda Raschkow sent reports with information pertinent to the Eichbaum Toll Road.

May 26, 2015: Jenny Richardson, Caltrans Biologist, contacted Kirsten Lund, Death Valley National Park Biological Science Technician; potential impacts to Mojave fish-hook cactus in project area could be avoided or mitigated by transplanting.

June 1, 2015: Caltrans staff submitted a request for an Archaeological Resources Protection Act (ARPA) permit to conduct the archaeological survey to Death Valley National Park Archaeologist Wanda Raschkow.

January 13, 2016: The Archaeological Resources Protection Act permit to conduct the archaeological survey was approved and transmitted to Caltrans staff.

February 23, 2016: Caltrans archaeological and historic architecture staff Stacey Zolnoski, Phil Vallejo, John Whitehouse, and Trevor Pratt met with Death Valley National Park Archaeologist Wanda Raschkow at the project area to discuss archaeological survey results.

March 2, 2016: Caltrans staff from project management, design, and environmental planning met with the Death Valley National Park staff for a visit to the project site.

April 13, 2016: Caltrans Project Manager Cedrik Zemitis sent an electronic draft of a Memorandum of Agreement (MOA) to Death Valley National Park staff Josh Hoines regarding cooperating agency status and roles and responsibilities between Death Valley National Park and Caltrans for this project.

April 14, 2016: Caltrans and Death Valley National Park staff discussed this project development at the bi-annual Caltrans-Death Valley National Park meeting. Death Valley National Park staff Josh Hoines emailed Caltrans Project Manager Cedrik Zemitis an acknowledging receipt of the draft Memorandum of Agreement and stating he would circulate the document internally and solicit feedback and comments.

April 20, 2016-Current: Caltrans is discussing with Death Valley National Park staff the use of the Towne Pass Material Site as a staging and stockpile location for this project. Death Valley National Park staff was receptive and encouraged its use to avoid excessive haul costs and the importation of invasive weeds.

May 26, 2016: Katie Rodriguez, Caltrans Biologist, contacted Linda Manning, Death Valley National Park Wildlife Biologist; discussed potential impacts to wildlife species and potential avoidance measures to reduce impacts to wildlife species in project impact area before construction activities.

June 15, 2016: Conference call with Caltrans cultural staff, Stacey Zolnoski and Phillip Vallejo, and Death Valley National Park Archaeologist Wanda Raschko regarding the effects of the project on the Eichbaum Toll Road.

June 17, 2016: Caltrans Project Manager Cedrik Zimitis received a draft Memorandum of Agreement with Death Valley National Park edits and comments.

June 30, 2016: Caltrans staff sent a letter to Death Valley National Park Superintendent Mike Reynolds seeking comments on a proposed *de minimis* finding for the use of National Park lands under Section 4(f) (see Attachment A of Appendix B). A response was requested by July 22, 2016. The letter was delivered on July 5, 2016. A response was received on August 22, 2016.

August 11, 2016: Caltrans transmitted a digital administrative draft of this document to Death Valley National Park staff for early review and comments.

August 12, 2016: Stacey Zolnoski, Caltrans Archaeologist, transmitted digital draft cultural resource technical studies to Death Valley National Park archaeological staff for review and comments. Caltrans Acting Project Manager Dennee Alcala transmitted a draft Memorandum of Agreement incorporating Death Valley National Park edits and comments to Death Valley National Park staff Josh Hoines and Amanda Updegraff.

August 18, 2016: Caltrans Acting Project Manager Dennee Alcala transmitted an electronic draft Memorandum of Agreement to Death Valley National Park Environmental Compliance Manager Jonathan Penman-Brotzman.

August 22, 2016: Caltrans received a letter from Death Valley National Park Superintendent Mike Reynolds dated August 17, 2016 acknowledging receipt of the June 30, 2016 letter from Caltrans (see Attachment A of Appendix B). The letter requested additional clarification on the rationale of a *de minimis* finding to Death Valley National Park as a public park under Section 4(f) in light of the impacts to the Eichbaum Toll Road as a historic site under Section 4(f).

August 31, 2016: Caltrans Environmental Planner Trevor Pratt contacted Death Valley National Park Environmental Compliance Program Manager Jonathan Penman-Brotzman regarding comments on *de minimis* impacts under Section 4(f) upon Death Valley National Park as a public park.

September 1, 2016: Caltrans Environmental Planner Trevor Pratt spoke to Amanda Landan regarding Death Valley National Park's comments on *de minimis* impacts under Section 4(f) per Death Valley National Park's August 17, 2016 letter.

September 7, 2016: Caltrans Environmental Office Chief Angela Calloway sent a letter responding to Death Valley National Park's August 17, 2016 comment letter (see Attachment A of Appendix B).

September 15, 2016: Caltrans Environmental Planner Trevor Pratt spoke to Jonathon Penman-Brotzman regarding Death Valley National Park's August 17, 2016 letter.

Native American Tribes and Individuals

Consultation with the Native American Heritage Commission (NAHC) was initiated on April 7, 2015 including a request for a search of the Sacred Lands File and a contact list of potentially interested Native American representatives. The NAHC responded on May 8, 2015 indicating that the sacred land files failed to indicate the presence of Native American cultural resources in the project area. The NAHC provided a contact list of Native American groups and individuals who may have knowledge of Native American cultural resources not formally listed in any database.

Formal consultation under the Assembly Bill 52 (AB 52) amendments to the California Environmental Quality Act and Section 106 of the NHPA was initiated with Kathy Bancroft, Tribal Historic Preservation Officer, and Mary Wuester, the Tribal Chairperson, of the Lone Pine Paiute Shoshone Tribe and Barbara Durham, Tribal Historic Preservation Officer, and George Gholson, Tribal Chairperson, of the Timbisha Shoshone Tribe by letter on April 7, 2015. A request for formal consultation with the 29 Palms Band of Mission Indians under AB 52 was received after the initiation of consultation with other tribes for this project and were not listed on the Native American Heritage Commission contact list. Formal consultation was initiated with the 29 Palms Band of Mission Indians on July 15, 2016. No responses have been received to date.

State Historic Preservation Officer

June 23, 2016: Phillip Vallejo and Kelly Hobbs, Caltrans Architectural Historians, initiated Section 106 of the NHPA consultation with the State Historic Preservation Officer by meeting with Natalie Lindquist and Lucinda Woodward, Staff Historians representing the State Historic Preservation Officer to discuss potential effects of the project on historic properties.

Historical Societies

June 10, 2016: Phillip Vallejo, Caltrans Architectural Historian, sent letters with a project description and map to the following historic societies and museums: Historic Society of the Upper Mojave Desert, Maturango Museum, Searles Valley Historical Society, and the Eastern California Museum. No responses have been received to date.

Chapter 4 List of Preparers

The following Caltrans staff and consultants contributed to the preparation of this Initial Study/Environmental Assessment:

Dennee Alcala, Acting Project Manager. B.A., Recreation and Leisure Studies, California State University, Long Beach; 8 years of experience in project management and transportation planning. Contribution: Environmental document oversight.

Angela Calloway, Senior Environmental Planner. M.A., Anthropology, California State University, Sacramento; B.S., Anthropology, Indiana State University; 15 years of experience in California and Great Basin archaeology and environmental document preparation. Contribution: Environmental document oversight.

Mark Heckman, Associate Environmental Planner (Planner). M.S., Biology, California State University, Fullerton; Certificate in Project Management, California State University, Sacramento; 20 years experience in environmental analysis. Contribution: Environmental document preparation and circulation, Cumulative Impacts Study.

Kirsten Helton, Supervising Environmental Planner. B.A., Economics, California State University, Fresno; over 20 years of experience in environmental analysis. Contribution: Environmental document oversight.

Jim Hibbert, District Landscape Architect. B.L.A., Landscape Architecture, University of Oregon; 16 years of experience in visual impacts analysis and landscape architecture. Contribution: Visual Impacts Analysis Study.

Trevor Pratt, Associate Environmental Planner (Archeology). B.A., Anthropology, University of California, Los Angeles; 8 years of experience in California and Great Basin archaeology. Contribution: Environmental document preparation and circulation, Greenhouse Gas Emissions Analysis, and Section 4(f) analysis.

Jennifer Richardson, Associate Environmental Planner (Natural Sciences). B.S., Biological Sciences, California State University, Humboldt. 10 years of experience in conducting wildlife surveys. Contribution: Natural Environment Study.

Lora Rischer, Associate Right of Way Agent. B.S., Sports Medicine, California State University, Sacramento; 17 years of experience in right-of-way. Contribution: Right of Way Data Sheet.

Katie Rodriguez, Project Biologist. M.S., Biology, San Jose State University; 6 years of experience in conducting wildlife surveys. Contribution: Natural Environment Study.

- Jane Sellers, Research Writer/Editor. B.A., Journalism—News-Editorial Sequence, California State University, Fresno; more than 20 years of writing/editing, media, corporate communications, Request for Proposal, and public relations experience. Contribution: technical edit of the Initial Study/Environmental Assessment.
- Lea Spann, Associate Environmental Planner. B.A., Environmental Studies, University of California, Santa Barbara; 15 years of hazardous waste/material experience and 7 years of environmental planning experience. Contribution: Hazardous Waste Compliance.
- Richard Stewart, Engineering Geologist. B.S., Geology, California State University, Fresno; 28 years of hazardous waste and water quality experience; 13 years of paleontology/geology experience. Contribution: Paleontology Memorandum.
- Lianne Talbot, Transportation Engineer. B.S., Civil Engineering, California State University, Chico; 12 years of experience in civil engineering and 9 years of experience in traffic operations. Contribution: Traffic and Accident Analysis.
- Philip Vallejo, Associate Environmental Planner (Architectural History). B.A., History, California State University, Fresno; 13 years of experience in architectural history. Professionally Qualified Staff-Principal Architectural Historian. Contribution: Cultural Resources Studies.
- John Whitehouse, Associate Environmental Planner (Archeology). M.A., Archaeology and Heritage, University of Leicester; 20 years of experience in architectural history; more than 28 years of experience in California archaeology. Professionally Qualified Staff-Principal Investigator, Prehistoric Archaeology and Principal Architectural Historian. Contribution: Cultural Resource Compliance document review.
- Cedrik Zemitis, Former Project Manager. M.A., History, California State University, Sacramento; B.A., Exercise Physiology, University of California, Davis; 18 years of finance, budgeting, and administration/management experience. Contribution: Project management.
- Stacey Zolnoski, Associate Environmental Planner (Archeology). M.A., Cultural Resource Management, Sonoma State University; 8 years of experience in California and Great Basin archaeology. Professionally Qualified Staff-Principal Investigator, Prehistoric Archaeology. Contribution: Cultural Resource Compliance documents.
- Adam Zumstein, Transportation Engineer. B.S., Environmental Engineering, North Carolina State University; 10 years of experience in civil engineering. Contribution: Design.

Appendix A. CEQA Checklist

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

09-INY-190	69.2/69.8	09-35320
Dist.-Co.-Rte.	P.M/P.M.	E.A.

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

Potentially Significant Impact Less than Significant with Mitigation Less than Significant Impact Less than Significant Impact No Impact No Impact

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

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

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

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

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

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

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

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

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Appendix A • CEQA Checklist

	Potentially significant impact	Less than significant with mitigation	Less than significant	No Impact
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IV. BIOLOGICAL RESOURCES: Would the project:

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

V. CULTURAL RESOURCES: Would the project:

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

Appendix A • CEQA Checklist

	Potentially significant impact	Less than significant with mitigation	Less than significant	No impact
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>
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"/>
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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Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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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?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

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

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?
- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Appendix A • CEQA Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 checked="" type="checkbox"/>	<input type="checkbox"/>
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"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Appendix A • CEQA Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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"/>
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"/>
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"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix A • CEQA Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>
) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. PUBLIC SERVICES:

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

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix A • CEQA Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix A • CEQA Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

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

Appendix B. Section 4(f) Evaluation

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to realign approximately 0.6 mile of State Route 190 from post mile 69.2 to post mile 69.8 to the east of the current alignment. The current six curves will be reduced to three. This realignment will cover approximately 6 acres and improve the horizontal and vertical curves to meet a minimum design speed of 55 miles per hour, increase the stopping sight distance to 600 feet, and construct paved shoulders throughout the project area. Also, the project will flatten or stabilize side slopes and create a catchment adjacent to the roadway, thus reducing the potential for rockfall. Figures B1-1 and B1-2 in this appendix show maps of the project area.

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 USC 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) at 49 USC 303(c) specifies that:

[T]he Secretary [of Transportation] may approve a transportation program or project [. . .] requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

Any build alternative developed for this project, with the exception of making improvements to the existing pavement, would result in a Section 4(f) use of the Death Valley National Park, because the land is publicly owned land of a public park of national significance. Use of Death Valley National Park is considered to be *de minimis* under Section 4(f), as discussed in Section 1.9 and Attachment A of this appendix.

Also, the Eichbaum Toll Road (Toll Road) (P-14-5199) and its associated features (such as Rock Feature F1, discussed below) has been assumed to be eligible for the National Register of Historic Places for the purposes of this project only, and is therefore considered a resource under Section 4(f). The Toll Road, which spanned approximately 30 miles from Darwin Wash to Stovepipe Wells, was constructed by Herman William (Bob) Eichbaum in 1926. Four discontinuous segments of the Toll Road (segments C, D, E, and F) were recorded in analyzing this project. Segment E also contains Rock Feature F1 (Feature F1), which consists of a naturally occurring alluvial flow of boulders and cobbles that were excavated to provide passage for vehicles.

Because any of the build alternatives considered for this project, described in Chapter 1 of the Environmental Assessment, would result in the use of Section 4(f) properties, this report evaluates additional options with the intent of identifying feasible and prudent alternatives to the project that could avoid Section 4(f) properties entirely or avoid substantial elements of Section 4(f) properties, thereby minimizing harm.

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out Caltrans under its assumption of responsibility pursuant to 23 USC 327.

