State Route 138
(5th Street East to 10th Street East)
Improvements Project

LOS ANGELES COUNTY, CALIFORNIA
District 07 - LA – 138 - PM 44.2/44.7
Sierra Highway – Avenue Q to Avenue R
Project EFIS: 0713000032
EA: 07-23620

Draft Initial Study with Proposed Mitigated Negative
Declaration/Environmental Assessment

Prepared by
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 U.S.C. 327.

May, 2017
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State Route 138 (5th Street East To 10th Street East) Improvement Project
In the City of Palmdale, Los Angeles County
Post Mile 44.2 to 44.7
Sierra Highway – Avenue Q to Avenue R

DRAFT INITIAL STUDY WITH PROPOSED
MITIGATED NEGATIVE DECLARATION
/ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to (State) Division 13, Public Resources Code
(Federal) 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303.

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.

THE STATE OF CALIFORNIA
Department of Transportation
Lead Agency

City of Palmdale
Project Sponsor

May 18, 2017
Date of Approval

Ron Kosinski
Deputy District Director
District 7
California Department of Transportation
NEPA/CEQA Lead Agency

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

Project Description

The California Department of Transportation (Caltrans) District 7, in cooperation with the City of Palmdale as a project sponsor, proposes to widen State Route 138 (Palmdale Boulevard) between 5th Street East and 10th Street East from two lanes to three lanes in each direction, a distance of approximately 0.5 mile. Additionally, the project proposes to widen Sierra Highway from two lanes to three lanes in each direction between Avenue R and a point 500 feet south of Avenue Q, a distance of approximately 0.9 mile.

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 by interested agencies and the public.

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

- The proposed project would have no effect on timberlands, coastal zones, and wild and scenic rivers.
- The proposed project would have a less than significant effect on land use, growth, community cohesion, environmental justice, cultural resources, hydrology and floodplain, water quality and stormwater, geology, paleontology, air quality, and noise.
- With minimization and mitigation measures incorporated, the proposed project would have no significant effect on the following resources: parks and recreation; relocation and property acquisition; traffic and transportation, bicycle and pedestrian facilities; utilities; visual/aesthetics; hazardous waste and materials; and biological resources.

Ron Kosinski  Date
Deputy District Director  District 7
California Department of Transportation  NEPA/CEQA Lead Agency
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Chapter 1  Proposed Project

1.1 Introduction

The proposed project is located within the City of Palmdale (City) in the Antelope Valley on the southwestern border of the Mojave Desert, just north of the San Gabriel Mountains in northeastern Los Angeles County (Figure 1-1). The California Department of Transportation (Caltrans) District 7, in cooperation with the City as the sponsoring agency, proposes to widen State Route (SR) 138 (Palmdale Boulevard) between 5th Street East and 10th Street East in downtown Palmdale from two lanes to three lanes in each direction, a distance of approximately 0.5 mile. Additionally, the project proposes to widen Sierra Highway from two lanes to three lanes in each direction between Avenue R and a point 500 feet south of Avenue Q, a distance of approximately 0.9 mile (Figure 1-2). The project would relieve congestion at the SR-138 (Palmdale Boulevard)/Sierra Highway intersection. The project also would reduce vehicle queuing (traffic congestion) across the Union Pacific Railroad (UPRR) and Metrolink tracks located between 6th Street East and Sierra Highway, improving safety at this location. The project will be funded by Measure R of the Los Angeles County Metropolitan Transportation Authority (Metro).

This project is funded by the Metro-sponsored Measure R Initiative. However, both State and federal environmental reviews are conducted in case federal funds are involved in future, administered by the Federal Highway Administration. Project documentation has been prepared in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act of 1969 (NEPA). Caltrans is the lead agency under NEPA and CEQA. FHWA’s responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being carried out by Caltrans under its assumption of responsibility pursuant to Section 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), codified at 23 United States Code (U.S.C.) 327(a)(2)(A). Effective July 1, 2007, FHWA has assigned, and Caltrans has assumed, all United States Department of Transportation (USDOT) Secretary’s responsibilities under NEPA.

The project is included in the Draft Fiscal Year 2017 Federal Transportation Improvement Program (FTIP) (ID LA0G894) and in the 2016-2040 Regional Transportation Plan (RTP) (ID 1AL04). The project cost is estimated at $18.8 million, which includes $12.2 million for construction, $3 million for improvements associated with the railroad crossings, and $3.6 million for right-of-way (ROW) acquisition and utilities. Project construction is expected to start in early 2019 and be completed in 2020.
Chapter 1 • Proposed Project

Figure 1-1: Project Vicinity Map
Chapter 1 • Proposed Project

Figure 1-2: Project Location Map
1.2 Purpose and Need

1.2.1 Need for the Project

The proposed project is needed because the SR-138 (Palmdale Boulevard) / Sierra Highway intersection presently experiences heavy congestion during both the AM and PM peak periods due to conflicting traffic movements, inadequate signal queue capacity, and railroad pre-emption. Without the proposed project, congestion at this intersection would continue to increase.

1.2.1.1 Capacity, Transportation Demand, and Safety

Existing Facilities

SR-138 (Palmdale Boulevard) is a conventional highway that functions as an east-west urban bypass north of the Los Angeles Basin that connects Interstate 5 (I-5) with Interstate 15 (I-15). Within the Palmdale city limits, SR-138 (Palmdale Boulevard) is functionally classified as an Urban Principal Arterial. SR-138 (Palmdale Boulevard) is the main east-west thoroughfare in Palmdale and a designated truck route, with a posted speed limit of 40 miles per hour (mph).

Between 5th Street East and 6th Street East, SR-138 (Palmdale Boulevard) is a 6-lane divided highway with 12-foot-wide outside lanes, 11-foot-wide first and second through lanes, 10-foot-wide left-turn lanes, and nonstandard 2-foot-wide right shoulders. Between 6th Street East and Sierra Highway, SR-138 (Palmdale Boulevard) is a 4-lane divided highway with standard 12-foot-wide lanes and nonstandard 5-foot-wide right shoulders.

Between Sierra Highway and 10th Street East, SR-138 (Palmdale Boulevard) is a 4-lane divided highway with standard 12-foot-wide through lanes, nonstandard 11-foot-wide left-turn lanes, and standard 10-foot-wide right shoulders that are used for on-street parking. On-street parking is allowed on both sides of SR-138 (Palmdale Boulevard) east of Sierra Highway. There are no left shoulders along SR-138 (Palmdale Boulevard) within the project limits. East of Sierra Highway, SR-138 (Palmdale Boulevard) serves a highly concentrated general commercial area.

Sierra Highway is a major regional north-south transportation corridor that serves as a principal north-south arterial in Palmdale, with a posted speed limit of 55 mph. The existing highway consists of 2 lanes in each direction with a center median. In some locations, the center median has raised curbs; however, the center median is striped within the project limits.

A 2-track UPRR and Metrolink line crosses SR-138 (Palmdale Boulevard) between 6th Street East and Sierra Highway (approximately 180 feet east of 6th Street East and 200 feet west of Sierra Highway). The crossing is equipped with an automatic gate arm, 2 curb-mounted flashing light signals, 2 median-mounted flashing light signals, railroad advanced warning signage, and pavement markings.
Class II bicycle lanes exist along SR-138 (Palmdale Boulevard) between 6th Street East and Sierra Highway, along 5th Street East south of SR-138 (Palmdale Boulevard), and along 6th Street East north of SR-138 (Palmdale Boulevard). A Class I bicycle path also runs along the west side of Sierra Highway. Sierra Highway is designated as a Los Angeles County Class I Bikeway and as a Palmdale Adopted Master Plan Bike Route.

**Existing Capacity and Level of Service**

Vehicle volumes are expected to increase substantially from the existing year 2014 to the design year 2040. Truck traffic is expected to be approximately 2 percent of Annual Average Daily Traffic (AADT). As a conservative approach, the Traffic Study prepared for this project utilized growth factors to develop design year No Build (2040) forecast volumes. The applied growth rate was 2.125 percent per year between the years 2014 and 2040. After developing the No Build future forecast volumes, minor adjustments were made to balance the intersection volumes. The final adjusted peak hour volumes are presented in Table 1-1. Existing (2014) volumes and adjusted future design year (2040) volumes for the morning and evening peak-hours in the project area are shown in Table 1-1.

**Table 1-1: Existing and Future No-Build Design Year Vehicle Volumes**

<table>
<thead>
<tr>
<th>Location</th>
<th>Peak-Hour Vehicle Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM Peak Hour</td>
</tr>
<tr>
<td></td>
<td>2014</td>
</tr>
<tr>
<td>SR-138 (Palmdale Boulevard)</td>
<td></td>
</tr>
<tr>
<td>West of 5th Street East</td>
<td>1,601</td>
</tr>
<tr>
<td>5th Street East to 6th Street East</td>
<td>1,526</td>
</tr>
<tr>
<td>6th Street East to Sierra Highway</td>
<td>1,644</td>
</tr>
<tr>
<td>Sierra Highway to 9th Street East</td>
<td>1,530</td>
</tr>
<tr>
<td>9th Street East to 10th Street East</td>
<td>1,497</td>
</tr>
<tr>
<td>East of 10th Street East</td>
<td>1,492</td>
</tr>
<tr>
<td>Sierra Highway</td>
<td></td>
</tr>
<tr>
<td>North of SR-138</td>
<td>740</td>
</tr>
<tr>
<td>South of SR-138</td>
<td>598</td>
</tr>
</tbody>
</table>

Notes: AM – morning, PM – evening. The peak period extends from 6:00 AM to 9:00 AM and from 3:00 PM to 7:00 PM. The peak 60-minute time slices within these peak periods was selected for analysis.


The degree of traffic congestion was analyzed using the Level of Service (LOS) procedures presented in the *Highway Capacity Manual* (Transportation Research Board, 2000). LOS is a measure of the quality of traffic flow. LOS definitions are provided in Table 1-2.
Table 1-2: Signalized Intersection Level of Service and Delay

<table>
<thead>
<tr>
<th>LOS</th>
<th>Interpretation</th>
<th>Average Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Uncongested operations; all vehicles clear in a single cycle.</td>
<td>0.0-10.0</td>
</tr>
<tr>
<td>B</td>
<td>Uncongested operations; all vehicles clear in a single cycle.</td>
<td>10.1-20.0</td>
</tr>
<tr>
<td>C</td>
<td>Light congestion; occasional backups on critical approaches.</td>
<td>20.1-35.0</td>
</tr>
<tr>
<td>D</td>
<td>Congestion on critical approaches, but intersection functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing lines formed.</td>
<td>35.1-55.0</td>
</tr>
<tr>
<td>E</td>
<td>Severe congestion with some long-standing lines on critical approaches. Blockage of intersection may occur if traffic signal does not provide protected turning movements.</td>
<td>55.1-80.0</td>
</tr>
<tr>
<td>F</td>
<td>Total breakdown with stop-and-go operations.</td>
<td>&gt;80.0</td>
</tr>
</tbody>
</table>

Notes: LOS – Level of Service. Average Delay is measured in seconds.


The existing (2014) and design year (2040) No Build Alternative intersection LOS at the study intersections are shown in Table 1-3. According to Caltrans and the City, the acceptable LOS is D for signalized and unsignalized intersections. Under existing conditions, intersections generally operate at acceptable LOS during the morning and evening peak periods.

Table 1-3: Existing and Future No-Build Alternative Peak-Hour Intersection Operations

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS</td>
<td>Delay (Sec)</td>
<td>LOS</td>
</tr>
<tr>
<td></td>
<td>AM</td>
<td>PM</td>
<td>AM</td>
</tr>
<tr>
<td>5th Street East</td>
<td>D</td>
<td>C</td>
<td>37.3</td>
</tr>
<tr>
<td>6th Street East</td>
<td>C</td>
<td>B</td>
<td>21.6</td>
</tr>
<tr>
<td>Sierra Highway</td>
<td>C</td>
<td>C</td>
<td>21.6</td>
</tr>
<tr>
<td>9th Street East</td>
<td>D</td>
<td>B</td>
<td>36.4</td>
</tr>
<tr>
<td>10th Street East</td>
<td>C</td>
<td>C</td>
<td>24.8</td>
</tr>
</tbody>
</table>

Notes: LOS – Level of Service; sec – seconds; AM – morning; PM - evening.
See Table 1-2 for LOS definitions.


As shown in Tables 1-1 and 1-3, increasing traffic volumes between 2014 and 2040 are projected to generally lower traffic LOS at two of the five intersections in the project area. During the morning peak commute hour, the SR-138 (Palmdale Boulevard) intersection with Sierra Highway is expected to operate at LOS D in 2040.
under the No Build Alternative scenario. The SR-138 (Palmdale Boulevard) intersections with Sierra Highway and 10th Street East are projected to operate at LOS F during the evening peak hour in 2040 under the No Build Alternative scenario. The anticipated severe level of congestion projected in 2040 for this primary access route through downtown Palmdale would be unacceptable.

The Synchro software used in the traffic analysis allows for the evaluation of closely spaced intersections as a corridor. A bottleneck at one intersection therefore constrains downstream traffic volumes, which in turn affects the computation of average delay. The year 2040 No Build analysis clearly reflects this interconnected relationship. The intersection operation at Palmdale Boulevard and Sierra Highway is reported as LOS F during the PM peak hour, for example. Downstream intersections at 6th Street East (westbound) and 9th Street East (eastbound) operate at LOS B because traffic throughput is constrained at Sierra Highway.

**Accident History and Analysis**

The Caltrans Traffic Accident Surveillance and Analysis System (TASAS) data for the last 3-year period (April 1, 2012 to March 31, 2015) were reviewed. The total rate of accidents on SR-138 (Palmdale Boulevard) from 2012 to 2015 was 4.2 times the statewide average for similar highway sections. The data includes one fatal accident and 45 injury accidents. The fatal accident occurred at night and was the result of a pedestrian, under the influence, crossing SR-138 midblock between 9th Street East and 10th Street East. The pedestrian was struck by a vehicle traveling in the westbound outside lane. Of the accidents recorded, 28 (26.2 percent) occurred due to speeding, 14 (13.1 percent) due to failure to yield, and 10 (9.3 percent) due to improper turns. The remaining occurred due to other violations (26.2 percent), driving under the influence (9.3 percent), following too closely (8.4 percent), improper driving (0.9 percent), or unknown reasons (6.5 percent). According to the TASAS Selective Accident Retrieval TSAR Accident Summary, most of the accidents were rear ends (49.5 percent) and broadsides (27.1 percent). With the projected increases in traffic congestion in the project area under the No Build Alternative, the accident rate is expected to increase. Accident rates are shown in Table 1-4.