Figure B1-1: Project Location

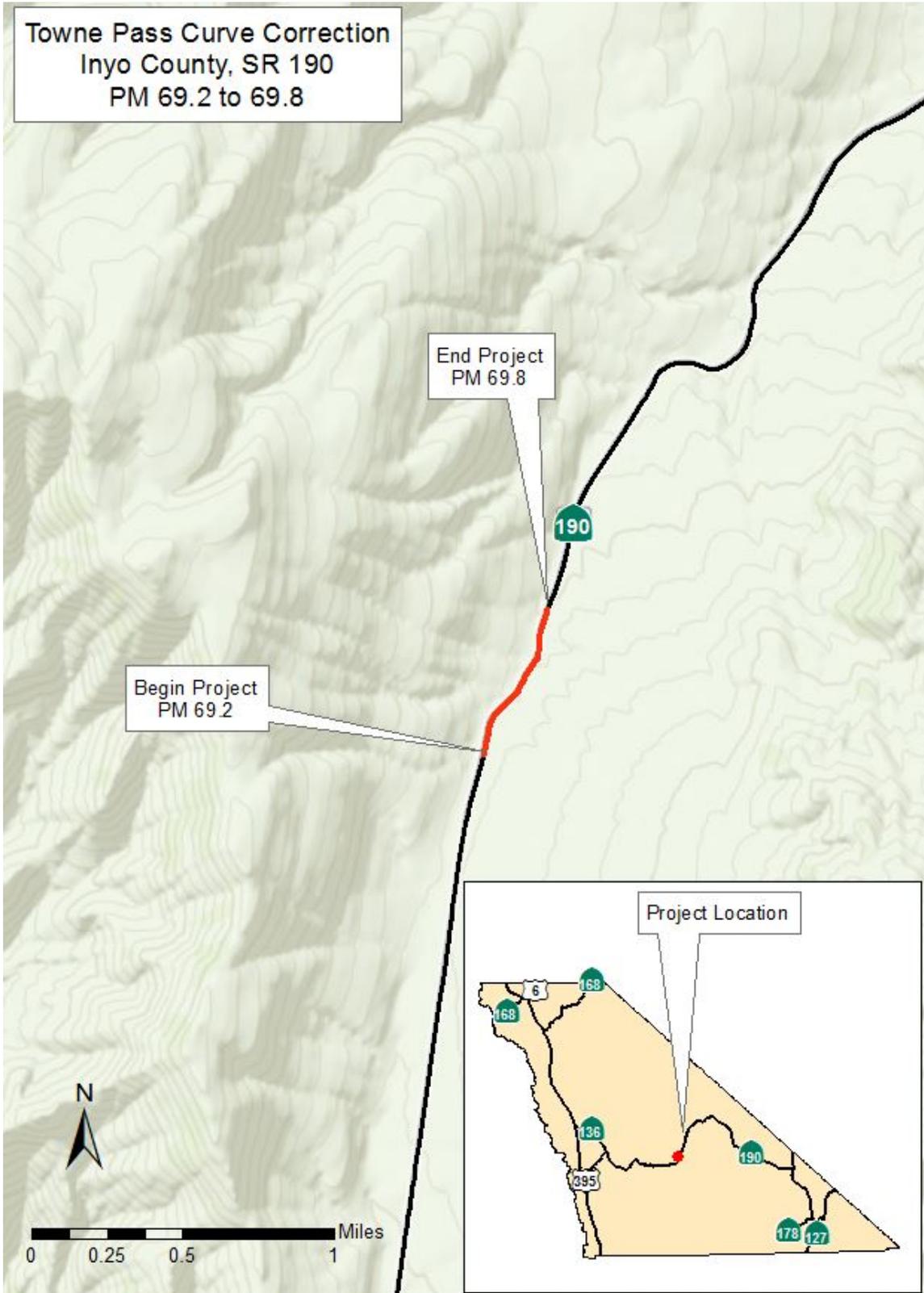
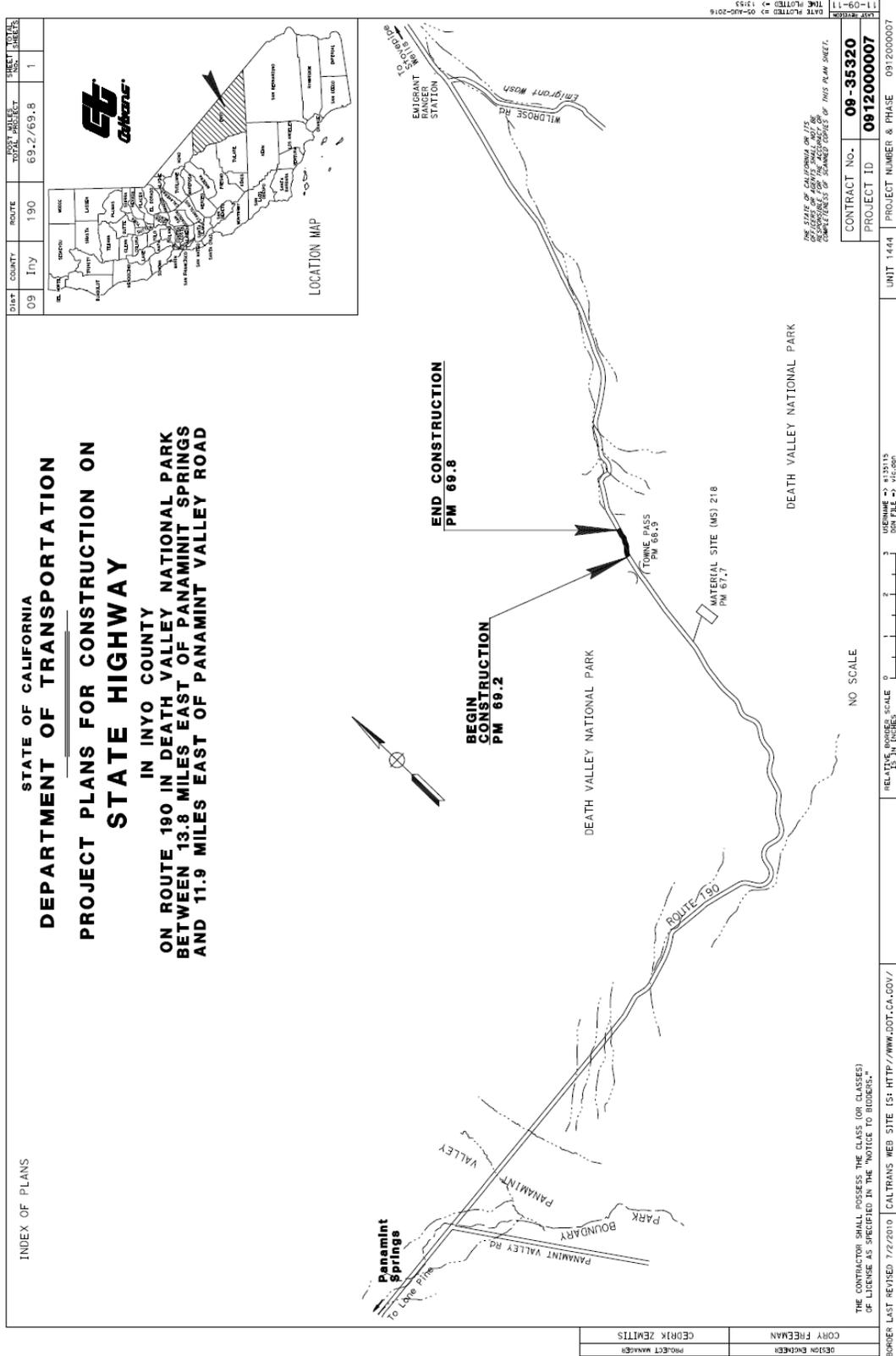


Figure B1-2: Project Vicinity Map with Towne Pass Material Site



1.2 Description of Proposed Project

Caltrans proposes to improve the safety and reduce collisions in the project area by realigning horizontal and vertical curves and constructing shoulders along a segment of State Route 190 approximately 13.8 miles east of Panamint Springs from 11.3 miles to 11.9 miles east of Panamint Valley Road within Death Valley National Park in Inyo County, California. The total length of the project is 0.6 mile. Figures B1-1 and B1-2 in this appendix show maps of the project area.

The following sections summarize the purpose and need for the Towne Pass Curve Correction project and briefly describe the build and no-build alternatives. The full descriptions are in Chapter 1 of the draft environmental assessment.

Purpose for the Proposed Project

The purpose of this project is to improve safety and reduce collisions on State Route 190 in the vicinity of Towne Pass.

Need for Proposed Project

This project is needed to address the higher than average number of collisions in the project area. The total accident rate is 4.37 times the statewide average, and the combined Fatal and Injury (Fatal + Injury) accident rate is 7.29 times the statewide average for a similar facility, as identified by accident data from 2009 to 2014 and provided in Table B1.1

Table B1.1 Accident Rates – Post Miles 69.2 to 69.8

5-Year Data – October 1, 2009 to September 30, 2014

Accident Rates Expressed in Million Vehicle Miles					
Actual			Statewide Average		
Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
0.00	7.58	9.09	0.046	1.04	2.08

There were a total of six collisions recorded during the 5-year period of the accident study. There were no fatalities and six injuries in five injury accidents. One of the collisions caused only property damage. All collisions occurred in 100% clear weather and in 100% daylight.

Within the project limits, the current highway alignment consists of six curves, with curve radii of 390 feet, 350 feet, 920 feet, 385 feet, 560 feet, and 2,292 feet, respectively. The standard curve radius for 55 miles per hour is 960 feet. A smaller curve radius indicates a tighter curve that must be negotiated at a slower speed; the maximum speed for a typical two-lane conventional highway, such as that in the project area with a curve radius of 400 feet is 35 miles per hour. Also, the reversing nature of the curves in the

project area create additional challenges and further reduce the appropriate safe driving speed for the entire length of the project area.

Stopping sight distance in the project area is as low as 166 feet due to the interaction between crest vertical and horizontal curves. These sight distances would provide for complete stopping only for vehicles moving at approximately 25 miles per hour, whereas a sight distance of 500 feet provides for complete stopping for vehicles moving at approximately 55 miles per hour. Paved shoulder widths range from 0 to 2 feet. Cut slopes are steep, nearly vertical, and are deeply eroded with shallow channels and gullies. Vegetation has not naturally reestablished on cut slopes, and the potential exists for the slopes to shed rocks onto the roadway.

Segment 3 of the Caltrans State Route 190 Transportation Concept Report (2013) specifically recommends realignment of “horizontal and vertical curves and reduce potential for rockfall” for the project area (post miles 69.20-69.80), in addition to increasing paved and unpaved shoulder widths.

Alternatives

The following provides a summary of the proposed project alternatives discussed in the Draft Environmental Assessment that would result in a use of the 4(f) properties described above. Additional alternatives that avoid use of the 4(f) properties are located in Section 1.5, Avoidance Alternatives, of this evaluation. Chapter 1 of the Draft Environmental Assessment provides additional detailed information.

Alternatives Discussed in the Draft Environmental Assessment

Alternative 1

Alternative 1 proposes to realign the roadway from post miles 69.2 to 69.8 using a 55-mile-per-hour design speed, and includes paved shoulders of 4 to 8 feet. There are no anticipated exceptions to design standards with this alternative. The current six curves will be reduced to three. This new alignment will be constructed east of the existing alignment. To facilitate the new right-of-way, a Highway Easement Deed from Death Valley National Park will be obtained. A map of Alternative 1 is provided as Figure B1-3 of this appendix.

During construction, traffic flow will be maintained by one-way traffic control on the existing roadway, temporary graded dirt surfaces, and/or newly constructed roadway. After construction, portions of the existing roadway not used in the new alignment will be removed. Existing cuts no longer needed for sight distance or shoulders will be stabilized with earthen material from onsite. Both the removed roadway and stabilized cuts will be reconfigured to look more natural. The total current cost estimate for Alternative 1 is \$3,897,000, which consists of \$3,884,000 for construction costs and \$13,000 for right-of-way costs. Alternative 1 would incorporate the following safety improvements:

- Increase curve radii to meet 55-mile-per-hour design speed standards

- Provide uphill and downhill stopping sight distance to meet design speed standards
- Construct standard super-elevation rates and transitions
- Stabilize cuts and provide rock catchment
- Widen shoulders to a width of 4 to 8 feet
- Install skip-strip rumble strips

Alternative 2

Alternative 2 proposes to realign the roadway from post miles 69.2 to 69.8 using a 55-mile-per-hour design speed. Alternative 2 would cross the adjacent drainage with a slightly more eastern alignment compared to Alternative 1, and west of the existing roadway. This new alignment will require acquisition of new right-of-way; a Highway Easement Deed from Death Valley National Park will be obtained. After construction, portions of the existing roadway not used in the new alignment will be removed. Existing cuts no longer needed for sight distance or shoulders will be stabilized with earthen material from onsite. A map of Alternative 2 is provided as Figure B1-4 of this appendix.

Alternative 2 would create large cut slopes, resulting in approximately 6,000 cubic yards of excess material, which would need to be exported from the project. The Hydrology Report received in January 2016 discussed the 25-, 50-, 100-year storm events in the Towne Pass area and the volume of water that would need to be handled. To accommodate the potential storm water, large water conveyance structures, such as bridges and/or large multi-box culverts would be required. Alternative 2 would incorporate the following safety improvements:

- Increase curve radii to meet 55-mile-per-hour design speed standards
- Provide uphill and downhill stopping sight distance to meet design speed standards
- Construct standard super-elevation rates and transitions
- Stabilize cuts and provide rock catchment
- Widen shoulders to a width of 4 to 8 feet
- Install skip-strip rumble strips

Alternative 3

Alternative 3 would construct a new alignment to the east of the existing roadway and is mapped in Figure B1-5 of this appendix. This alternative would be constructed primarily within new road cuts.

Alternative 3 proposes an alignment slightly to the east of the existing highway. It would require large cut slopes, resulting in approximately 36,000 cubic yards of excess material. The footprint of Alternative 3, including all road cuts would be approximately 12 acres. Alternative 3 would incorporate the following safety improvements:

- Increase curve radii to meet 55-mile-per-hour design speed standards
- Provide uphill and downhill stopping sight distance to meet design speed standards
- Construct standard super-elevation rates and transitions
- Stabilize cuts and provide rock catchment
- Widen shoulders to a width of 4 to 8 feet
- Install skip-strip rumble strips

No-Build Alternative

The No-Build Alternative will not involve any changes or modifications to the roadway and will continue to perpetuate existing deficiencies in the roadway.

Alternatives Considered but Withdrawn during the Project Initiation Phase

Improvements to Existing Highway

To improve operational safety, this alternative consists of a number of improvements to the existing highway to slow the driving speed of the traveling public to match the current design speed of the roadway. Speed reduction could be accomplished by lowering the posted speed limit on this section of roadway, adding speed reduction devices, such as speed bumps, or a combination of both.

Advisory signs already installed within the project limits have failed to result in a reduction of the accident rate. In addition, modifying the existing speed limit in the project area runs contrary to existing California Vehicle Code section 22358.5, which states that: “physical conditions such as width, curvature, grade and surface conditions, or any other condition readily apparent to a driver, in the absence of other factors, would not require special downward speed zoning.” In practice, this section of the California Vehicle Code means that lowering the speed limit for a set of curves, or other similar conditions, which are the exception to the majority of the roadway in either direction, is not appropriate. Moreover, Caltrans has no regulatory authority under the California Vehicle Code to set speed limits.

In addition, the installation of speed reduction devices, such as speed bumps, is not permitted on a state highway, pursuant to the California Manual on Uniform Traffic Control Devices. However, even if speed bumps were permitted, they could result in additional collisions within the project area when unprepared drivers must suddenly transition from a 55-mile-per-hour highway speed to a slower speed. This alternative would therefore fail to meet the purpose of the project to reduce collisions on State Route 190 in the vicinity of Towne Pass.

Figure B1-3: Alternative 1

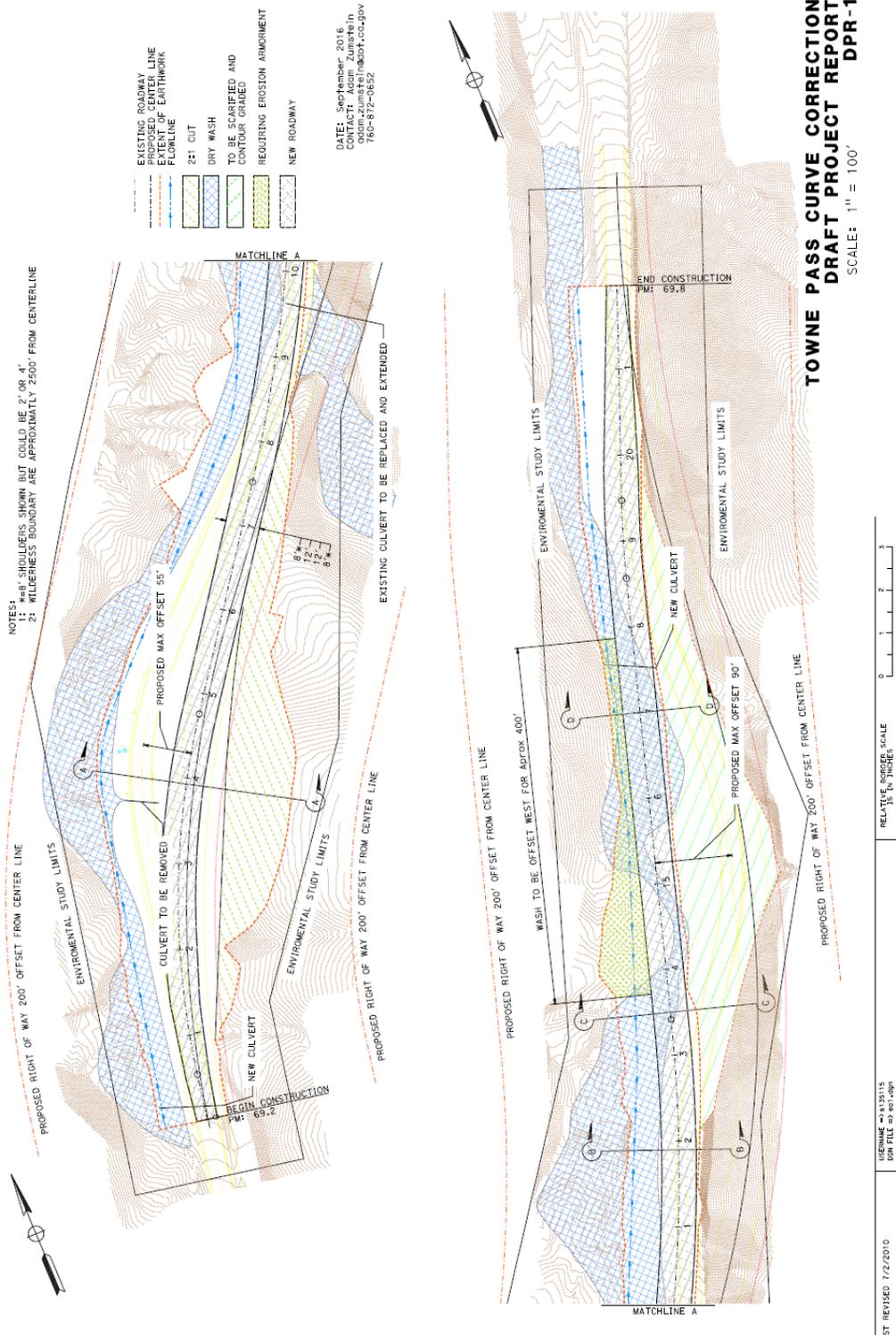


Figure B1-4: Alternative 2

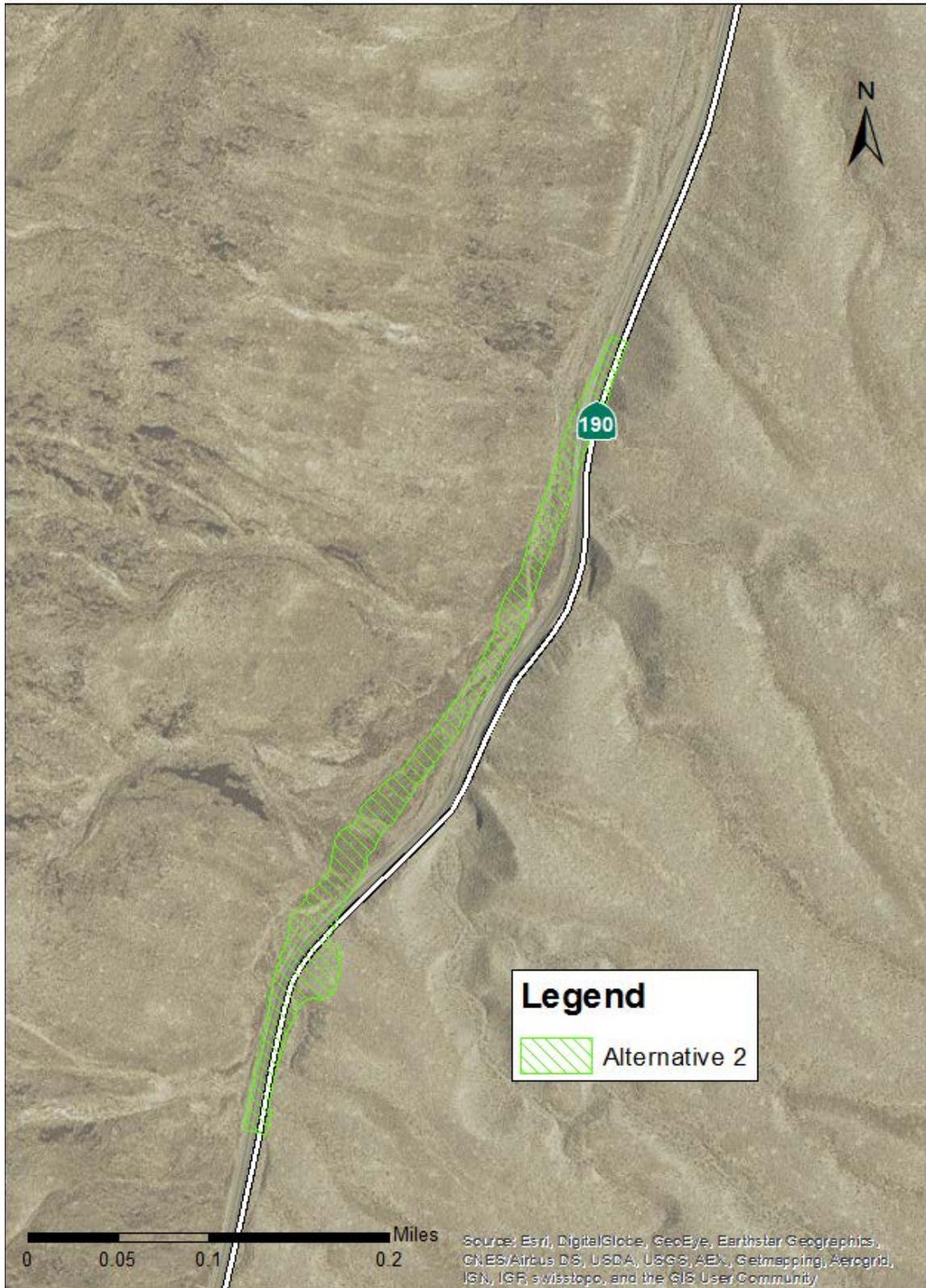
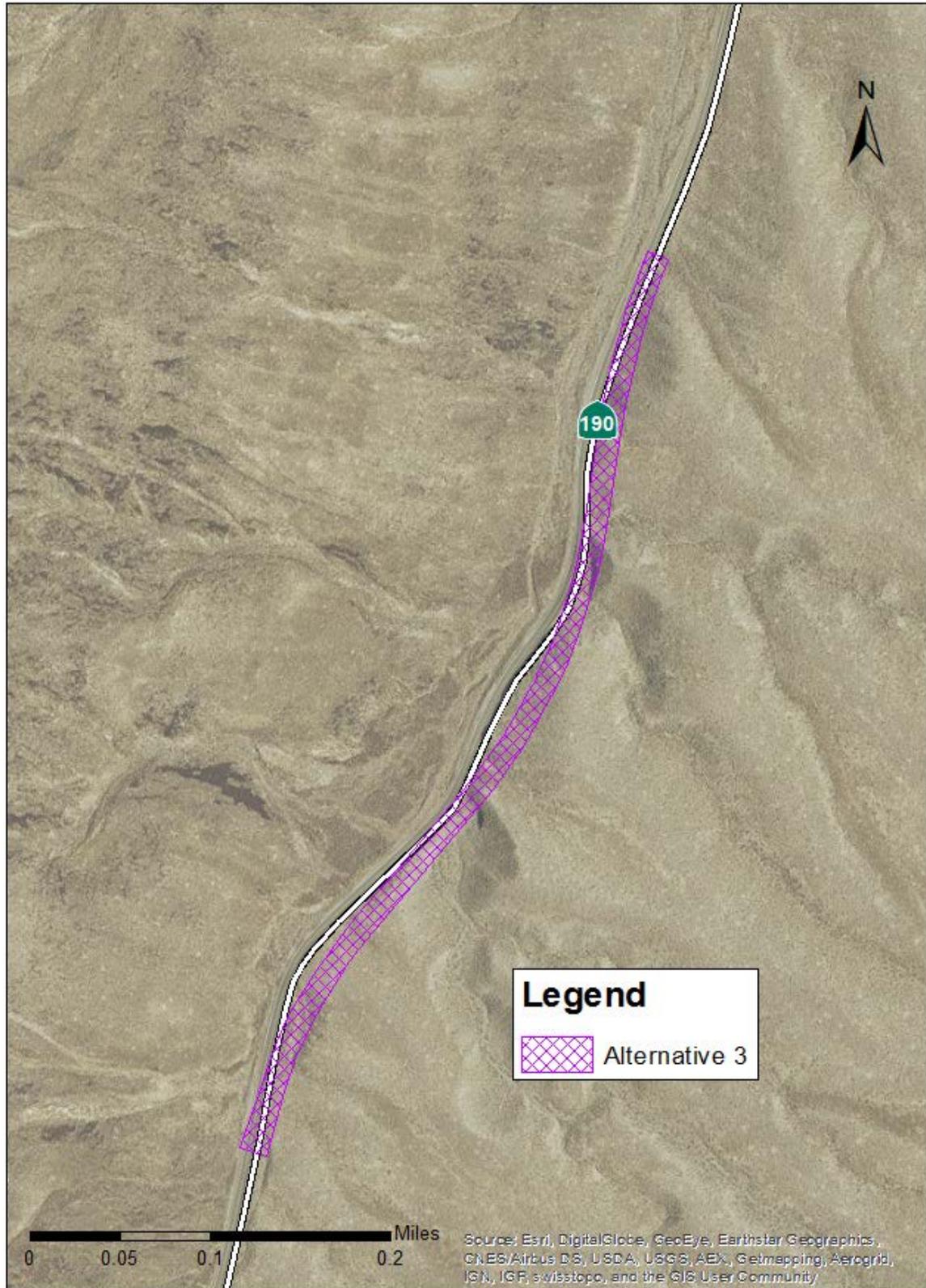


Figure B1-5: Alternative 3



1.3 List and Description of Section 4(f) Properties

Properties subject to the provisions of Section 4(f) are publicly owned parks and recreation areas; wildlife and waterfowl refuges of national, state, or local significance; and historic sites of national, state, or local significance. This project results in the use of the Death Valley National Park and the Eichbaum Toll Road, described below.

Death Valley National Park

Death Valley National Park is a publicly owned park consisting of approximately 3.4 million acres in southeastern California (Inyo County) and southwestern Nevada. Death Valley National Park is managed by the National Park Service and is primarily used for recreation. The original establishment of Death Valley National Monument in 1933 stated the preservation of the unusual features of scenic, scientific, and educational interest as the primary reasons for preservation. The conversion of Death Valley National Monument to Death Valley National Park and substantial expansion of the park's boundaries occurred due to the California Desert Protection Act of 1994. The California Desert Protection Act declared that the lands "display unique scenic, historical, archeological, environmental, ecological, wildlife, cultural, scientific, educational, and recreational values used and enjoyed by millions of Americans for hiking and camping, scientific study and scenic appreciation." See Figure B1-6 of this appendix.

While much of Death Valley National Park is designated as wilderness, the project area is approximately a half mile from any wilderness areas. Death Valley National Park is important as a parkland primarily for its recreational use by millions of Americans and international tourists, and for its scenic views. The general area of the project is currently not used for any recreational activities that visitors to Death Valley National Park come to partake in. No existing recreational facilities are within or adjacent to the project area.

The Death Valley National Park General Management Plan (2002) identifies State Route 190, the subject of the current project, as a primary access point to the rest of Death Valley National Park. The General Management Plan also identified scenic values as an important aspect of Death Valley National Park.

Eichbaum Toll Road

The Eichbaum Toll Road (P-14-005199; CA-INY-7829H) is assumed to be eligible for listing on the National Register of Historic Places for the purposes of the project. A full evaluation of the resource was not completed because the historical road spanned over 30 miles in length. Four segments totaling 854 feet were recorded as a result of survey in support of the project, of which only 287 feet are within the project limits. A full recording of the resource was beyond the scope and scale of the current project. The Eichbaum Toll Road is considered to be eligible for the National Register of Historic Places for its contribution to the development of the area as a recreation destination leading to the development of Death Valley National Monument.

The approximately 30-mile-long **Eichbaum Toll Road (P-14-005199)** from Darwin Wash to Stovepipe Wells was constructed by Herman William (Bob) Eichbaum in 1926.

The road provided the first access to Death Valley for recreational purposes. The resource was designated California Historic Landmark No. 848 in 1971, with a plaque located at Stovepipe Wells. The State of California bought the road in 1934 and incorporated it into the state highway system as State Route 127. The road was later redesignated to be State Route 190 with subsequent improvements and curve realignments. Much of the toll road appears to have been subsumed by the current alignment of State Route 190; therefore, for the purposes of the current undertaking, the current alignment of State Route 190 within the project area as well as the identified unpaved segments of Eichbaum Toll Road are considered component parts of the historic property. The period of significance for the Eichbaum Toll Road dates from its construction as an unpaved toll road in 1926 through 1937 when construction of the “Darwin Cut-off” substantially altered the original 1926 alignment of the road. Character-defining features include:

- Alignment(s) of the road dating to the period of significance.
- Original associated engineering features dating to the period of significance.
- Associated ancillary roadside or vehicular camps dating to the period of significance that exhibit research potential.

Four discontinuous segments (Segments C through F) of the 1926 unpaved Eichbaum Toll Road within the project Area of Potential Effects were recorded on Department of Parks and Recreation 523 forms during archaeological field survey in support of the project. Segments C through F are located approximately one-half mile north of Towne Pass and 16 miles southwest of Stovepipe Wells. See Figure B1-7 of this appendix.

- **Segment C** runs roughly north-south, contouring the base of the hillside. This segment of dirt road measures 588 feet in length and varies in width between 7 and 12 feet.
- **Segment D** runs roughly north-south, contouring the base of the hillside. This segment of dirt road measures 248 feet in length and varies in width between 7 and 12 feet.
- **Segment E** runs roughly north-south, and this segment of road measures 135 feet in length and varies in width between 7 and 12 feet. Construction of this segment appears to have involved removal of thousands of pounds of boulders and cobbles. The method of removal is unknown. Segment E includes a human-made feature (Rock Feature F1, pictured in Figure B1-8) that can be described as a naturally occurring alluvial deposit of boulders and cobbles that have been excavated to either provide passage for vehicles or as a water diversion feature to protect from erosion due to placement/proximity of the natural wash. It measures approximately 90 feet in length, 7 to 12 feet wide and ranges from 2 to 6 feet in height.

- **Segment F** runs roughly north-south, contouring the base of the hillside. This segment of dirt road measures 153 feet in length and varies in width between 7 and 12 feet.

Archival research and mapping also indicated the possible presence of segments of the Eichbaum Toll Road adjacent to, but outside of, the Towne Pass Material Site. These locations were not field recorded as they lie outside the project limits.