**1.2.1.2 Existing Roadway Deficiencies**

According to Caltrans’ *Highway Design Manual*, the minimum lane width on conventional multi-lane highways in urban areas with posted speed limits less than or equal to 40 mph is 12 feet if the Average Annual Daily Truck Traffic (AADTT) is 250 or more per lane. The forecasted traffic counts show that AADTT for 2040 on SR-138 (Palmdale Boulevard) in the project vicinity is expected to exceed 250 trucks per lane; therefore, 12-foot-wide lanes are required. Between 5th Street East and 6th Street East, the existing left-turn lanes are 10 feet wide and the first and second through lanes are 11 feet wide. Between Sierra Highway and 10th Street East, the existing left-turn lanes are 11 feet wide.
According to the *Highway Design Manual*, conventional highways in urban areas with posted speed limits less than or equal to 45 mph and curbed medians require a paved shoulder width of 8 feet for the right shoulder. Between 5th Street East and 6th Street East, the existing right shoulders are 2 feet wide. Between 6th Street East and Sierra Highway, the existing right shoulders are 5 feet wide.

Along SR-138 (Palmdale Boulevard), between 5th Street East and 10th Street East, existing curb ramps, driveways, and island passageways do not meet the standards outlined in the *Design Information Bulletin (DIB) 82-05 Pedestrian Accessibility Guidelines for Highway Projects*. Nonstandard features include the absence of truncated domes at curb ramps, as well as nonstandard clear widths, grades, cross slopes, and ramp slopes.

### 1.2.1.3 Population Growth and Transportation Demand

The Antelope Valley has experienced substantial population growth in recent years (Table 1-5). This growth is expected to continue for at least the next 2 decades. The population of the largest Antelope Valley communities is projected to grow at a steady rate over the next 30 years, from approximately 344,000 in 2010 to nearly 700,000 in 2040 – an increase of 103 percent or an average of 2.5 percent per year. This trend is fueled by the region’s proximity to the major metropolitan areas of Los Angeles and the Inland Empire, and by the availability of undeveloped land and affordable housing.
Table 1-5: Antelope Valley Population Growth by Community

<table>
<thead>
<tr>
<th>City/Community</th>
<th>Population Growth</th>
<th>Growth Rate 2010-2040 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Past 2000</td>
<td>2010</td>
</tr>
<tr>
<td>Palmdale</td>
<td>118,718</td>
<td>156,633</td>
</tr>
<tr>
<td>Sun Village</td>
<td>9,375</td>
<td>11,565</td>
</tr>
<tr>
<td>Lancaster</td>
<td>116,670</td>
<td>152,750</td>
</tr>
<tr>
<td>Lake Los Angeles</td>
<td>11,523</td>
<td>12,328</td>
</tr>
<tr>
<td>Quartz Hill</td>
<td>9,890</td>
<td>10,912</td>
</tr>
<tr>
<td>Totals</td>
<td>266,176</td>
<td>344,188</td>
</tr>
<tr>
<td>California</td>
<td>33,871,648</td>
<td>37,253,956</td>
</tr>
</tbody>
</table>

Notes:
* Growth rate extrapolated based on 2000 to 2010 rate for Sun Village.
** Unincorporated community population estimates based on a Greater Antelope Valley Economic Alliance forecasted growth rate of 30 percent between 2020 and 2035.

Sources: U.S. Census 2010; Southern California Association of Governments 2008 and 2012; California Department of Finance 2013.

As shown in Table 1-6, population growth has been accompanied by a generally upward growth trend in employment. Although employment steeply declined during the economic downturn since 2007, according to Southern California Association of Governments (SCAG), the growth trend is expected to resume, with the total jobs in the valley projected to reach almost 120,571 by 2040, an increase of 56 percent from the 2010 total employment figure.

Table 1-6: Antelope Valley Employment Growth by Community

<table>
<thead>
<tr>
<th>City/Community</th>
<th>Employment Growth Past 2000</th>
<th>2010</th>
<th>Projected 2020</th>
<th>2040</th>
<th>Projected Growth 2010 to 2040 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lancaster</td>
<td>45,870</td>
<td>46,721</td>
<td>59,291</td>
<td>73,463</td>
<td>57</td>
</tr>
<tr>
<td>Palmdale</td>
<td>33,150</td>
<td>30,589</td>
<td>40,047</td>
<td>47,108</td>
<td>54</td>
</tr>
<tr>
<td>Totals</td>
<td>79,020</td>
<td>77,310</td>
<td>99,338</td>
<td>120,571</td>
<td>56</td>
</tr>
</tbody>
</table>

Sources: U.S. Census 2010; Southern California Association of Governments 2008 and 2012; California Department of Finance 2013.

Concurrent with the migration of large numbers of people to the Antelope Valley, the area has experienced market expansion, as evidenced by increases in jobs and payroll numbers. As incomes expand in this high-growth area, firms offering retail goods, consumer services, banking, and other population-serving products find it in their economic interest to open additional facilities. The region’s vast tracts of undeveloped industrial land and growing pool of skilled workers are attractive to
southern California production and distribution firms. The increasing population and employment outlook will put additional pressure on an already strained road network.

SR-138 (Palmdale Boulevard) is the main east-west arterial road through downtown Palmdale, providing access from the downtown to SR-14. The Palmdale Transportation Center, with its MetroRail station, is located on Sierra Highway about 0.8 mile northwest of the project area. The proposed project would be one of several transportation improvement projects in the vicinity of the project area, including capacity enhancements at SR-138 (Palmdale Boulevard) and SR-14, capacity enhancements on 10th Street East, and restriping and widening of other portions of SR-138 (Palmdale Boulevard). The planned High Desert Corridor would run parallel to SR-138 (Palmdale Boulevard) to the north, providing an alternative route to SR-138 (Palmdale Boulevard) that would divert regional traffic, thus relieving congestion on SR-138 (Palmdale Boulevard).

The future California High-Speed Train line is expected to connect to the MetroRail system at the Palmdale Transportation Center, which would be relocated 800 feet south of its current location. The western terminus of the proposed high-speed rail component of the High Desert Corridor would also be at the Palmdale Transportation Center. SR-138 (Palmdale Boulevard) would provide access to the downtown Palmdale area from the Palmdale Transportation Center.

1.2.1.4 Financial Analysis

The Traffic and Intersection Control Evaluation Study Report (Parsons, 2016) analyzes the cost-to-benefit ratio of the Build Alternative and the No Build Alternative. The preliminary cost estimate for the Build Alternative is $18.8 million, excluding project engineering and administration. Benefits were computed based on travel time savings of the Build Alternative compared with the No Build Alternative. Intersection vehicle delay was computed for the morning and afternoon peak hours for the SR-138 (Palmdale Boulevard) widening project opening (2020) and design (2040) years. Based on the resulting annual cost of delay for the Build Alternative and No Build Alternative and the life-cycle/investment analysis, it can be concluded that the proposed Build Alternative would:

- Cost more to construct and about the same to operate as the No Build Alternative
- Incur less delay to motorists and goods movement
- Reduce life-cycle public and private costs by approximately $27.3 million.

1.2.2 Purpose of the Project

The primary purpose of the proposed project is to relieve traffic congestion and improve traffic operations at the SR-138 (Palmdale Boulevard) / Sierra Highway intersection by increasing the traffic capacities along adjacent segments of these two roadways and by improving railroad preemption. Improving railroad preemption would reduce vehicle queuing and improve traffic safety at the SR-138 (Palmdale Boulevard) at-grade UPRR and Metrolink crossing between 6th Street East and Sierra Highway. The project also would improve safety along SR-138 (Palmdale Boulevard)
and Sierra Highway by increasing the number of travel lanes, adding left-turn and right-turn pockets where needed, widening the shoulders, and adding bicycle lanes. The project would be designed to implement the principles of “Complete Streets.” The project would better accommodate anticipated traffic increases, thereby minimizing delays and potential safety hazards. The project is being proposed in the context of several other improvements to local roads and highways that, together, are intended to substantially improve local traffic conditions.

1.3 Independent Utility and Logical Termini

FHWA regulations (23 Code of Federal Regulations [CFR] 771.111[f]) require that (1) projects have logical limits and be long enough that the environmental analysis has a sufficiently broad scope; (2) projects are usable and a reasonable use of funds even if no additional transportation improvements in the area are made (this is known as “independent utility”); and (3) approval of a project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. As discussed below, the proposed project would comply with these requirements.

1.3.1 Logical Termini

To meet the FHWA criteria for logical termini, a project must have (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts associated with a proposed improvement.

The focus of the project is improving traffic operations through the SR-138 (Palmdale Boulevard)/Sierra Highway intersection. The eastern terminus of the project is 10th Street East, and the western terminus of the project is 5th Street East. Encompassing two blocks of SR-138 (Palmdale Boulevard) on either side of its intersection with Sierra Highway allows adequate distance for integrating the traffic improvements with existing facilities. A longer project segment on SR-138 (Palmdale Boulevard) is not needed to achieve the project’s purpose, while a shorter project segment could be inadequate to ensure the smooth transitions necessary for the project to operate as anticipated.

The northern terminus of the proposed project is a point approximately 500 feet south of Avenue Q, approximately 0.4 mile north of SR-138 (Palmdale Boulevard) on Sierra Highway. The southern terminus of the proposed project is Avenue R, approximately 0.5 mile south of SR-138 (Palmdale Boulevard). The northern and southern termini were selected to assure a sufficient length of alignment to integrate the proposed traffic improvements with existing facilities and avoid any abrupt transitions.

Based on the above discussion, the project meets the criteria for logical termini.

1.3.2 Independent Utility

The proposed project would have independent utility. The proposed improvements would enhance the usefulness of the existing roadways and traffic facilities. The proposed upgrades to the existing facilities would be a cost-effective and reasonable use of existing funds, because the existing traffic congestion adversely affects the
local economy, impedes the ability of emergency services to access the area, and reduces the quality of life for local residents. The proposed project would benefit the local community even if additional improvements are not made to SR-138 (Palmdale Boulevard) or Sierra Highway in the future.

1.3.3 Restriction of Consideration of Alternatives

Approval of the proposed action would not restrict consideration of alternatives for this or other reasonably foreseeable transportation improvements. The proposed project is being developed in coordination with the local and regional transportation authorities in the area. Continuing coordination will avoid potential conflicts with alternatives for this project and for other planned area transportation improvements.

1.4 Project Description

This section describes the proposed action and the design alternatives that were developed by a multidisciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts.

No stand-alone Transportation System Management (TSM) or Transportation Demand Management (TDM) alternative was identified for evaluation herein because such an alternative would not, by itself, achieve the purposes of or satisfy the need for the project. TSM encourages public and private transit, ridesharing programs, and bicycle and pedestrian improvements. Although TSM measures alone could not satisfy the purpose and need of the project, the Build Alternative for this project include features to support public transit and includes bicycle and pedestrian improvements in accordance with the TSM principles.

1.5 Alternatives

1.5.1 Proposed Build Alternative

1.5.1.1 Roadway Improvements

The Build Alternative would alleviate traffic congestion and enhance traffic operations by increasing roadway and intersection capacity. The Build Alternative (Figures 1-3) would increase traffic capacity by widening SR-138 (Palmdale Boulevard) between 5th Street East and 10th Street East from two lanes to three lanes in each direction and widening Sierra Highway from two lanes to three lanes in each direction between Avenue R and a point 500 feet south of Avenue Q.
Figure 1-3: Build Alternative Design Features
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Between 5th Street East and 6th Street East, the design proposes three lanes in each direction along SR-138 (Palmdale Boulevard). The design proposes 11-foot-wide lanes for the first and second through lanes in the eastbound direction between Station 113+09 and 116+60 and in the westbound direction between Station 113+09 and 115+90. Standard 12-foot-wide lanes are proposed for the outside lanes between 5th and 6th Street East. Roadway widening is proposed to provide 5-foot-wide right shoulders, which would be used as Class II bicycle lanes. Six-foot-wide sidewalks are proposed on both sides of SR-138 (Palmdale Boulevard) between 5th Street East and 6th Street East. Additionally, the westbound and eastbound left-turn pockets would be maintained. An 11-foot-wide lane is proposed for the westbound left turn pocket and a 12-foot-wide lane is proposed for the eastbound left turn pocket.

Between 6th Street East and Sierra Highway, roadway widening is proposed to provide three standard 12-foot-wide lanes in each direction, 8-foot-wide right shoulders, 2-foot-wide left shoulders, and 10-foot-wide sidewalks. The right shoulders would be used as Class II bicycle lanes. The design proposes to add a right-turn pocket along westbound SR-138 (Palmdale Boulevard) at the 6th Street East intersection, as well as double left-turn pockets along eastbound SR-138 (Palmdale Boulevard) at the Sierra Highway intersection. The right-turn pocket along eastbound SR-138 (Palmdale Boulevard) at the Sierra Highway intersection would be maintained.

Between Sierra Highway and 10th Street East, roadway widening is proposed to provide two nonstandard 11-foot-wide lanes and a standard 12-foot-wide outside lane in each direction with nonstandard 2-foot-wide right shoulders. Seven-foot-wide sidewalks are proposed on both sides of SR-138 (Palmdale Boulevard) between Sierra Highway and 10th Street East. Additionally, the westbound and eastbound left-turn pockets would be maintained.

Sierra Highway would be widened to three lanes in each direction between Avenue R and a point 500 feet south of Avenue Q. Double left-turn lanes and a right-turn lane are proposed in the northbound and southbound directions at the Sierra Highway and SR-138 (Palmdale Boulevard) intersection. The existing on-street parking along northbound Sierra Highway between SR-138 (Palmdale Boulevard) and Avenue Q6 would be maintained. Additionally, the project proposes to extend the existing Class I bicycle path, which runs along the west side of Sierra Highway, southerly to provide connectivity to Avenue R. The proposed detail site layout is provided in Appendix I at the end of this document.