Figure B1-6: Map of Death Valley National Park Boundary

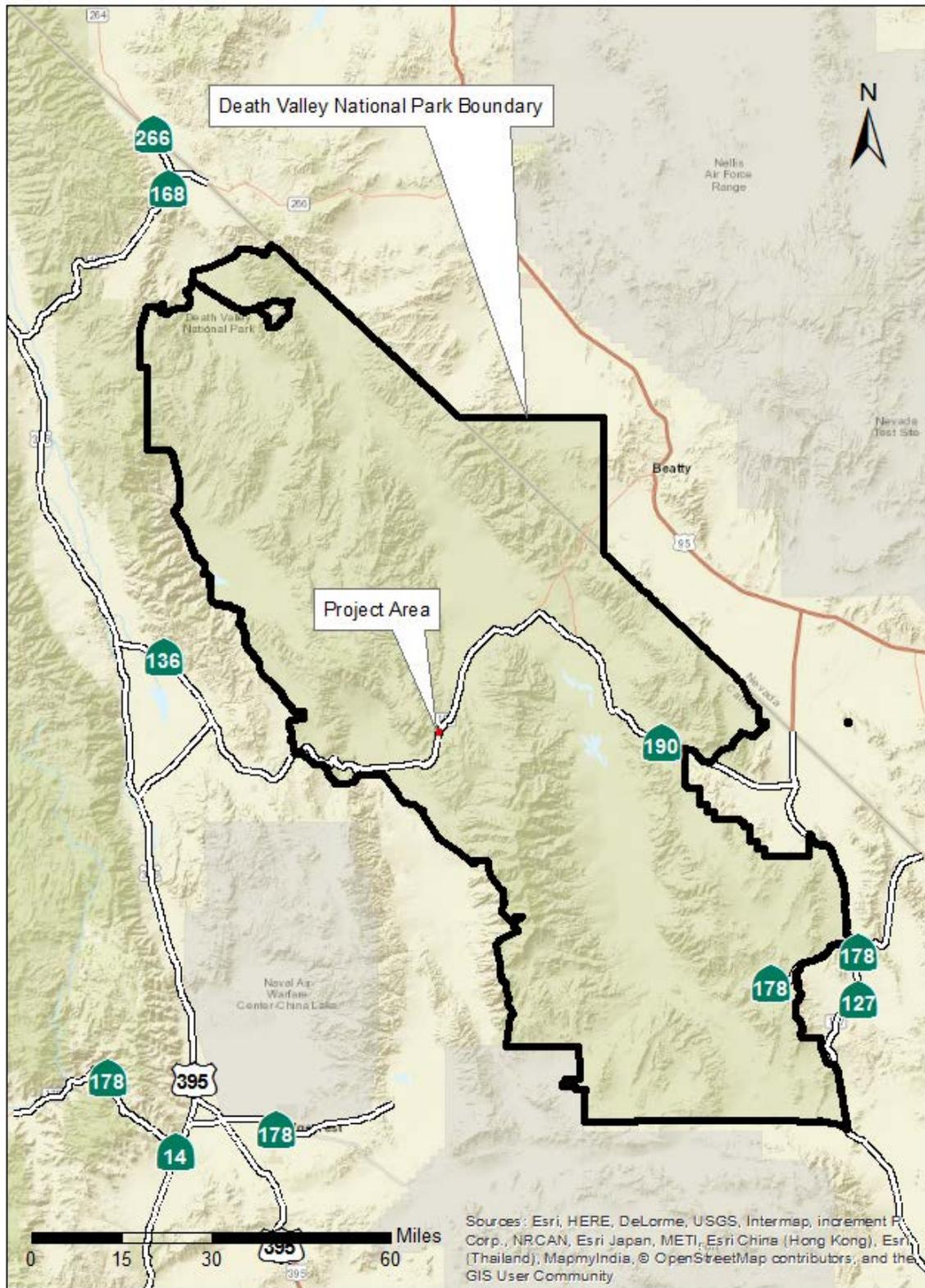


Figure B1-7: Map of Eichbaum Toll Road

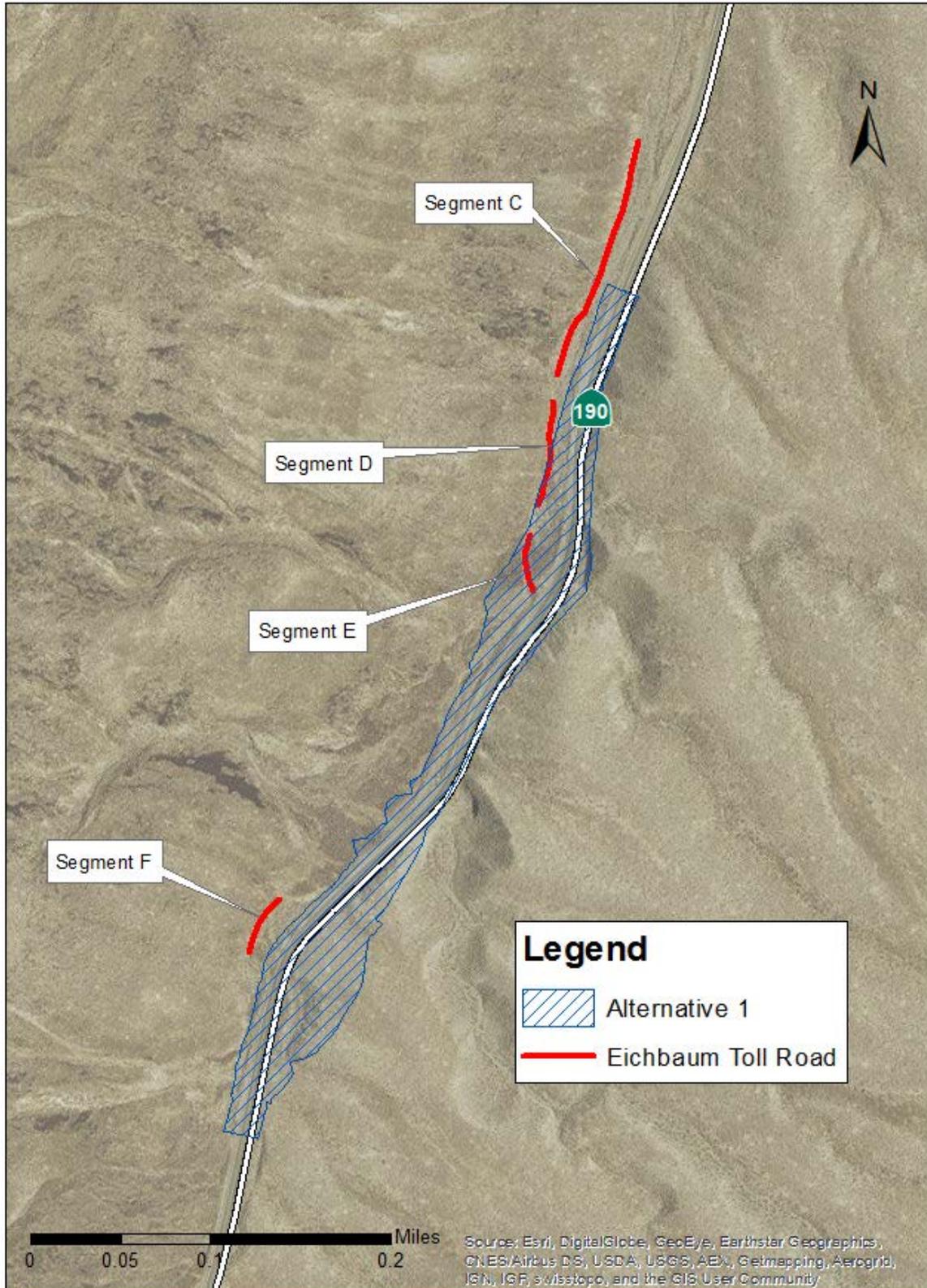


Figure B1-8: Rock Feature F1, in Segment E of the Eichbaum Toll Road



1.4 Impacts on Section 4(f) Resources by Alternative

This section describes how the Towne Pass Curves build alternatives, which do not avoid use of the Section 4(f) resources (Alternatives 1, 2, and 3), would use land from Death Valley National Park and the Eichbaum Toll Road, which is assumed eligible for the National Register of Historic Places for the purposes of this project.

Both Alternative 1 and Alternative 2 have the same direct impacts on the same segments on the Eichbaum Toll Road. Specifically, both Alternative 1 and 2 would directly impact 287 linear feet of historic segments of the Eichbaum Toll Road as well as result in realignment of 0.6 mile of State Route 190, which in the project area is assumed to have subsumed the Eichbaum Toll Road. Realignment of 0.6 mile of State Route 190, approximately 2% of the assumed historic alignment of the Eichbaum Toll Road for the purposes of this project, would be considered of a minor scale that would not constitute an adverse effect. The direct impacts to the historic segments and feature of the Eichbaum Toll Road, however, would result in a finding of adverse effect under Section 106 of the NHPA. These alternatives each have minimal impacts to Death Valley National Park and would result in a *de minimis* evaluation under Section 4(f).

Alternative 3 avoids impacts to the recorded segments of the Eichbaum Toll Road that contribute to its eligibility for the National Register of Historic Places, including Rock Feature F1, but would not avoid changing the alignment of the segments of State Route 190 that overlay original sections of the Eichbaum Toll Road. This alternative, if processed individually, would likely result in a finding of no adverse effect to the Eichbaum Toll Road because it would impact only the 0.6 mile of State Route 190, approximately 2% of the assumed historic alignment of the Eichbaum Toll Road for the purposes of this project, and would be considered of a minor scale that would not constitute an adverse effect. Impacts to Death Valley National Park, which are *de minimis* under Alternatives 1 and 2, would potentially require an individual Section 4(f) evaluation for impacts of Alternative 3 to Death Valley National Park.

A finding of adverse effects to the Eichbaum Toll Road under Section 106 of the NHPA is anticipated for this project. Individual findings by alternative are not made under Section 106. Although Alternative 3 would likely result in a finding of no adverse effect to the Eichbaum Toll Road because realigning approximately 2% is of a relatively minor scale, the project overall, considering all potential build alternatives, would result in an adverse effect. Discussion of findings by alternative are included above only for the purposes of determining Section 4(f) use. Adverse effects would include the physical destruction of or damage to the historic segments of the Eichbaum Toll Road and associated features, including Rock Feature F1 and realignment of the portion of State Route 190 within the project area that is assumed for the purposes of the project to have subsumed the alignment of the Eichbaum Toll Road. These effects would be the result of construction activity, ranging from surface scraping/preparation, movement of rocks that constitute Rock Feature F1, realignment of the assumed historic alignment, and cuts that may completely eliminate the resource within the construction footprint.

The use of Death Valley National Park land and this historic property trigger the requirements for protection under Section 4(f). In addition to identifying permanent use and temporary occupancy of Death Valley National Park and the Eichbaum Toll Road and the Eichbaum Toll Road's contributing elements, an assessment was made as to whether the project alternatives would result in additional effects that would substantially impair the activities, features, and/or attributes that qualify these resources for protection under the requirements of Section 4(f).

A discussion as to whether the project alternatives would result in additional effects (beyond direct use) that would substantially impair the activities, features, and/or attributes that qualify Death Valley National Park and the Eichbaum Toll Road, including Rock Feature F1, for protection under the requirements of Section 4(f) is included below.

Facilities, Functions, and/or Activities

This section of State Route 190 serves as the entrance to Death Valley National Park. The Death Valley National Park pay station sits approximately 16 miles to the northeast of the project limits, in Stovepipe Wells. No facilities, functions or activities of Death Valley National Park are located within or adjacent to the project limits, so all build alternatives of the proposed project would have no impact upon these functions.

No facilities, functions or activities are associated with the Eichbaum Toll Road, so all the build alternatives of the proposed project would have no impact upon these functions.

Accessibility

The build alternatives of the proposed project would improve accessibility to Death Valley National Park by improving the safety of State Route 190, an access route to Death Valley National Park's pay station at Stovepipe Wells.

Alternatives 1 and 2 of proposed project would impact approximately 287 feet of the approximately 30-mile-long Eichbaum Toll Road and would destroy Rock Feature F1. Although these properties are not typically used or accessed by the general public, the project would have little effect on the accessibility of the toll road overall. As Rock Feature F1 would be destroyed, no access would remain for this feature. The No-Build Alternative, Alternative 3, and Improvements to Existing Highway would not affect access to the Eichbaum Toll Road from current conditions.

Visual

With the implementation of mitigation methods outlined in Section 2.1.3 Visual/Aesthetic of the Draft Environmental Assessment, the visual impacts of Alternatives 1 and 2 of the proposed project would be reduced and would not result in substantial changes in overall visual quality for Death Valley National Park. Visual impacts of Alternative 3 may be of a substantial nature that may not be sufficiently mitigated to result in a *de minimis* impact to Death Valley National Park. Additionally, the toll road is not typically used or accessed by the general public, and the remaining segments of the toll road do not qualify as visual receptors. Therefore, Alternatives 1 and 2 of the proposed project would have little to no impact on the visual character of either Death Valley National Park or the toll road (including Rock Feature F1), beyond the destruction of Rock Feature F1 and segments of the toll road.

Alternative 3 would have little to no impact on the toll road (including Rock Feature F1), but would likely have an impact on Death Valley National Park. Improvements to Existing Highway and the No-Build Alternative would have little to no impact on the toll road or on Death Valley National Park.

Noise and Vibration

The projected peak hour noise levels are below Federal Highway Administration requirements for all receptors within the project vicinity (Noise Evaluation, January 9, 2013, Impact screening at the beginning of Chapter 2 of the draft Environmental Assessment). Impacts from noise and vibration to either Death Valley National Park or the toll road (including Rock Feature F1) are not anticipated from any of the proposed alternatives.

Vegetation

None of the proposed alternatives of the project would affect any special-status plant species located within Death Valley National Park (Natural Environment Study, June 8, 2016, Impact screening at the beginning of Chapter 2 of the draft Environmental Assessment). There is no vegetation associated with the toll road (including Rock Feature F1), so no impacts are anticipated from any of the proposed alternatives.

Wildlife

None of the proposed alternatives of the project would affect any special-status animal species located within Death Valley National Park (Natural Environment Study, June 2016, Impact screening at the beginning of Chapter 2 of the draft Environmental Assessment). There is no wildlife associated with the toll road (including Rock Feature F1), so no impacts are anticipated from any of the proposed alternatives.

Air Quality

None of the proposed alternatives of the project will create permanent air quality impacts. During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities (Draft Environmental Assessment, Section 2.2.2 Air Quality). No impacts to air quality associated with Death Valley National Park, or the toll road (including Rock Feature F1) are anticipated from any of the proposed alternatives.

Water Quality

A temporary reduction in water quality may occur during the construction of any of the proposed build alternatives of the project. This applies only to storm water flowing through the work area. The impacts would be temporary (Draft Environmental Assessment, Section 2.2.1 Water Quality and Storm Water Runoff). No temporary reduction in water quality is expected as a result of the No-Build Alternative. No impacts to water quality associated with Death Valley National Park or the toll road (including Rock Feature F1) are anticipated from any of the proposed alternatives.

The No-Build Alternative and Improvements to Existing Highway would not include any of the elements proposed by Alternatives 1, 2, or 3 and therefore would not result in the permanent use or temporary occupancy of land from Section 4(f) properties. Therefore, the

No-Build Alternative and Improvements to the Existing Highway are not discussed in this section. They are discussed in Section 1.5, Avoidance Alternatives Analysis, below.

1.5 Avoidance Alternatives Analysis

This analysis of avoidance alternatives used the feasible and prudent standards of Section 4(f). This assessment is based on the definition of “feasible and prudent avoidance alternative” in 23 CFR 774.17. The regulations state that an avoidance alternative is feasible and prudent if it “does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property.” An alternative is not feasible “if it cannot be built as a matter of sound engineering judgment.”

The regulations do not provide a single clear definition of “prudent.” Instead, they list a series of factors that can support a conclusion that an alternative is imprudent. The definition of “feasible and prudent avoidance alternative” in 23 CFR 774.17 provides the following direction for determining whether an alternative is prudent:

An alternative is not prudent if:

- i. It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- ii. It results in unacceptable safety or operational problems;
- iii. After reasonable mitigation, it still causes:
 - a) Severe social, economic, or environmental impacts;
 - b) Severe disruption to established communities;
 - c) Severe disproportionate impacts to minority or low income populations; or
 - d) Severe impacts to other federally protected resources;
- iv. It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- v. It causes other unique problems or unusual factors; or
- vi. It involves multiple factors listed above, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

Avoidance Alternatives

Improvements to Existing Highway

To improve operational safety, a number of improvements could be made to the existing highway to slow the driving speed of the traveling public to match the current design speed of the roadway. Speed reduction could be accomplished by lowering the speed limit on this section of roadway, adding speed reduction devices such as speed bumps, or a combination of both. These improvements would avoid the use of Section 4(f) properties, including Death Valley National Park and the Eichbaum Toll Road, including Rock Feature F1, and would

not alter the alignment of State Route 190, which is currently presumed to be the alignment of part of the roadway during its period of significance.