The project would substantially improve the 2040 intersection level of service at the SR-138 (Palmdale Boulevard) intersection with Sierra Highway during the evening peak hour from LOS F to B. The project also would improve the evening peak-hour LOS at the SR-138 (Palmdale Boulevard) intersection with 10th Street East from LOS F to D. The peak-hour LOS and delay times are shown in Table 1-7. The increased roadway and intersection capacity are also expected to reduce the accident rate within the project area. The proposed improvements at the railroad crossing, as well as the reduction in congestion at the SR-138 (Palmdale Boulevard) intersection with Sierra Highway, would reduce the incidences of traffic queuing on the railroad tracks.
Table 1-7: Future No-Build and Build Alternative Peak-Hour Intersection Operations

<table>
<thead>
<tr>
<th>SR-138 (Palmdale Boulevard) Intersection with:</th>
<th>Peak-Hour Intersection Operations</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Future No Build Alternative (2040)</td>
<td>Future Build Alternative (2040)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LOS</td>
<td>Delay (Sec)</td>
<td>LOS</td>
<td>Delay (Sec)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AM</td>
<td>PM</td>
<td>AM</td>
<td>PM</td>
<td>AM</td>
</tr>
<tr>
<td>5th Street East</td>
<td>C</td>
<td>C</td>
<td>30.3</td>
<td>23.8</td>
<td>C</td>
</tr>
<tr>
<td>6th Street East</td>
<td>B</td>
<td>B</td>
<td>14.8</td>
<td>19.6</td>
<td>B</td>
</tr>
<tr>
<td>Sierra Highway</td>
<td>D</td>
<td>F</td>
<td>36.3</td>
<td>82.5</td>
<td>B</td>
</tr>
<tr>
<td>9th Street East</td>
<td>B</td>
<td>B</td>
<td>17.0</td>
<td>16.8</td>
<td>C</td>
</tr>
<tr>
<td>10th Street East</td>
<td>C</td>
<td>F</td>
<td>20.6</td>
<td>91.1</td>
<td>C</td>
</tr>
</tbody>
</table>

Notes: LOS – Level of Service; sec – seconds; AM – morning; PM - evening. See Table 1-2 for LOS definitions.


The traffic and railroad signal controllers would be upgraded and interconnected to provide an advanced preemption and special sequential signal phasing. The advanced preemption would allow a longer period for traffic to clear the crossing in advance of an approaching train. The special sequential signal phasing would allow northbound and southbound through movements during railroad pre-emption. These features would eliminate traffic queuing on the railroad tracks and thus improve traffic safety. The project would also install four-quadrant flashing lights and pedestrian gates on the approaches to each of the sidewalks that cross the railroad track to improve the safety of pedestrians and bicyclists.

The project also would enhance safety by improving the following existing features:

- Traffic signal operations at the railroad crossing would be upgraded from the existing condition of “all red flash” operation to “special sequential signal phasing.” This upgrade would reduce vehicle queuing for signal phases that do not conflict with the railroad crossing and eliminate the potential for accidents to occur due to conflicting vehicular movements during all red flash.

- Four-quadrant flashing lights and pedestrian gates would be installed on each approach of the sidewalks crossing the railroad to improve safety of the pedestrian pathways.

- The median islands at the railroad crossing approaches would be widened and heightened to provide safe channelization to be consistent with the Manual on Uniform Traffic Control Devices (MUTCD) and California Public Utility Commission’s (CPUC) General Order (GO) 75-D.

Implementation of the Build Alternative would require two full parcel acquisitions. The two full parcel acquisitions would be a Domino’s Pizza (602 E Palmdale Boulevard) and a Soya restaurant (38404 6th St East); these buildings would be
demolished. A roadway easement from UPRR would be required for widening SR-138 (Palmdale Boulevard) between 6th Street East and Sierra Highway and for widening Sierra Highway just north of Avenue R. Several partial acquisitions and temporary construction easements (TCEs) would also be required along SR-138 (Palmdale Boulevard) and Sierra Highway.

1.5.1.2 Design Standards

Roadway facilities within Caltrans ROW would be designed according to the Highway Design Manual (Caltrans, 2015), except for the nonstandard design features documented by the Design Exception Fact Sheets.

1.5.1.3 Design Exceptions

To minimize ROW impacts, nonstandard features are proposed, as described below:

- **Mandatory Exception Feature #1:** SR-138 (Palmdale Boulevard) through downtown Palmdale is required to have 12-foot-wide lanes, based on forecasted traffic counts; however, widening SR-138 (Palmdale Boulevard) sufficiently to accommodate 12-foot-wide through lanes would require extensive parcel acquisitions and result in significant business displacement and community disruption. Accordingly, 11-foot wide lanes are proposed for the westbound left-turn lane and first and second through lanes (Station 113+09 to 116+60 in the eastbound direction and 113+09 to 115+90 in the westbound direction) between 5th and 6th Street East. Additionally, 11-foot wide lanes are proposed for the left turn lanes and first and second through lanes between Sierra Highway and 10th Street East.

- **Mandatory Exception Feature #2:** Shoulder widths for conventional highways in urban areas are required to be 8 feet for the right shoulder. Five-foot wide right shoulders are proposed along SR-138 (Palmdale Boulevard) between 5th Street East and 6th Street East, and 2-foot wide right shoulders are proposed between Sierra Highway and 10th Street East.

- **Mandatory Exception Feature #3:** A nonstandard corner sight distance exists at the SR-138 (Palmdale Boulevard) and 9th Street East signalized intersections due to the location of a building directly adjacent to the sidewalk. The Build Alternative proposes to maintain the existing building and nonstandard corner sight distance.

- **Advisory Exception Feature #1:** A nonstandard sidewalk width is proposed at five spot locations along SR-138 (Palmdale Boulevard) between 5th Street East and 10th Street East due to the location of buildings directly adjacent to the sidewalk. The standard sidewalk width should be 8 feet between a curb and a building. The minimum proposed sidewalk width is 6 feet, not including the width of the curb.

- **Advisory Exception Feature #2:** A 4-foot-wide approach lane for bicycle use between the right-turn lane and through lane is not provided at the Sierra Highway northbound and southbound approaches to SR-138 (Palmdale Boulevard).
• **Advisory Exception Feature #3**: A nonstandard minimum profile grade of 0.20 percent exists along SR-138 (Palmdale Boulevard) at the railroad crossing between 6th Street East and Sierra Highway. The Build Alternative proposes to maintain the existing profile of SR-138 (Palmdale Boulevard), the UPRR tracks, and the Metrolink tracks, thus maintaining the nonstandard minimum profile grade.

• **Advisory Exception Feature #4**: A nonstandard vertical curve length exists at four locations along SR-138 (Palmdale Boulevard). All existing nonstandard vertical curve lengths meet the minimum stopping sight distance requirements. The Build Alternative proposes to maintain the existing profile of SR-138 (Palmdale Boulevard), thus maintaining the existing nonstandard vertical curve lengths.

### 1.5.1.4 Estimated Cost

The preliminary cost estimate for the proposed Build Alternative is summarized in Table 1-8.

**Table 1-8: Build Alternative Cost Estimate***

<table>
<thead>
<tr>
<th>Project Element</th>
<th>Cost ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway</td>
<td>11.9</td>
</tr>
<tr>
<td>Structure</td>
<td>0.3</td>
</tr>
<tr>
<td>Right-of-Way</td>
<td>3.6</td>
</tr>
<tr>
<td>Railroad</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>18.8</td>
</tr>
</tbody>
</table>

*Numbers rounded; $M – millions of dollars

Source: Design Exception Fact Sheets, March, 2017.

### 1.5.1.5 Construction Schedule

An approximately 15-month construction period is scheduled to commence in late 2019 and be complete by early 2020. The proposed project would be constructed in phases, as presented in Table 1-9.

**Table 1-9: Construction Schedule**

<table>
<thead>
<tr>
<th>Construction Phase</th>
<th>Duration (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grubbing, Clearing, Demolition</td>
<td>1</td>
</tr>
<tr>
<td>Grading and Excavation</td>
<td>6</td>
</tr>
<tr>
<td>Drainage, Utilities, Subgrade</td>
<td>5</td>
</tr>
<tr>
<td>Paving</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

1.5.2 No Build Alternative

Under the No Build Alternative, roadway improvements associated with the proposed project would not be constructed. There would be no change in existing traffic facilities along SR-138 (Palmdale Boulevard) or Sierra Highway. Over time, traffic volumes would continue to increase, resulting in more traffic congestion and delay. The No Build Alternative does not meet the purpose of or need for the project. There would be no cost associated with this alternative.

1.6 Alternatives Considered but Eliminated from Further Discussion

Two potential alternatives were considered but eliminated from further consideration, as discussed below.

1.6.1 Standard Build Alternative

This alternative proposed the restriping of lanes between 5th Street East and 6th Street East to provide three lanes in each direction. Between 6th Street East and Sierra Highway, this alternative proposed to widen SR-138 (Palmdale Boulevard) to include 2-foot-wide left shoulders, 8-foot-wide right shoulders/bike lanes, 10-foot wide sidewalks, 12-foot-wide right turn pockets, and three 12-foot-wide through lanes in each direction. Additionally, 12-foot-wide double left turn lanes were proposed from eastbound SR-138 (Palmdale Boulevard) to northbound Sierra Highway and a 12-foot-wide left turn lane from westbound SR-138 (Palmdale Boulevard) to southbound 6th Street East.

Between Sierra Highway and 10th Street East, this alternative would widen and resurface SR-138 (Palmdale Boulevard) in each direction for a 12-foot-wide median, a 2-foot-wide left shoulder and three 12-foot-wide through lanes, with an 8-foot-wide right shoulder and an 8-foot-wide sidewalk. The third lane on eastbound SR-138 (Palmdale Boulevard) would drop off to a right-turn only lane to southbound 10th Street East. A 12-foot-wide left-turn pocket would be provided at each intersection, and no on-street parking would be allowed.

The ROW east of Sierra Highway would be widened from 50 to 58 feet from the road centerline. Most of the properties on SR-138 (Palmdale Boulevard) between Sierra Highway and 10th Street East would be fully acquired because existing buildings lie within the proposed footprint.

This alternative was excluded from detailed consideration in the environmental document because of excessive project costs and the substantial disruption of Palmdale’s downtown district that would result from the full acquisition of numerous parcels lining the northern and southern sides of SR-138 (Palmdale Boulevard) between Sierra Highway and 10th Street East. Significant business and community displacement would be required for this alternative, and its community cohesion, economic, and environmental effects would be substantially more than those of the Build Alternative.
1.6.2 Grade Separation Alternative

Passing trains frequently cause lengthy backups of vehicles along SR-138 (Palmdale Boulevard), especially during peak travel periods, where the UPRR and Metrolink tracks cross SR-138 (Palmdale Boulevard) between 6th Street and Sierra Highway. The City requested consideration of a grade separation to alleviate this source of traffic congestion. The proposed overhead grade separation structure would start at 5th Street East and end at 9th Street East. SR-138 (Palmdale Boulevard) would be widened to three through lanes in each direction between 5th Street East and 10th Street East.

This alternative was considered to be economically infeasible in the short-term. Representatives of the City, Caltrans, UPRR, CPUC, and Metrolink met on April 28, 2005, and agreed to exclude the grade separation from consideration in the short term. The City has continued to work with the CHSRA to resolve grade separation issues in Palmdale. To date, the design of one grade separation at Rancho Vista Boulevard is being advanced by the City of Palmdale.

1.6.3 Reversible Lane Alternative

Consistent with AB 2542 and Section 100.15 of the Streets and Highways Code, the feasibility of providing reversible highway lanes on SR-138 within the limits of the project and beyond was considered. The traffic counts and future forecasts indicate that the directional split of traffic volumes is 49:51 percent during the AM peak hour, and 54:46 percent during the PM peak hour. As the directional volumes are nearly equal, the provision of reversible lanes would not accommodate traffic volumes in the "minor" direction. Furthermore, the state highway accommodates left turning movements at all intersecting cross streets through the provision of dedicated left turn lanes and traffic signal phasing. These dedicated left turn lanes would need to be eliminated to accommodate one or more reversible traffic lanes.

1.7 Permits and Approvals Needed

The permits, agreements, and certifications listed in Table 1-10 would be required for construction of the project, including work within the UPRR ROW and modifications to the unnamed drainage ditch (intermittent blue-line stream) that runs along the UPRR/MetroRail tracks.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Highway Administration (FHWA)</td>
<td>Air Quality Conformity Determination</td>
<td>Before approval of the Final Initial Study/Environmental Assessment (IS/EA), FHWA must find that the project is consistent with requirements of the Clean Air Act (CAA).</td>
</tr>
<tr>
<td>Agency</td>
<td>Permit/Approval</td>
<td>Status</td>
</tr>
<tr>
<td>--------</td>
<td>----------------</td>
<td>--------</td>
</tr>
<tr>
<td>California State Water Resources Control Board (SWRCB)</td>
<td>Water Discharge Permit, approval of Notice of Intent (NOI) to comply with General Construction Activity National Pollutant Discharge Elimination System (NPDES) Permit (Clean Water Act [CWA] Section 402) Section 1602 Lake or Streambed Alteration Agreement</td>
<td>NOI to be submitted at least 30 days prior to start of construction. Section 1602 Notification is to be submitted and agreement obtained prior to start of construction.</td>
</tr>
<tr>
<td>California Department of Fish and Wildlife (CDFW)</td>
<td>Water Quality Certification (CWA Section 401)</td>
<td>Application to be submitted prior to start of construction.</td>
</tr>
<tr>
<td>Region 6, Lahontan Regional Water Quality Control Board (RWQCB)</td>
<td>Section 106 of the National Historic Preservation Act (NHPA) and Native American Consultation</td>
<td>Section 106 of the NHPA and Native American Consultation have been completed.</td>
</tr>
<tr>
<td>Interested Native American Tribes</td>
<td>Memorandum of Understanding (MOU) and a Construction and Maintenance Agreement between Caltrans and UPRR/SCRRA</td>
<td>Prior to any construction within or above railroad ROW.</td>
</tr>
<tr>
<td>Union Pacific Railroad Company (UPRR) and Metrolink (SCRRA)</td>
<td>Dust Control Permit pursuant to Rule 403</td>
<td>Permit to be acquired prior to construction.</td>
</tr>
<tr>
<td>Antelope Valley Air Pollution Control District</td>
<td>Approvals to relocate, protect in place, or remove utility facilities</td>
<td>Prior to any construction activities that would affect utility facilities.</td>
</tr>
<tr>
<td>Utilities (e.g., power, water, gas, cable, communication)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Chapter 2  Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

This chapter discusses project impacts on human, physical, and biological environments within the study area defined for each environmental resource. Analysis of each environmental factor includes discussion of the affected environment (i.e., existing environmental conditions), potential environmental impacts (e.g., construction impacts, permanent impacts, cumulative impacts, and indirect impacts), and avoidance, minimization, and mitigation measures for the Build Alternative and the No Build Alternative. Due to the extent of impacts expected to occur during project construction, a separate section is provided to describe potential construction-related impacts and recommended mitigation measures (Section 2.4, Construction Impacts).

For CEQA, the environmental conditions existing in 2014, when the traffic counts were conducted, served as the baseline for impact analysis evaluated in this environmental document. For NEPA, the No Build Alternative served as the baseline for determining the project’s impacts.

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

- **Timberlands (forest resources).** The project is located in an urban area. There is no timberland in the project area.
- **Coastal Zone.** The project is not within a coastal zone and is not within the jurisdiction of the California Coastal Commission.
- **Wild and Scenic Rivers.** No designated wild and scenic rivers are in the project area (National Wild and Scenic Rivers System map, last updated on August 18, 2011).
- **Paleontology.** The project site is not situated within the area with high paleontological resources potential and the site has been previously disturbed with roadway construction. No impacts on paleontological resources are anticipated.