Advisory signs have already been installed within the project limits and have failed to result in a reduction of the collision rate. In addition, modifying the existing speed limit in the project area runs contrary to existing California Vehicle Code section 22358.5, which states that: “physical conditions such as width, curvature, grade and surface conditions, or any other condition readily apparent to a driver, in the absence of other factors, would not require special downward speed zoning.” This section of the California Vehicle Code means that lowering the speed limit for a set of curves, or other similar conditions, which are the exception to the majority of the roadway in either direction, is not appropriate. Moreover, Caltrans has no regulatory authority under the California Vehicle Code to set speed limits. In addition, the installation of speed bumps is not permitted on a State highway, pursuant to the California Manual on Uniform Traffic Control Devices. However, even if speed bumps were permitted, they could create additional collisions within the project area when unprepared drivers must suddenly transition from a 55-mile-per-hour highway speed to a slower speed. This alternative would therefore fail to meet the purpose of the project to reduce collisions on State Route 190 in the vicinity of Towne Pass.

For these reasons, lowering the speed limit and/or adding speed reduction devices (such as speed bumps) would be contrary to current standards of California engineering as codified in California law and the California Manual on Uniform Traffic Control Devices, and thus this alternative is *not feasible*.

No-Build Alternative

The No-Build Alternative would avoid the use of the Section 4(f) properties, including Death Valley National Park and the Eichbaum Toll Road, including Rock Feature F1. This alternative would not improve safety or reduce collisions within this area of State Route 190 in Death Valley National Park. It would not meet current design standards, improve overall operations, increase driver visibility or stabilize rockfall within the project area. Therefore, the alternative is *not prudent* because:

- i. The No-Build Alternative would fail to achieve the stated purpose and need of the project to improve safety and reduce collisions within this area of State Route 190;
- ii. Not implementing the project would perpetuate existing safety problems and would not improve safety or reduce collisions within the project area. Accident rates would remain at 7.29 times the statewide average for this type of roadway. Safety of the traveling public would remain a concern. Rockfall would continue to be an operational problem within the project area.
- v. The No-Build Alternative would leave in place tight curves difficult and dangerous to negotiate for tour buses, which are noted as increasing in the most recent Death Valley National Park General Management Plan (2002);
- vi. The multiple factors, as discussed above, cumulatively escalate the impacts of the No-Build Alternative.

1.6 Measures to Minimize Harm

The development of alternatives for the Towne Pass Curve Correction project considered a range of engineering and environmental constraints, particularly Section 4(f) properties in the project area. Avoiding or minimizing use of features of the Section 4(f) properties was a key criterion during the alternatives development and refinement processes. Measures to minimize harm to Death Valley National Park are discussed in Section 1.9 of this appendix. The following measures to minimize harm to the Eichbaum Toll Road were developed as a result of the environmental evaluation and the Section 106 process:

Cultural 1 – Environmentally Sensitive Areas will be established to protect and avoid Segments C and F, and the portions of Segment D that are outside the project limits. Environmentally Sensitive Areas will also be established adjacent to the material site where the Eichbaum Toll Road may be present as mapped by archival research but outside the project area.

Cultural 2 – The conceptual mitigation measure for effects to the Eichbaum Toll Road would include development of a historic context for the Eichbaum Toll Road for future use by Death Valley National Park in interpretation and/or recordation and evaluation of the whole Eichbaum Toll Road, however measures will be finalized in a Memorandum of Agreement with the State Historic Preservation Officer.

1.7 Coordination

A Section 4(f) evaluation requires documentation of the Section 106 process. Consultation with the State Historic Preservation Officer is in progress. Prior to making Section 4(f) approvals under Section 774.3(a), the Section 4(f) evaluation must be provided for coordination and comment to the official(s) with jurisdiction over the Section 4(f) resource and to the Department of the Interior. A Section 4(f) evaluation prepared under Section 774.3(a) must include sufficient supporting documentation to demonstrate why there is no feasible and prudent avoidance alternative, and it must summarize the results of all possible planning to minimize harm to the Section 4(f) property.

Pursuant to Stipulation VIII.C(4) of the January 2014 *First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it pertains to the Administration of the Federal-Aid Highway Program in California*, Caltrans has assumed the eligibility of the Eichbaum Toll Road, including Rock Feature F1, for listing on the National Register of Historic Places for the purposes of this project because fully recording the approximately 30-mile-long toll road is well beyond the scope and scale of the current project.

On June 23, 2016, Caltrans initiated consultation with the State Historic Preservation Officer in regard to the Towne Pass Curves Correction project. Caltrans intends to seek the State Historic Preservation Officer's concurrence that the remaining prudent and feasible alternatives discussed in this document, Alternative 1 and Alternative 2, will have an adverse effect on the Eichbaum Toll Road. Caltrans intends to continue consultation, and if

Alternative 1 or Alternative 2 is selected, complete a Memorandum of Agreement with the State Historic Preservation Officer, the Advisory Council on Historic Preservation if the Council chooses to participate, and any other consulting parties in compliance with Section 106 of the NHPA prior to completing the final environmental document.

1.8 Least Harm Analysis

If there is no prudent and feasible alternative to avoid harm to the Section 4(f) property, then only the alternative that causes the least overall harm, in light of the statute's preservation purpose, can be chosen. While analysis of alternatives that would cause the least harm will be completed in the Final Section 4(f) analysis for the proposed project, some preliminary information about least harm is known at this stage. The least overall harm is determined by balancing the following:

- i. Ability to mitigate adverse impacts to each Section 4(f) resource
- ii. Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features (document even if harm is substantially equal)
- iii. Relative significance of each Section 4(f) property
- iv. Views of the officials with jurisdiction over each Section 4(f) property
- v. Degree to which each alternative meets the purpose and need
- vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
- vii. Substantial differences in costs among alternatives

Not all uses of Section 4(f) properties have the same magnitude of impact, and not all features of Section 4(f) properties have the same quality or significance. A qualitative analysis of the permanent use of the Eichbaum Toll Road and Rock Feature F1 was done to assist in understanding the net impact of each build alternative on that Section 4(f) property. This analysis considered the impacts of the build alternatives on the toll road and Rock Feature F1 after implementation of the avoidance, minimization, and mitigation measures described in the Measures to Minimize Harm section in the Draft Environmental Assessment.

All three build alternatives impact Death Valley National Park, though the “use” under Alternative 1 and Alternative 2 would be considered *de minimis*.

Both Alternative 1 and Alternative 2 have the same impact to the same 287 feet of the toll road including Segment E, which contains Rock Feature F1, and part of Segment D. Although Alternative 3 avoids impacts to much of the toll road areas that are not subsumed by State Route 190, it does impact State Route 190 itself, which is considered to be a part of the Eichbaum Toll Road within the project area for the purposes of this project only. The overall toll road was approximately 30 miles long, making the use of 287 feet of the historically visible toll road less than 0.2% of the overall length. Realignment of 0.6 mile of State Route 190, which is presumed to be part of the approximately 30-mile-long historic alignment of the Eichbaum Toll Road would realign approximately 2% of the overall length.

The final least overall harm analysis and conclusion will be reported in the Final Environmental Assessment/Final Section 4(f) Evaluation.

1.9 Section 4(f) De Minimis Determination

Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 USC 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This revision provides that once the U.S. Department of Transportation (USDOT) determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. The Federal Highway Administration's final rule on Section 4(f) *de minimis* findings is codified in 23 CFR 774.3 and CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 USC 326 and 327, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

The build alternatives of the project propose to realign the existing highway and would require acquisition of right-of-way through a Highway Easement Deed from Death Valley National Park, a Section 4(f) resource.

The transportation use of Death Valley National Park lands is *de minimis* because the general area of this location in the project area is not currently used for any designated recreational activities that visitors to Death Valley National Park come to partake in. Additionally, the transportation use of Death Valley National Park lands would be minimal, approximately 6 acres of the 3.4-million-acre park. Thus, any impacts will not adversely affect the activities, features, and attributes of the 4(f) resources.

The public will be provided with an opportunity to review and comment on the project, including its effects on Death Valley National Park. This opportunity will be afforded during the 45-day public circulation and comment period of the draft environmental document. A Public Notice will inform the public of the availability of the draft environmental document and of the opportunity to request a public hearing. All comments will be considered and the responses will be incorporated into the final environmental document.

As this project is entirely within the boundaries of Death Valley National Park, avoidance of use of park land is not possible. Potential temporary traffic impacts during construction will be minimized by using staged construction when and where possible. Potential visual impacts of the project, which will be the most noticeable permanent impacts to park visitors will be mitigated to less than significant levels through the implementation of the following visual mitigation measures:

Visual 1 - All disturbed areas within the project limits not specifically designed as site distance roadsides or as recoverable surfaces will be graded to appear as natural as

possible. Natural-appearing roadside grading will include broad, random undulations, gently rounded transitions between adjacent slope-faces and varied planar surfaces.

Visual 2 - Slope rounding of the top of the cut slopes will be implemented where possible.

Visual 3 - The current roadway will be decommissioned by obliterating old pavement and removing material, ripping up the old roadbed, placing material excavated from the cut area and contouring the material to look natural, and including features (such as random placement of rock and/or vertical mulch) to encourage natural revegetation where possible.

Visual 4 - Existing vegetation in spot locations will be protected when possible by excavating around vegetation when recontouring.

1.10 Resources Evaluated Relative to the Requirements of Section 4(f)

This section discusses parks, recreational facilities, wildlife refuges, and historic sites found within or next to the project area that do not trigger Section 4(f) protection because either (1) they are not publicly owned, (2) they are not open to the public, (3) they are not National Register-eligible historic properties, (4) the project does not permanently use the property and does not hinder the preservation of the property, or (5) the proximity impacts do not result in a constructive use.

Other than the Death Valley National Park, discussed in Section 1.9 above, and Attachment *A de minimis* below, no public parks, recreation areas, wildlife refuges or historic sites were identified within a quarter mile of the project limits.

Attachment A De Minimis

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION

DISTRICT 9
500 SOUTH MAIN STREET
BISHOP, CA 93514

PHONE (760) 872-3021
FAX (760) 872-8402
TTY 711
www.dot.ca.gov



*Serious drought.
Help save water!*

June 30, 2016

Mike Reynolds, Superintendent
Death Valley National Park
Highway 190
P.O. Box 579
Death Valley, CA 92328

Dear Superintendent Reynolds:

State Route 190 Towne Pass Curve Correction Project, Post Miles 69.2/69.8
EA: 09-3520, PEPC:
Section 4(f) *De Minimis* Impacts Finding Comments Request

The California Department of Transportation (Caltrans) proposes to realign approximately 0.6 miles of State Route 190 from post miles 69.2 to 69.8. The current six curves will be reduced to three. This re-alignment will cover approximately 6 acres of ground disturbance and improve the horizontal and vertical curves to meet a minimum design speed of 55 mph, increase the stopping sight distance to 500 feet, and construct paved shoulders up to 8 feet in width throughout the project area. Additionally, the project will flatten or stabilize side slopes and create a catchment adjacent to the roadway, thus reducing the potential for rock fall.

To construct this project, approximately 12,000 cubic yards of excess earthen material will be produced. Caltrans intends to pursue a Special Use Permit from Death Valley National Park to allow access to the Town Pass Material Site for stockpiling and disposal of this excess material, however, disposal of excess material will be the responsibility of the contractor.

Possible staging areas include the pullout at the Towne Pass Brake Check area, the Towne Pass Material Site, and within the project limits. Drainage work will be performed in the existing wash to improve storm water conveyance and armoring of fill slopes. Two existing culverts will be upgraded and replaced and an additional culvert will be added to enhance storm water flows. The current right of way is unknown and new right of way will be confirmed through construction.

The purpose of this letter is to seek your comments and any concerns with the California Department of Transportation (Caltrans) anticipates that a Section 4(f) *de minimis* impact finding is appropriate for the portion of Death Valley National Park property that would be affected by the proposed project. The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by

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Mr. Mike Reynolds
June 30, 2016
Page 2

Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327. Caltrans makes this anticipated finding pursuant to its assumed responsibilities pursuant to 23 USC 327 and the associated FHWA guidance dated December 13, 2005.

The Towne Pass Curve Correction project proposes one build alternative (Alternative 1) and a no-build alternative. Alternative 1 proposes to realign the existing highway to the west and would require the acquisition of right-of-way from Death Valley National Park, a Section 4(f) resource. The current right-of-way is unknown and new right-of-way will be confirmed through construction. The general area of this location is not currently used for any recreational activities that visitors to Death Valley National Park come to partake in.

With the selection of Alternative 1, the conversion of Death Valley National Park lands to a transportation use within the project limits, as summarized above, does not adversely affect any of the activities, features, and attributes that qualify this portion of Death Valley National Park right-of-way for protection under Section 4(f). The transportation use of Death Valley National Park lands would be minimal, approximately 6 acres of the 3.4 million acre National Park.

This letter also indicates that the public will be afforded an opportunity to review and comment project, including its effects on the Death Valley National Park. This opportunity will be afforded during the 45-day public circulation and comment period of the Draft Environmental Document. A Public Notice will inform the public of the availability of the Draft Environmental Document as well as the date and time of an anticipated Public Hearing. All comments will be considered and the responses will be incorporated into the Final Environmental Document.

Based on the foregoing information, Caltrans anticipates that a Section 4(f) *de minimis* impact finding is the appropriate finding for the portion of Death Valley National Park affected by this project. We request that you provide Caltrans with any comments or concerns on Death Valley National Park letterhead by July 22, 2016.

Should you have questions concerning this matter, please contact Angie Calloway, Senior Environmental Planner at (760) 872-2424 Or Angie.Calloway@dot.ca.gov or Trevor Pratt, Associate Environmental Planner at (760) 872-3021 or Trevor.Pratt@dot.ca.gov.

Sincerely,



Angela Calloway
Office Chief, Environmental
Department of Transportation
District 9 - Bishop

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United States Department of the Interior

NATIONAL PARK SERVICE
Death Valley National Park
P.O. Box 579
Death Valley, California 92328



IN REPLY REFER TO

August 17, 2016

Angie Calloway
Office Chief, Environmental
Department of Transportation
District 9-Bishop
500 S. Main St.
Bishop, CA 93514

CAL TRANS DIST 9
2016 AUG 22 PM 4: 11

Dear Ms. Calloway.

Thank you for your invitation to provide comments on the anticipated Section 4(f) de minimis finding for the State Route 190 Towne Pass Curve Correction Project.

We acknowledge the following from your letter dated June 30, 2016:

- 1. "Caltrans makes this anticipated finding pursuant to its assumed responsibilities pursuant to 23 U.S.C. 327 and the associated FHWA guidance dated December 13, 2005."

The National Park Service acknowledges the assumed responsibilities to make this anticipated finding.

- 2. "The Towne Pass Curve Correction project proposes one build alternative (Alternative 1) and a no-build alternative. Alternative 1 proposes to realign the existing highway to the west and would require the acquisition of right-of-way from Death Valley National Park, a Section 4(f) resource."

We understand the description of the proposed project alternative. The "right-of-way" described according to National Park Service policies shall be a Highway Easement Deed for the identified section. We agree that the project will occur on lands that must be considered under Section 4(f) and that the transportation use is approximately 6 acres of the total acreage of the National Park.

- 3. Your letter states that "With the selection of Alternative 1, the conversion of Death Valley National Park lands to a transportation use within the project limits, as summarized above, does not adversely affect any of the activities, features, and attributes that qualify this portion of Death Valley National Park right-of-way for protection under Section 4(f)."