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

This section addresses potential impacts to existing and planned land uses in the project area that could result from implementation of the project alternatives.
**Affected Environment**

According to the Land Use Element of the City of Palmdale General Plan, Palmdale’s planning area extends east to 120th Street East and towards the south. The City of Palmdale General Plan was adopted in 1993. At the time of the analysis, this was the most recent source available; therefore, field visits were conducted to verify existing land uses and development. The city boundaries traverse along Avenue W (Angeles National Forest) east of SR-14 and follow an irregular boundary along the Sierra Pelona ridgeline. To the west, the boundary extends out to 90th Street West, and to the north, it extends to Avenues M and L. The city’s downtown area is east of SR-14, primarily centered along Palmdale Boulevard.

The proposed project extends from SR-138 (Palmdale Boulevard) between 5th Street East and 10th Street East and Sierra Highway between Avenue R and 500 feet south of Avenue Q. From SR-14, traveling east to 25th Street East, SR-138 (Palmdale Boulevard) serves a highly concentrated general commercial area. Several different types of businesses operate along this stretch of SR-138 (Palmdale Boulevard), including fast-food restaurants, banks, retail stores, and insurance companies. In addition, the City’s government office buildings are located in this section. East of 25th Street, just beyond 35th Street East, SR-138 (Palmdale Boulevard) is lined with mixed commercial and single-family residential land uses. From 35th Street East to 50th Street East, SR-138 (Palmdale Boulevard) is surrounded mainly by undeveloped open space, but the land use is zoned for light industry, single-family, and general commercial uses. Sierra Highway land uses include residential, commercial, and industrial areas. Figure 2.1.1-1 shows the land uses, as designated by the City of Palmdale General Plan, within the study area.

Future land use trends and development may be influenced by the City of Palmdale Strategic Plan – 2008-2013 (Strategic Plan). The Strategic Plan outlines the actions the City will take to address community needs and objectives. The local community expressed concerns over future housing supply, economic growth, and job creation within Palmdale. According to Action Item ED.1.6, the City proposes to further maintain Enterprise and Foreign Trade Zones to promote business relocation to the city center. By providing financial incentives to relocate to Palmdale, trends toward the future development or relocation of businesses within such zones may occur. In addition, Action Item ED.4.3 proposes to complete construction of a conference center within Palmdale to facilitate further commercial and retail development within the vicinity.
Figure 2.1.1-1: Existing Land Use in the Study Area

SR-138 (5th Street East to 10th Street East) Improvements Project • 2-3
Also according to the Strategic Plan, the community is concerned about the availability of suitable housing for the aging senior population within Palmdale. With the baby-boomer generation in or close to retirement, accommodations for seniors are a concern. Through action Items S.2.1 and S.2.2, the City has proposed measures for development of senior housing, including construction of a “multi-family rental senior apartment development.” Also under Action Item S.1.1, the City proposes to review the general plan and zoning ordinance for existing policies, programs, and regulations to promote the development of senior housing and to propose amendments if needed.

Future land use and development may also be influenced by the recently completed Draft Palmdale Transit-Oriented Development (TOD) Land Use Framework Plan. The Palmdale TOD Land Use Framework Plan would serve as the framework or vision to guide development of the project planning area by a variety of landowners over time. The Framework Plan’s recommendations (guiding policies) describe a land use and development pattern to support the future Multimodal Station and enhance sustainability and quality of life in Palmdale. The Plan would provide policy direction, and identifies future General Plan, Zoning Ordinance, Specific Plan, and Specific Plan amendments that would be needed to carry out the vision.

Transportation and development projects are in various phases of planning in the project vicinity, and are identified and described in Table 2.1.1-1.

**Table 2.1.1-1: Major Transportation and Development Projects within the Study Area**

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Description</th>
<th>Project Proponent</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transportation Projects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1  California High-Speed Train System</td>
<td>The California High-Speed Rail Authority proposes a train system capable of operating at speeds in excess of 200 mph on a fully grade-separated track serving the major metropolitan centers of California. Project segments relevant for the proposed project include Bakersfield to Palmdale and Palmdale to Los Angeles.</td>
<td>The California High-Speed Rail Authority and the Federal Railroad Administration (FRA)</td>
<td>The Bakersfield to Palmdale and Palmdale to Los Angeles segments are in the environmental review phase. The statewide Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) is finalized.</td>
</tr>
</tbody>
</table>
Table 2.1.1-1: Major Transportation and Development Projects within the Study Area

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Description</th>
<th>Project Proponent</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 SR-138 Safety Improvement Project</td>
<td>Caltrans proposes to widen the shoulders from 2 to 8 feet, provide 2-foot-wide rumble strips near the edge of traveling roadway in each direction, and provide 4-foot-wide median buffer with rumble strips on SR-138 between SR-138/SR-18 Junction (Post Mile [PM] 69.3) and the San Bernardino County line (PM 75.0).</td>
<td>Caltrans</td>
<td>The Mitigated Negative Declaration was issued in April 2013.</td>
</tr>
<tr>
<td>3 High Desert Corridor</td>
<td>The proposed 63-mile-long west-east facility would provide route continuity and relieve traffic congestion between SR-14 in Los Angeles County and SR-18 and I-15 in San Bernardino County.</td>
<td>Caltrans and Metro</td>
<td>Final EIR/EIS was completed in June 2016.</td>
</tr>
<tr>
<td>4 XpressWest (formerly DesertXpress)</td>
<td>The project involves construction, operation, and maintenance of a high-speed passenger train along the 200-mile corridor between Victorville and Las Vegas, Nevada. The project would include stations and maintenance facilities at each end of the rail alignment in Victorville and Las Vegas.</td>
<td>FRA</td>
<td>Completed the privately funded planning and engineering stages; in process of acquiring funding for construction.</td>
</tr>
<tr>
<td>Energy Projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Palmdale Hybrid Power Project</td>
<td>The Palmdale Hybrid Power Project, a 570-megawatt (MW) electric generating facility, will be located near the Palmdale Airport, 0.33 mile south of Avenue M, east of Sierra Highway, adjacent to Air Force Plant 42. This “hybrid” facility combines the ultra-high efficiency clean-burning natural gas technology with renewable solar equipment.</td>
<td>City of Palmdale</td>
<td>Change of Ownership (and name) was approved on June 10, 2015. Awaiting Power Purchase Agreement with Southern California Edison before beginning construction.</td>
</tr>
</tbody>
</table>
Table 2.1.1-1: Major Transportation and Development Projects within the Study Area