The Draft Environmental Document states that Caltrans anticipates an adverse effect to portions of the Eichbaum Toll Road which is considered to be eligible for the National Register of Historic Places. Please clarify the rationale that Caltrans used to make the *de minimis* impact determination in light of this fact.

4. "This letter also indicates that the public will be afforded an opportunity to review and comment on the project, including its effects on the Death Valley National Park."

We look forward to the public comment period and extend our invitation to host the public hearing at a mutually convenient location within the Park.

Please answer our concern regarding the Eichbaum Toll Road at your earliest convenience. Thank you for your continued cooperation on this project.

Sincerely,
Mike Reynolds
Superintendent



DEPARTMENT OF TRANSPORTATION
DISTRICT 9
500 SOUTH MAIN STREET
BISHOP, CA 93514

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Serious drought.
Help save water!

September 7, 2016

Mike Reynolds, Superintendent
Death Valley National Park
Highway 190
P.O. Box 579
Death Valley, CA 92328

State Route 190 Towne Pass Curve Correction Project, Post Miles 69.2/69.8
EA: 09-3520, PEPC:
Section 4(f) *De Minimis* Impacts Finding Comments

Dear Superintendent Reynolds:

Thank you for your letter dated August 17, 2016 regarding the Section 4(f) impacts for the Towne Pass Curve Correction Project.

In your August 17, 2016 letter, you highlighted a concern regarding a *de minimis* finding for effects to Death Valley National Park:

"The Draft Environmental Document states that Caltrans anticipates an adverse effect to portions of the Eichbaum Toll Road which is considered to be eligible for the National Register of Historic Places. Please clarify the rationale that Caltrans used to make the *de minimis* impact determination in light of this fact."

To clarify, Caltrans assesses the effects of the project upon each individual resource eligible for protection under Section 4(f). For the proposed project, two resources eligible for protection under Section 4(f) were identified, the Eichbaum Toll Road, as a historic site, and Death Valley National Park, as a publicly owned park.

Caltrans is in the process of evaluating impacts of the proposed project on the Eichbaum Toll Road through the completion of an individual Section 4(f) Evaluation. The purpose of the June 30, 2016 letter was to seek your comments in regards to the nature of the project's effects to Death Valley National Park, as a public park eligible for protection under Section 4(f) as a public park.

Caltrans is currently consulting with the State Historic Preservation Officer in regards to the impacts of the proposed project upon the Eichbaum Toll Road under Section 4(f) and Section 106 of the National Historic Preservation Act.

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Mr. Mike Reynolds
September 7, 2016
Page 2

As the official with jurisdiction over the park resource, Caltrans is seeking your comments and any concerns regarding a preliminary finding that the proposed project will have a *de minimis* effect to Death Valley National Park as a park resource. The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327. Caltrans makes this anticipated finding pursuant to its assumed responsibilities pursuant to 23 USC 327 and the associated FHWA guidance dated December 13, 2005.

Caltrans' rationale for finding that the proposed project will have a *de minimis* impact to Death Valley National Park as a publicly owned park eligible for protection under Section 4(f), as stated in my letter dated June 30, 2016, is provided below for your convenience.

"The Towne Pass Curve Correction project proposes one build alternative (Alternative 1) and a no-build alternative. Alternative 1 proposes to realign the existing highway to the west and would require the acquisition of right-of-way from Death Valley National Park, a Section 4(f) resource. The current right-of-way is unknown and new right-of-way will be confirmed through construction. The general area of this location is not currently used for any recreational activities that visitors to Death Valley National Park come to partake in.

With the selection of Alternative 1, the conversion of Death Valley National Park lands to a transportation use within the project limits, as summarized above, does not adversely affect any of the activities, features, and attributes that qualify this portion of Death Valley National Park right-of-way for protection under Section 4(f). The transportation use of Death Valley National Park lands would be minimal, approximately 6 acres of the 3.4 million acre National Park.

This letter also indicates that the public will be afforded an opportunity to review and comment project, including its effects on the Death Valley National Park. This opportunity will be afforded during the 45-day public circulation and comment period of the Draft Environmental Document. A Public Notice will inform the public of the availability of the Draft Environmental Document as well as the date and time of an anticipated Public Hearing. All comments will be considered and the responses will be incorporated into the Final Environmental Document."

Based on the foregoing information, Caltrans anticipates that a Section 4(f) *de minimis* impact finding is the appropriate finding for the portion of Death Valley National Park, as a park resource affected by this project. Please note that this *de minimis* finding does not extend to the Eichbaum Toll Road, for which an individual Section 4(f) Evaluation is being completed and will be included in the Draft Environmental Document. We request that you provide Caltrans with any comments or concerns regarding effects of the proposed project upon Death Valley National Park, as a park resource, on Death Valley National Park letterhead as soon as possible, so your response may be included in the public circulation of the Draft Section 4(f) Evaluation and Draft Environmental Document.

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Mr. Mike Reynolds
September 7, 2016
Page 3

Should you have questions concerning this matter, please contact Angie Calloway, Senior Environmental Planner at (760) 872-2424 or Angie.Calloway@dot.ca.gov or Trevor Pratt, Associate Environmental Planner at (760) 872-3021 or Trevor.Pratt@dot.ca.gov.

Thank you for your assistance in providing a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

Sincerely,

A handwritten signature in blue ink, appearing to read "Angie Calloway".

Angela Calloway
Office Chief, Environmental
Department of Transportation
District 9 - Bishop

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Appendix C. Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
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March 16, 2012

NON-DISCRIMINATION POLICY STATEMENT

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

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Mario Solis, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353, TTY 711, fax (916) 324-1869, or via email: mario_solis@dot.ca.gov.

A handwritten signature in blue ink, appearing to read "Malcolm Dougherty".

MALCOLM DOUGHERTY
Acting Director

"Caltrans improves mobility across California"

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Appendix D. Biological Study Area Sensitive Species List

Common Name <i>Scientific Name</i>	Status	General Habitat Description	Habitat Present or Absent	Rationale
NATURAL COMMUNITIES OF SPECIAL CONCERN				
Active Desert Dunes	--	Sand accumulations east of the Pacific Crest from Modoc to Imperial counties. Vegetation on desert dunes varies considerably. Active dunes usually support only sparse herbs and grasses, but partially stabilized or stabilized dunes often will support shrubs, including mesquite and creosote bush.	A	Habitat not present within BSA; sand accumulation not present in the BSA.
BIRDS				
Bald eagle <i>Haliaeetus leucocephalus</i>	FD, SE	Ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mi of water; Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine. Roosts communally in winter.	A	Suitable habitat does not occur within the BSA; water resources and large nesting trees are not present in the BSA; Bald eagle was not observed during field surveys in 2015.
Bendire's thrasher <i>Toxostoma bendirei</i>	CDFW_SSC	Migratory; local spring/summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave Desert; nests in cholla, yucca, paloverde, thorny shrub, or small tree, usually 0.5 to 20 feet above ground.	A	Suitable habitat does not occur within the BSA; succulent shrub, Joshua tree habitats not present in BSA; Bendire's thrasher was not observed during field surveys in 2015.
Brewer's sparrow <i>Spizella breweri</i>	USFWS_BCC	East of Cascade-Sierra Nevada crest, mountains & high valleys of Mojave Desert & mountains at south end of San Joaquin Valley; For nesting, they prefer high sagebrush plains, slopes & valley with Great Basin sagebrush & antelope brush.	HP	Marginal habitat occurs within the BSA; high valleys of Mojave desert are present within the BSA; Brewer's sparrow was not observed during field surveys in 2015; preconstruction surveys will be conducted and avoidance measures will be implemented to construction activities if species is found within or near project area.
Burrowing owl <i>Athene cunicularia</i>	CDFW_SSC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation; Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	HP	Marginal habitat occurs within the BSA; desert scrublands and low-growing vegetation are present in the BSA; burrowing owl was not observed during field surveys in 2015 per NPS suggestion, preconstruction surveys will be conducted and avoidance measures will be implemented to construction activities if species is found within or near project area.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
Cactus Wren <i>Campylorhynchus brunneicapillus</i>	USFWS_BCC	Resident in arid lowland and montane thorn-scrub, suburbs. Nests are domed with tunnel-shaped entrance, made of coarse grass or plant fibers, lined with feathers and placed in a cactus or thorn tree.	A	Suitable habitat does not occur within the BSA; arid lowland and montane thorn-scrub and suburbs are not present in the BSA; Cactus wren was not observed during field surveys in 2015.
California condor <i>Gymnogyps californianus</i>	FE, SE	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude; deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	A	Suitable habitat does not occur within or adjacent to the BSA; expanse of open savannah, grasslands, and foothill chaparral do not occur within the BSA; California condor was not observed during field surveys in 2015.
Calliope Hummingbird <i>Stellula calliope</i>	USFWS_BCC	Open montane forest, mountain meadows, as well as willow and alder thickets. During migration and winter, they may also be found in chaparral, lowland brushy areas, deserts and semi-desert regions.	A	Suitable habitat does not occur within the BSA; open montane forest, mountain meadows, and willow or alder thicket are not present in the BSA; Calliope hummingbird was not observed during field surveys in 2015.
Fox sparrow <i>Passerella iliaca</i>	USFWS_BCC	Dense montane chaparral and brushy understory of other wooded, montane habitats.	A	Suitable habitat does not occur within the BSA; montane chaparral and brushy understory are not present in the BSA; Fox sparrow was not observed during field surveys in 2015.
Golden Eagle <i>Aquila chrysaetos</i>	CDFW_FP	Cover includes secluded cliffs with overhanging ledges or large trees; nests on cliffs and in large trees in open areas; rugged, open habitats with canyons and escarpments used most frequently for nesting; avoidance of developed areas; sea level up to 11500’.	A	Suitable habitat does not occur within the BSA; secluded cliffs with overhanging ledges and large trees and open habitats with canyons and escarpments do not occur within the BSA; Golden eagle was not observed during field surveys in 2015.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
Gray vireo <i>Vireo vicinior</i>	CDFW_SSC	Dry chaparral; west of desert, in chamise-dominated habitat; mountains of Mojave Desert, associated with juniper & Artemisia.	A	Suitable habitat does not occur within the BSA; dry chaparral, chamise, and juniper are not present in the BSA; Gray vireo were not observed during field surveys in 2015.
Green-tailed Towhee <i>Pipilo chlorurus</i>	USFWS_BCC	Dense, shrubby habitat, sometimes with scattered trees or cacti, as well as sagebrush shrub steppe; In winter they move to dry washes, arroyos, mesquite thickets, oak-juniper woodland, creosote bush, and desert grasslands.	A	Suitable habitat does not occur within the BSA; dense shrubby habitat with scattered trees or cacti are not present; Green-tailed towhee was not observed during field surveys in 2015.
Le Conte's thrasher <i>Toxostoma lecontei</i>	CDFW_SSC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats; Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	HP	Marginal habitat is present in the BSA; open desert wash and desert scrub present; Le Conte's thrasher was not observed during field surveys in 2015; preconstruction surveys will be conducted and avoidance measures will be implemented to construction activities if species is found within or near project area.
Loggerhead shrike <i>Lanius ludovicianus</i>	CDFW_SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, & riparian woodlands, desert oases, scrub & washes.	A	Suitable habitat does not occur within the BSA; broken woodlands, savannah, pinyon-juniper, Joshua tree woodland not present; Loggerhead shrike was not observed during field surveys in 2015.
Lucy's warbler <i>Oreothlypis luciae</i>	CDFW_SSC	Primarily along lower Colorado River Valley & the washes & arroyos emptying into it, with occasional occurrences throughout the Sonoran and Mojave deserts; Partial to thickets of mesquite, riparian scrub & even stands of tamarisk.	A	Suitable habitat does not occur within the BSA; thickets of mesquite, riparian scrub and tamarisk are not present in BSA; Lucy's warbler was not observed during field surveys in 2015.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
Olive-sided flycatcher <i>Contopus cooperi</i>	CDFW_SSC	Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain.	A	Suitable habitat does not occur within the BSA; montane conifer forest, meadows, and lakes are not present in the BSA; Olive-sided flycatcher was not observed during field surveys in 2015.
Peregrine falcon <i>Falco peregrinus</i>	USFWS_BCC	Requires protected cliffs and ledges for cover. Breeds near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, mounds. Nest is a scrape on a depression or ledge in an open site. Will nest on human-made structures, and occasionally uses tree or snag cavities or old nests of other raptors.	A	Suitable habitat does not occur within in the BSA; protected cliffs and ledges are not present in the BSA; Peregrine falcon was not observed during field surveys in 2015.
Pinyon Jay <i>Gymnorhinus cyanocephalus</i>	USFWS_BCC	Found in pinyon-juniper woodland, sagebrush, scrub oak, and chaparral communities, and sometimes in pine forests.	A	Suitable habitat does not occur within the BSA; pinyon-juniper woodland, scrub oak, and chaparral are not present; Pinyon jay was observed during field surveys in 2015, but is not expected to commonly occur within the BSA; preconstruction surveys will be conducted for other avian species and if nesting activity is found near project area, avoidance measures will be implemented to construction activities.
Prairie falcon <i>Falco mexicanus</i>	CDFW_WL, USFWS_BCC	Primarily associated with perennial grasslands, savannahs, rangeland, some agriculture fields and desert scrub; requires sheltered cliff edges for cover; usually nests in scrapes on a sheltered ledge of a cliff overlooking a large, open area; sometimes nest on cliff, bluff, or rock outcrop; uses open terrain for foraging.	HP	Suitable habitat occurs within the BSA; rock outcrops are present; Prairie falcon was not observed during field surveys in 2015; preconstruction surveys will be conducted and avoidance measures will be implemented to construction activities if species is found within or near project area.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
Sage Thrasher <i>Oreoscoptes montanus</i>	USFWS_BCC	Expanses of dense sagebrush provide concealment, while bare ground provides foraging opportunities. During migration and winter, they transition to grasslands with scattered shrubs and open pinyon-juniper woodlands.	A	Suitable habitat does not occur within the BSA; dense sagebrush not present; Sage thrasher was not observed during field surveys in 2015.
Short-eared owl <i>Asio flammeus</i>	CDFW_SSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields.	A	Suitable habitat does not occur within the BSA; swamp lands, lowland meadows, and irrigate alfalfa field are not present in the BSA; Short-eared owl was not observed during field surveys in 2015.
Snowy plover <i>Charadrius alexandrinus</i>	USFWS_BCC	Common on sandy marine and estuarine shores; Inland nesting areas occur at the Salton Sea, Mono Lake, and at isolated sites on the shores of alkali lakes in northeastern California.	A	Suitable habitat does not occur within the BSA; alkali lakes are not present in the BSA; Snowy plover was not observed during field surveys in 2015.
Sonoran Yellow Warbler <i>Setophaga petechia sonorana</i>	CDFW_SSC	Summer resident of Colorado River Valley, in riparian deciduous habitat. Below 600 ft elevation; Inhabits cottonwoods and willows, particularly the crown foliage; nests in understory, usually 2-16 ft above ground.	A	Suitable habitat does not occur within the BSA; riparian deciduous habitat is not present in the BSA; Sonoran Yellow warbler was not observed during field surveys in 2015.
Swainson's hawk <i>Buteo swainsoni</i>	ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands with groves or lines of trees.	A	Suitable habitat does not occur within the BSA; grasslands, scattered trees, juniper-sage flats, riparian areas, savannahs, and agriculture lands are not present in the BSA; Swainson's hawk was not observed during field surveys in 2015.
Western grebe <i>Aechmophorus occidentalis</i>	USFWS_BCC	Breed on freshwater lakes and marshes with extensive open water bordered by emergent vegetation. During winter they move to saltwater or brackish bays, estuaries, or sheltered sea coasts and are less frequently found on freshwater lakes or rivers	A	Suitable habitat does not occur within the BSA; no water bodies present within BSA; Western grebe was not observed during field surveys in 2015.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
MAMMALS				
American badger <i>Taxidea taxus</i>	CDFW_SSC	Uncommon, permanent resident found throughout most of the state, except in northern North Coast area; most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils; needs open and uncultivated ground.	A	Suitable habitat does not occur in the BSA; friable soils in shrub and herbaceous open habitats do not occur within the BSA; no observations of American badger individuals or sign were made during wildlife surveys in 2015.
Desert bighorn sheep <i>Ovis canadensis nelsoni</i>	CDFW_FP	Widely distributed from the White Mtns in Mono Co. to the Chocolate Mts in Imperial Co.; Open, rocky, steep areas with available water and herbaceous forage.	HP	Marginal habitat occurs within the BSA; open, rocky steep areas and herbaceous forage are present, however water sources are not present; Desert bighorn sheep extent has been documented adjacent to the BSA (CNDDDB), but Desert bighorn sheep individuals or sign were not observed during field surveys in 2015; Desert bighorn sheep are not expected to travel into the BSA, but avoidance and minimization measures will be implemented per NPS guidance if found within the BSA.
Mohave ground squirrel <i>Xerospermophilus mohavensis</i>	ST	Open desert scrub, alkali scrub & Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.	A	Suitable habitat does not occur within the BSA; marginal desert scrub and disturbed habitat within the BSA would not support this species; Mohave ground squirrel individuals or sign were not observed during field surveys in 2015.
Pallid bat <i>Antrozous pallidus</i>	CDFW_SSC	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting.	A	Suitable habitat does not occur within the BSA: grasslands, shrublands, woodlands, and forests do not occur within the BSA; Pallid bat individuals or sign were not observed during field surveys in 2015.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
Panamint kangaroo rat <i>Dipodomys panamintinus</i>	CDFW_SSC	Found only in the Panamint Range between 4600 & 7000 ft. in arid mountain steppe communities. Found on coarse-textured soils on sloping ground with an overstory of yucca, pinyon pine, juniper & big sage.	A	Suitable habitat not present in the BSA; yucca, pinyon pine, juniper, and big sage overstory are not present; Panamint kangaroo rat individuals or sign were not observed during field surveys in 2015.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SCT	Found in all but subalpine and alpine habitats; prefer mesic habitats; requires caves, mines, tunnels, buildings, or other human-made structures for roosting; gleans from brush or trees or feeds along habitat edges; found from sea level to 9564' in the White Mountains of CA.	HP	Suitable habitat occurs in the BSA; manmade structures (culverts) may provide suitable roosting habitat within the BSA; avoidance measures will be implemented prior to culvert replacement; no observations of bat individuals or sign were made during field surveys in 2015.
REPTILES				
Rosy boa <i>Charina trivirgata</i>	USFS_S	Desert & chaparral from the coast to the Mojave & Colorado deserts; prefers moderate to dense vegetation & rocky cover; Habitats with a mix of brushy cover & rocky soil such as coastal canyons & hillsides, desert canyons, washes & mountains.	HP	Suitable habitat is present within the BSA; rocky cover and desert washes are present, however the highly disturbed habitat would not support this species; Rosy boa was observed in July 2000 in an area several miles north of the project area (CNDDDB), but are not expected to occur in the project area; Rosy boa was not observed during field surveys in 2015.
PLANTS				
Amargosa beardtongue <i>Penstemon fruticiformis</i> var. <i>amargosae</i>	CNPS 1B.3	Mojavean desert scrub; blooming period April- June; 2788'- 4592'.	HP	Mojavean desert scrub is marginally present, but BSA is above elevation extent of this species; not expected to occur in highly disturbed habitat within the BSA, Amargosa beardtongue was not observed during field surveys in 2015.
Black milk-vetch <i>Astragalus funereus</i>	CNPS 1B.2	Mojavean desert scrub, soils sometimes carbonate, gravelly, clay, or rocky; blooming period March- May; 4198'- 6888'.	HP	Suitable habitat does occur within the BSA; marginal mojavean desert scrub is present; one unconfirmed observation was made during field surveys in 2015; preconstruction surveys will be conducted and avoidance measures will be implemented prior to construction activities if species is found within or near project area.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
Booth's evening-primrose <i>Eremothera boothii</i> <i>ssp. Boothii</i>	CNPS 2B.3	Joshua tree woodland, pinyon and juniper woodland; blooming period April- September; 2673'-7872'.	A	Suitable habitat does not occur within the BSA; Joshua tree woodland and pinyon and juniper woodland are not present; Booth's evening primrose was not observed during field surveys in 2015.
Booth's hairy evening-primrose <i>Eremothera boothii</i> <i>ssp. Intermedia</i>	CNPS 2B.3	Great basin scrub, pinyon and juniper woodland, sandy soils; blooming period June; 4920'-7052'.	A	Suitable habitat does not occur within the BSA; Great basin scrub and pinyon and juniper woodland are not present; Booth's hairy evening primrose was not observed during field surveys in 2015.
California satintail <i>Imperata brevifolia</i>	CNPS 2B.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, soils often alkali, riparian scrub, soils mesic; blooming period September-May; 0'-3985'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; BSA is above elevation extent; California satintail was not observed during field surveys in 2015.
Death Valley round-leaved phacelia <i>Phacelia mustelina</i>	CNPS 1B.3	Mojavean desert scrub, pinyon and juniper woodland, carbonate or volcanic, gravelly or rocky soils; blooming period May-July; 2394'-8593'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; closest CNDDDB occurrence is 5 miles east of BSA; Death Valley round-leaved phacelia was not observed during field surveys in 2015.
Death Valley sandpaper-plant <i>Petalonyx thurberi</i> <i>ssp. gilmanii</i>	CNPS 1B.3	Desert dunes, Mojavean desert scrub; blooming period May-September; 852'-4739'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; BSA is above elevation extent; Death Valley sandpaper-plant was not observed during field surveys in 2015.
Gilman's cymopterus <i>Cymopterus gilmanii</i>	CNPS 2B.3	Mojavean desert scrub, soils often carbonate; blooming period April-May; 3001'-6560'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Gilman's cymopterus was not observed during field surveys in 2015.
Gravel milk-vetch <i>Astragalus sabulorum</i>	CNPS 2B.2	Desert dunes, Mojavean desert scrub, Sonoran desert scrub, soils usually sandy, sometimes gravelly, flat washes and roadsides; blooming period February-June; 196'-3050'.	HP	Mojavean desert scrub is marginally present, roadsides are present; not expected to occur within the BSA; BSA is above elevation extent; no Gravel milk-vetch observed during field surveys in 2015.
Hanaupah rock daisy <i>Perityle villosa</i>	CNPS 1B.3	Great basin scrub, pinyon and juniper woodland, rocky, carbonate soils; blooming period June; 5576'-8528'.	A	Suitable habitat does not occur within BSA; great basin scrub, pinyon and juniper woodland are not present; Hanaupah rock daisy was not observed during field surveys in 2015.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
Hoffmann's buckwheat <i>Eriogonum hoffmannii</i> <i>var. hoffmannii</i>	CNPS 1B.3	Mojavean desert scrub, pinyon and juniper woodland, rocky soils; blooming period June- September; 2132'- 5576'.	HP	Mojavean desert scrub is marginally present, and rocky soils are present; not expected to occur in highly disturbed habitat within the BSA; Hoffman's buckwheat was not observed during field surveys in 2015.
Intermontane lupine <i>Lupinus pusillus</i> <i>var. intermontanus</i>	CNPS 2B.3	Great basin scrub, sandy soils; blooming period May-June; 4001'- 6756'.	A	Suitable habitat does not occur within the BSA; great basin scrub is not present; Intermontane lupine was not observed during field surveys in 2015.
Inyo hulsea <i>Hulsea vestita</i> <i>ssp. inyoensis</i>	CNPS 2B.2	Chenopod scrub, Great Basin scrub, Pinyon and juniper woodland, rocky soils; blooming period April-June; 5395'- 9840'.	A	Suitable habitat does not occur within the BSA; chenopod scrub, great basin scrub and pinyon and juniper woodland is not present.
Jointed buckwheat <i>Eriogonum intrafractum</i>	CNPS 1B.3	Mojavean desert scrub, carbonate soils; blooming period May- October; 2000'- 6396'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Jointed buckwheat was not observed during field surveys in 2015.
King's eyelash grass <i>Blepharidachne kingii</i>	CNPS 2B.3	Great basin scrub, carbonate soils; blooming period May; 3493'- 7002'.	A	Suitable habitat does not occur within BSA; great basin scrub is not present; no King's eyelash grass observed during field surveys in 2015.
Knotted rush <i>Juncus nodosus</i>	CNPS 2B.3	Meadows and seeps, mesic soils, marshes and swamps ; blooming period July- September; 98'- 6494'.	A	Suitable habitat does not occur within the BSA; meadows and seeps, marshes and swamps are not present; Knotted rush was not observed during field surveys in 2015.
Limestone beardtongue <i>Penstemon calcareus</i>	CNPS 1B.3	Joshua tree woodland, mojavean desert scrub, pinyon and juniper woodland, carbonate, rocky soils; blooming period April- May; 3493'- 6691'.	HP	Mojavean desert scrub is marginally present, and rocky soils are present; not expected to occur in highly disturbed habitat within the BSA; Limestone beardtongue was not observed during field surveys in 2015.
Limestone monkeyflower <i>Erythranthe calcicola</i>	CNPS 1B.3	Joshua tree woodland, mojavean desert scrub, pinyon and juniper woodland, soils usually carbonate, talus slopes; blooming period April- June; 3001'- 7101'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Limestone monkeyflower was not observed during field surveys in 2015.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
MacDougal's lomatium <i>Lomatium foeniculaceum</i> ssp. <i>Macdougalii</i>	CNPS 2B.2	Chenopod scrub, great basin scrub, lower montane coniferous forest, pinyon and juniper woodland, volcanic soils; blooming period April- June; 3936'- 6773'.	A	Suitable habitat does not occur within the BSA; chenopod scrub, great basin scrub, lower montane coniferous forest, and pinyon and juniper woodland are not present; MacDougal's lomatium was not observed during field surveys in 2015.
Mojave fish-hook cactus <i>Sclerocactus polyancistrus</i>	CNPS 4.2	Great basin scrub, joshua tree woodland, mojavean desert scrub, carbonate soils; blooming period April-July; 2099'- 7609'.	P	Mojavean desert scrub is marginally present; Mojave fish-hook cactus was observed within the BSA during field surveys in April 2015; preconstruction surveys will be conducted and avoidance measures will be implemented prior to construction activities if species is found within or near project area.
Mormon needle grass <i>Stipa arida</i>	CNPS 2B.3	Joshua tree woodland, pinyon and juniper woodland, carbonate soils; blooming period May- July; 1640'- 8429'.	A	Suitable habitat does not occur within BSA; joshua tree woodland, pinyon and juniper woodland are not present; Mormon needle grass was not observed during field surveys in 2015.
Naked-stemmed daisy <i>Enceliopsis nudicaulis</i> var. <i>nudicaulis</i>	CNPS 4.3	Great basin scrub, mojavean desert scrub, volcanic or carbonate soils; blooming period April- May; 3116'- 6560'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Naked-stemmed daisy was not observed during field surveys in 2015.
Panamint daisy <i>Enceliopsis covillei</i>	CNPS 1B.2	Mojavean desert scrub, subalkaline soils; blooming period March- June; 1312'- 6002'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Panamint daisy was not observed during field surveys in 2015.
Panamint dudleya <i>Dudleya saxosa</i> ssp. <i>saxosa</i>	CNPS 1B.3	Mojavean desert scrub, pinyon and juniper woodland, granitic or carbonate, rocky soils; blooming period May- September; 3148'- 7216'.	HP	Mojavean desert scrub is marginally present and rocky soils are present; not expected to occur in highly disturbed habitat within the BSA; Panamint dudleya was not observed during field surveys in 2015.
Panamint Mountains bedstraw <i>Galium hilendiae</i> ssp. <i>carneum</i>	CNPS 1B.3	Mojavean desert scrub, pinyon and juniper woodland, gravelly or rocky soils; blooming period May-Aug; 5412'- 11152'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Panamint mountains bedstraw was not observed during field surveys in 2015.
Panamint Mountains buckwheat <i>Eriogonum microthecum</i> var. <i>panamintense</i>	CNPS 1B.3	Pinyon and juniper woodland, Subalpine coniferous forest, rocky soils; blooming period June-Oct; 6199'- 10660'.	A	Suitable habitat does not occur within the BSA; pinyon and juniper woodland, subalpine coniferous forest are not present; Panamint mountains buckwheat was not observed during field surveys in 2015.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
Panamint Mountains lupine <i>Lupinus magnificus</i> <i>var. magnificus</i>	CNPS 1B.2	Great basin scrub, mojavean desert scrub, pinyon and juniper woodland, upper montane coniferous forest; blooming period April-June; 3280'-8347'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Panamint mountains lupine was not observed during field surveys in 2015.
Pinyon Mesa buckwheat <i>Eriogonum mensicola</i>	CNPS 1B.3	Great Basin scrub, pinyon and juniper woodland, Upper montane coniferous forest, rocky or gravelly soils; blooming period July-Sept; 5904'-9200'.	A	Suitable habitat does not occur within the BSA; great basin scrub, pinyon and juniper woodland, and upper montane coniferous forest are not present; Pinyon mesa buckwheat was not observed during field surveys in 2015.
Pinyon rockcress <i>Boechea dispar</i>	CNPS 2B.3	Joshua tree woodland, mojavean desert scrub, pinyon and juniper woodland, granitic and gravelly soils; blooming period March-June; 3936'-8331'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Pinyon rockcress was not observed during field surveys in 2015.
Polished blazing star <i>Mentzelia polita</i>	CNPS 1B.2	Mojavean desert scrub, carbonate soils; blooming period April-August; 3936'-5182'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Polished blazing star was not observed during field surveys in 2015.
Ripley's aliciella <i>Aliciella ripleyi</i>	CNPS 2B.3	Mojavean desert scrub, carbonate soils; blooming period May-July; 1000'-6396'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Ripley's aliciella was not observed during field surveys in 2015.
Reveal's buckwheat <i>Eriogonum contiguum</i>	CNPS 2B.3	Mojavean scrub, sandy soils; blooming period March-May; 98'-4329'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Reveal's buckwheat was not observed during field surveys in 2015.
Rusby's desert-mallow <i>Sphaeralcea rusbyi</i> <i>var. eremicola</i>	CNPS 1B.2	Joshua tree woodland, mojavean desert scrub; blooming period March-June; 3198'-5395'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Rusby's desert-mallow was not observed during field surveys in 2015.
Shining milk-vetch <i>Astragalus lentiginosus</i> <i>var. micans</i>	CNPS 1B.2	Desert dunes; blooming period March-June; 2525'-3854'.	A	Suitable habitat does not occur within BSA; desert dunes are not present; Shining milk-vetch was not observed during field surveys in 2015.

Appendix D • Biological Study Area Sensitive Species List

Common Name Scientific Name	Status	General Habitat Description	Habitat Present or Absent	Rationale
Shockley's rockcress <i>Boechera shockleyi</i>	CNPS 2B.2	Pinyon and juniper woodland, carbonate or quartzite, rocky or gravelly soils; blooming period May-June; 2870'-7576'.	A	Suitable habitat does not occur within BSA; pinyon and juniper woodland is not present; Shockley's rockcress was not observed during field surveys in 2015.
Utah monkeyflower <i>Mimulus glabratus</i> <i>ssp. utahensis</i>	CNPS 2B.1	Meadows and seeps, pinyon and juniper woodland; blooming period April; 2000'-6560'.	A	Suitable habitat does not occur within the BSA; meadows and seeps, pinyon and juniper woodland not present; Utah monkeyflower was not observed during field surveys in 2015.
Watson's oxytheca <i>Oxytheca watsonii</i>	CNPS 2B.2	Joshua tree woodland, mojavean desert scrub, sandy soils; blooming period May-July; 3936'-6560'.	HP	Mojavean desert scrub is marginally present sandy soils are present; not expected to occur in highly disturbed habitat within the BSA; Watson's oxytheca was not observed during field surveys in 2015.
White bear poppy <i>Arctomecon merriamii</i>	CNPS 2B.2	Chenopod scrub, mojavean desert scrub, rocky soils; blooming period April-May; 1607'-5905'.	HP	Mojavean desert scrub is marginally present; not expected to occur in highly disturbed habitat within the BSA; Poppy was not observed during field surveys in 2015.

Habitat Present (HP) - habitat is, or may be present; the species may be present

Habitat Absent (A) - no habitat present and no further work needed

Explanation of State and Federal Listing Codes

Federal listing codes

Federal Endangered (FE)
 Federal Threatened (FT)
 Federal Proposed (FP)
 Federal Delisted (FD)
 United States Forest Service, Sensitive (USFS_S)
 Bureau of Land Management, Sensitive (BLM_S)
 United States Fish and Wildlife Service Bird of Conservation Concern (USFWS_BCC)

California listing codes

State Endangered (SE)
 State Threatened (ST)
 State Species of Special Concern (SSC)
 State Candidate Threatened (SCT)
 California Dept. of Fish and Wildlife Fully Protected (CDFW_FP)
 California Dept. of Fish and Wildlife Watch List (CDFW_WL)

Appendix E. Avoidance, Minimization, and/or Mitigation Summary

Environmental Commitments Record for EA 09-35320_ / ID 0912000007

Last updated 9/16/2016

Towne Pass Curves
 INY-190-69.2/69.8
 Current Project Phase: 0

EP: Trevor Pratt 760-872-3021
 CL:
 RE:

<i>Permits</i>							
Permit	Agency	Date Submitted	Date Received	Expiration	Requirements Completed Name	Completed Date	Comments
1600 Permit	CDFW						
404 Nationwide	US Army Corps of Engineers						

<i>Commitments</i>							
Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name	Completed Date	Remarks/Due Date

PA&ED

Mitigation for Significant Impacts under CEQA

Cultural 2 – The conceptual mitigation measure for effects to the Eichbaum Toll Road would include development of a historic context for the Eichbaum Toll Road for future use by Death Valley National Park in interpretation and/or recordation and evaluation of the whole Eichbaum Toll Road, however measures will be finalized in a Memorandum of Agreement with the State Historic Preservation Officer.

Pre-Construction

Biology

Biology 1—Preconstruction botanical surveys for sensitive species and focused surveys for black milk-vetch (*Astragalus funereus*), California Native Plant Society 1B.2, and Mojave fish-hook cactus (*Sclerocactus polyancistrus*), California Native Plant Society 4.2, will be conducted. If sensitive species are found in preconstruction surveys, these species will be avoided or transplanted.

Biology 2—Death Valley National Park requested avoidance measures be enacted to reduce impacts to Mojave fish-hook cactus (*Sclerocactus polyancistrus*), which is listed on the California Native Plant Society Inventory of Rare and Endangered Plants as a 4.2 plant (limited distribution). Five individuals were located during surveys and will be transplanted in coordination with the National Park Service Biologist prior to construction.

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Towne Pass Curves

INY-190-69.2/69.8

Current Project Phase: 0

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RE:

Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name Date	Remarks/Due Date
Biology 3- Preconstruction nesting bird surveys will be conducted and avoidance measures will be implemented to construction activities if species are found within or near project area.	NES		RE, Biologist	Notify Environmental 30 days prior to construction		
Biology 4—Preconstruction bat roost surveys will be conducted and avoidance measures will be implemented prior to construction if species is found within or near project area. If the species is found within drainage culvert structures, exclusionary work can be conducted to safely allow roosting bats to exit structures and prevent reentrance prior to completion of construction and permit their return once new structures have been completed. Coordination with the National Park Service Biologist will be implemented in the event this species is found within the project area during preconstruction surveys.	NES	n/a	RE, Biologist	Notify Environmental 30 days prior to construction		
Biology 5 - If prior to, or during construction this species is observed within the project area, avoidance measures will be implemented to reduce impacts to this species. Coordination with the National Park Service Biologist will also be implemented	NES	n/a	RE, Biologist	Notify Environmental 30 days prior to construction		
Biology 8—All equipment and materials will be inspected for the presence of invasive seeds, and equipment will need to be cleaned prior to entering Death Valley National Park to avoid the introduction of invasive plants and will stay in the park until the completion of the project or will be otherwise inspected prior to reentering Death Valley National Park.	Env Doc	n/a	RE, Contractor			

Cultural Resources

Cultural 1 – Environmentally Sensitive Areas will be established to protect and avoid Segments C and F, and the portions of Segment D that are outside the project limits. Environmentally Sensitive Areas will also be established adjacent to the material site where the Eichbaum Toll Road may be present as mapped by archival research but outside the project area.	Section 106	SSP	Cultural, RE	Notify Environmental 30 days prior to construction		
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Construction

Air Quality

Air Quality 1- The construction contractor must comply with Caltrans' 2015 Standard Specifications in Section 14-9.	SSP	SSP	Contractor, RE			
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Towne Pass Curves

INY-190-69.2/69.8

Current Project Phase: 0

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Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name Date	Remarks/Due Date
Air Quality 10- All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust (particulate matter) during transportation.	Env Doc	n/a	RE			
Air Quality 11- Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to decrease particulate matter.	Env Doc	n/a	RE			
Air Quality 12- To the extent feasible, construction traffic will be scheduled and routed to minimize congestion and related air quality impacts caused by idling vehicles during peak travel times.	Env Doc	n/a	RE			
Air Quality 13- Mulch will be installed or vegetation planted as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may need to use controls such as dampened straw.	Env Doc	n/a	RE			
Air Quality 2- Standard Specifications Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.	SSP	SSP	Contractor, RE			
Air Quality 3- Section 18 of the 2015 Standard Specifications is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications described in Section 18 of the Standard Specifications will be met.	SSP	Yes	Contractor, RE			
Air Quality 4—Water or dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emissions or at the right-of-way line depending on local regulations.	Env Doc	n/a	RE			
Air Quality 5—Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.	Env Doc	n/a	RE			
Air Quality 6- A dust control plan will be developed	Env Doc	n/a	RE			

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Towne Pass Curves

INY-190-69.2/69.8

Current Project Phase: 0

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RE:

Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name Date	Remarks/Due Date
documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts.						
Air Quality 7- Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.	Env Doc	n/a	Contractor, RE			
Air Quality 8—ESA (Environmentally Sensitive Area)-like areas or their equivalent will be established near sensitive air receptors. Within these areas, construction activities involving the extended idling of diesel equipment or vehicles will be prohibited, to the extent feasible.	Env Doc	n/a	RE			
Air Quality 9- Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.	Env Doc	n/a	RE			
Biology						
Biology 6—In compliance with the Executive Order on Invasive Species, Executive Order 13112 and guidance from the Federal Highway Administration, the landscaping and erosion control included in the project will not use species listed as invasive.	Env Doc	n/a	RE, Contractor			
Biology 7- In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.	Env Doc	n/a	RE, Contractor			
Biology 9- Caltrans and the contractor will adhere to standard Best Management Practices to prevent the introduction and spread of invasive species, improve the success of re-vegetation associated with regulatory requirements, and reduce the need for long-term use of herbicides. Topsoil, duff, and a native seed erosion control application will be required for the new roadway side slopes to minimize erosion and encourage revegetation of the disturbed soil areas.	NES	NSSP	Contractor, RE			

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RE:

Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name Date	Remarks/Due Date
Hazardous Waste						
Haz Waste 1—The appropriate provisions to address aerially deposited lead concentrations will be implemented.	ISA	SSP	Hazardous Waste Specialist, RE, Contractor			
Haz Waste 2- The appropriate provisions to address the removal of traffic striping and pavement markings will be implemented.	ISA	SSP	Hazardous Waste Specialist, RE, Contractor			
Visual Resources						
Visual 2 - Slope rounding of the top of the cut slopes will be implemented where possible.	Env Doc	n/a	Design Engineer, RE			
Visual 4 - Existing vegetation in spot locations will be protected when possible by excavating around vegetation when recontouring.	Env Doc	n/a	Design Engineer, RE			
Water Quality						
Water Quality 1- Contamination of any surface water would be avoided. The contractor's water quality control plan, which is mandated, would explain in detail how contamination would be avoided. No reclaimed water, if used, would be allowed to mingle with surface flows.	Env Doc	n/a	RE, Contractor			
Water Quality 2- Best management practices as outlined in the National Pollutant Discharge Elimination System Statewide Storm Water Permit and the Waste Discharge Requirements would be used to reduce water pollutants coming from the Caltrans construction project as much as possible.	Env Doc	n/a	Contractor, RE			
Water Quality 3- Construction site pollutants would be controlled by the use of structural devices, such as silt fences and fiber rolls, and non-structural activities such as good housekeeping and construction-related waste management.	Env Doc	n/a	Contractor, RE			
Water Quality 4—A Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP), as applicable, would be prepared by the contractor and implemented during construction to the satisfaction of the resident engineer and according to the regulations of the	Env Doc	n/a	Contractor, RE, Environmental Engineer or Stormwater Coordinator			

Environmental Commitments Record for EA 09-35320_ / ID 0912000007

Last updated 9/16/2016

Towne Pass Curves

INY-190-69.2/69.8

Current Project Phase: 0

EP: Trevor Pratt

760-872-3021

CL:

RE:

Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name Date	Remarks/Due Date
Lahontan Regional Water Quality Control Board. The SWPPP or WPCP would identify sources of sediment and other pollutants that affect the quality of storm water discharges. The plan would also eliminate sediment and other pollutants in storm water as well as non-storm water discharges.						
Mitigation for Significant Impacts under CEQA						
Visual 1—All disturbed areas within the project limits not specifically designed as sight distance roadsides or as recoverable surfaces will be graded to appear as natural as possible. Natural-appearing roadside grading will include broad, random undulations, gently rounded transitions between adjacent slope-faces and varied planar surfaces.	Env Doc	n/a	Design Engineer, RE			
Visual 3—The current roadway will be decommissioned by obliterating old pavement and removing material, ripping up the old roadbed, placing material excavated from the cut area and contouring the material to look natural, and including features (such as random placement of rock and/or vertical mulch) to encourage natural revegetation where possible.	Env Doc	n/a	Design Engineer, RE			
Other						
Parks 1 - Through the use of a Traffic Management Plan, State Route 190 will remain open during construction of the proposed project. Any potential disruptions to tourist travel and activity would be kept to a minimum.	Env Doc	n/a	Traffic Operations, RE, Contractor			

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Appendix F. List of Technical Studies

Biology: Natural Environment Study-Minimal Impacts, June 2016

Water Quality, Air Quality, and Noise Analysis, January 9, 2013

Hazardous Waste Initial Site Assessment, August 10, 2015

Hazardous Waste Revised Initial Site Assessment, June 14, 2016

Noise: Caltrans Preliminary investigation from Caltrans' Division of Research and Innovation. "Traffic Noise generated by Rumble strips" March 5, 2012

http://www.dot.ca.gov/newtech/researchreports/preliminary_investigations/docs/rumble_strip_noise_preliminary_investigation_3-5-12.pdf

Historic Property Survey Report (September 2016)

Archaeological Survey Report (September 2016)

Finding of Effect Report (September 2016)

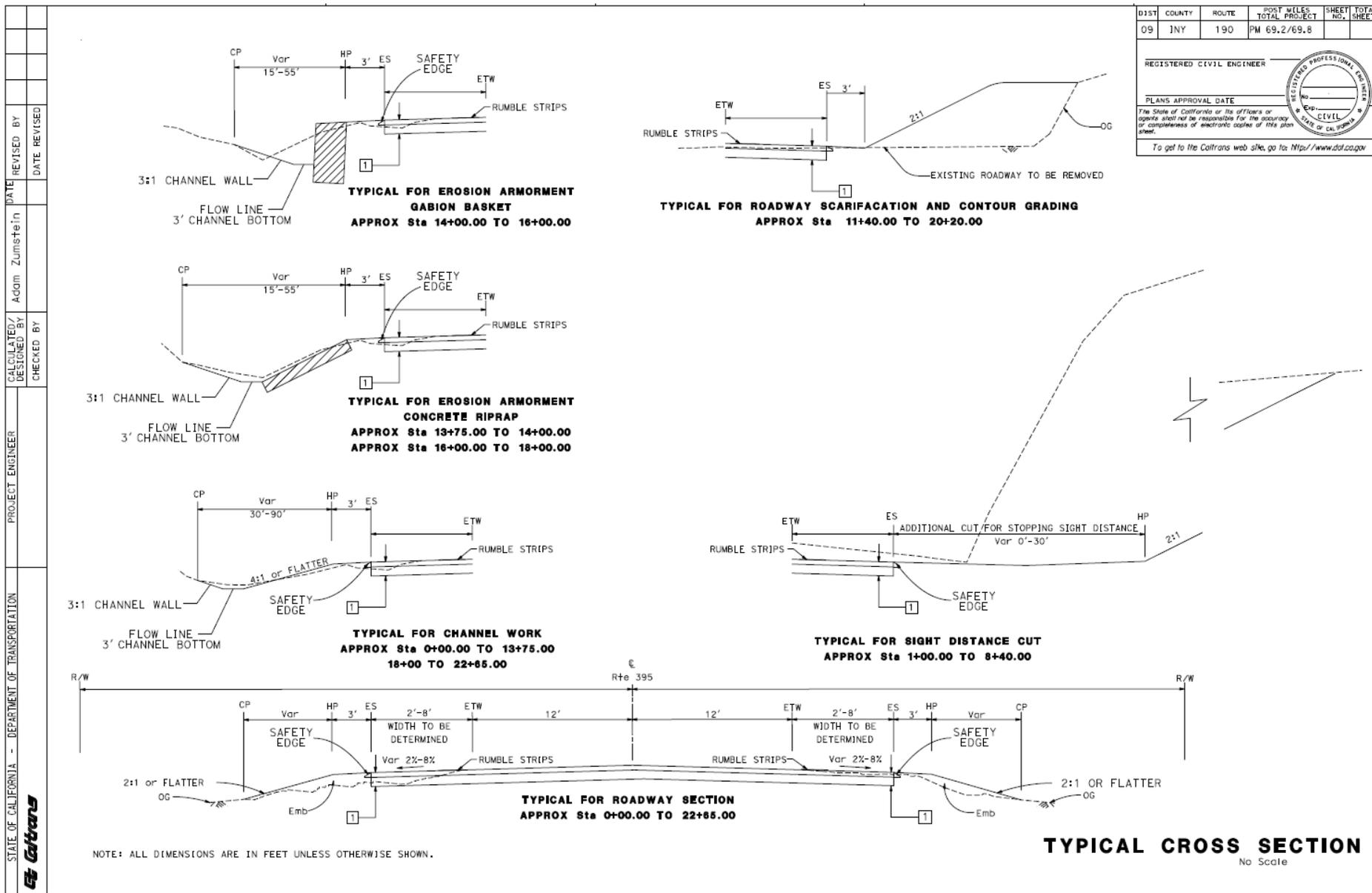
Paleontological Identification Report, October 16, 2015

Hydraulic Recommendation Memorandum, January 8, 2016

Visual Impact Assessment, August 1, 2016

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Appendix G. Typical Cross Section



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
09	INY	190	PM 69.2/69.8		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

Adam Zumstein

REVISIONS

DATE

REVISOR

DATE

DESIGNED BY

CHECKED BY

DATE



DATE PLOTTED: 09-AUG-2016
 09-20-01 TIME PLOTTED: 10:48

TYPICAL CROSS SECTION
 No Scale