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Development Projects</strong></td>
<td></td>
</tr>
<tr>
<td>6 Palmdale Transit Village</td>
<td>Residential development consisting of 156 apartment units and 122 townhomes. Located at the north side of Avenue Q and 4th Street East, Palmdale.</td>
</tr>
<tr>
<td></td>
<td>City of Palmdale</td>
</tr>
<tr>
<td></td>
<td>Phase 1 is complete. Phase 2 is ongoing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other Planning Documents</strong></td>
<td></td>
</tr>
<tr>
<td>7 Palmdale Transit Village Specific Plan</td>
<td>Encourage investment and development near the Palmdale Transportation Center under the direction of clearly established public policies, a land use plan, design standards and guidelines, and implementation steps.</td>
</tr>
<tr>
<td></td>
<td>City of Palmdale</td>
</tr>
<tr>
<td></td>
<td>Final plan completed in April 2007. The plan is likely to be revised to be consistent with the Palmdale TOD Land Use Framework Plan.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Transit-Oriented Development Overlay Project</td>
<td>The purpose of the project is to evaluate a variety of land uses and modes of transportation and prepare a plan that will provide multimodal connectivity near the Palmdale Transportation Center and future High-Speed Rail Station. The project area boundaries include Rancho Vista Boulevard to the north, Palmdale Boulevard to the south, SR-14 to the west, and 10th Street East to the east. A portion of the project area also includes the Palmdale Regional Airport, which is located approximately 1 mile northeast from the Palmdale Transportation Center.</td>
</tr>
<tr>
<td></td>
<td>City of Palmdale and Metro</td>
</tr>
<tr>
<td></td>
<td>Draft Plan completed in November 2015. Draft EIR is in preparation and scheduled to be completed in late 2017.</td>
</tr>
</tbody>
</table>
Table 2.1.1-1: Major Transportation and Development Projects within the Study Area

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Description</th>
<th>Project Proponent</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Avenue Q Feasibility Study</td>
<td>The project proposes to conduct an analysis that will determine the feasibility of developing the Avenue Q Corridor as a TOD, mixed-use development corridor. The &quot;Corridor&quot; will ultimately serve as an extension of the Palmdale Transportation Center, as well as the Palmdale Transit Village Specific Plan Planning Area.</td>
<td>City of Palmdale and SCAG</td>
<td>Draft Plan completed in November 2015.</td>
</tr>
<tr>
<td>10 North County Mobility Matrix</td>
<td>The Mobility Matrix is a starting point for updating the Metro Long-Range Transportation Plan scheduled for adoption in 2017. The North County Mobility Matrix includes (a) developing subregional goals and objectives to guide future transportation investments, (b) assessing baseline transportation system conditions to identify critical needs and deficiencies, and (c) initially screening projects and programs based on their potential to address subregional objectives and countywide performance themes.</td>
<td>Metro</td>
<td>Final Report dated February 2015.</td>
</tr>
<tr>
<td>11 North County Multi-Modal Integrated Transportation Study</td>
<td>The study is an update to the 2004 study to develop a multimodal transportation plan for the northern portion of Los Angeles County, addressing short-term and long-term requirements to accommodate a variety of trip purposes, including personal travel (highways, transit, and airport) and goods movement (inland port, ground access, trucks) within and through the study area.</td>
<td>Metro</td>
<td>Preparation of the draft study is ongoing.</td>
</tr>
</tbody>
</table>
**Table 2.1.1-1: Major Transportation and Development Projects within the Study Area**

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Description</th>
<th>Project Proponent</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 High-Speed Rail Station Area Plan</td>
<td>In partnership with California High-Speed Rail Authority, the City of Palmdale is developing a Station Area Plan that will guide the design of the Palmdale Multimodal Station and the surrounding station area (approximately 0.5-mile radius). This planning effort intends to enable the City to promote economic development and sustainability, encourage station area development, and enhance multimodal access connections between the station and Palmdale.</td>
<td>City of Palmdale and Metro</td>
<td>The study is ongoing and scheduled to be completed in 2017.</td>
</tr>
</tbody>
</table>

*Source: City of Palmdale.*

**Potential Impacts**

This section describes permanent impacts of the proposed project to land use. Construction impacts are described in Section 2.4 of this Chapter.

**No Build Alternative**

The No Build Alternative would not convert any existing land uses to transportation uses, nor would it have direct effects on land uses in the project area. Furthermore, the location, characteristics, and uses of existing transportation facilities generally would not change. As traffic volumes increase in the future, delay and congestion at the intersection would continue to worsen without any operational improvements.

**Build Alternative**

The Build Alternative would require the acquisition of property to be implemented, which is discussed further in Section 2.1.4.2, Relocation and Property Acquisition. The Build Alternative would permanently convert 2.02 acres of land to transportation use, including 0.34 acre of commercial manufacturing, 0.09 acre of downtown commercial, and 1.59 acres of public facility land uses. Overall, this conversion of land would be considered minor. Shifts in land use beyond what is planned for in the General Plan and Strategic Plan are not anticipated because the proposed project would help to achieve the goals outlined in these plans.
Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

Avoidance, minimization, and/or mitigation measures are not required.

Build Alternative

Caltrans has worked in close coordination with the City throughout the project development phase to ensure that the proposed project is consistent with existing land uses within the area. The following avoidance measures will be implemented under the Build Alternative:

LU-1: Project alignment shall be adjusted to fit within existing ROW, where feasible.

In addition, the measures identified in Section 2.1.4.2, Relocation and Property Acquisition, Avoidance, Minimization, and/or Mitigation Measures, also apply.

2.1.1.2 Consistency with State, Regional, and Local Plans

Affected Environment

This section identifies existing regional, local, and area plans and policies that apply to areas along SR-138 (Palmdale Boulevard) and Sierra Highway. The proposed project is located in northern Los Angeles County. Planning goals and policies relevant to the proposed project are from the City of Palmdale General Plan and SCAG’s RTP.

Planning goals and policies related to the proposed project are described in Table 2.1.1-2. The table also presents planning goals and policies included in regional and area transportation plans.

<table>
<thead>
<tr>
<th>Goals/Objectives/Policy</th>
<th>Build Alternative</th>
<th>No Build Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Palmdale General Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOAL C1: Establish, maintain and enhance a system of streets and highways which will provide for the safe and efficient movement of people and goods throughout the Planning Area, while minimizing adverse impacts on the community.</td>
<td>Consistent. The Build Alternative would substantially alleviate traffic congestion, improve LOS, and reduce delay at all intersections within the project limits, which would increase the safety and efficiency of the transportation system.</td>
<td>Not Consistent. Under the No Build Alternative, improvements to the transportation system would not occur. Congestion and delay would continue to worsen, conditions that do not promote safety and efficiency.</td>
</tr>
</tbody>
</table>
Table 2.1.1-2: Consistency with State, Regional, and Local Plans and Programs

<table>
<thead>
<tr>
<th>Goals/Objectives/Policy</th>
<th>Build Alternative</th>
<th>No Build Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective C1.2: Maintain and expand the arterial and regional roadway system to serve existing and future circulation needs.</td>
<td><strong>Consistent.</strong> The Build Alternative would widen SR-138 (Palmdale Boulevard) between 5th Street East and 10th Street East from two lanes to three lanes in each direction and widen Sierra Highway from two lanes to three lanes in each direction between Avenue R and 500 feet south of Avenue Q to serve existing and future circulation needs.</td>
<td><strong>Not Consistent.</strong> Under the No Build Alternative, there would be no expansion of SR-138 (Palmdale Boulevard) or Sierra Highway, which would not serve existing and future circulation needs.</td>
</tr>
<tr>
<td>Policy C1.2.4: Promote development of regional arterial links within the community where needed to serve existing and future needs including, but not limited to, coordinating with Caltrans and other affected agencies to expedite rerouting of Highway 138 and widening of SR-14.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOAL C3: Encourage use of nonvehicular transportation throughout the Planning Area.</td>
<td><strong>Consistent.</strong> The Build Alternative would extend the existing bicycle lane along Sierra Highway to Avenue R, promoting the use of nonvehicular transportation in the project vicinity. The Build Alternative also includes safety upgrades to pedestrian facilities, including pedestrian gates and median islands at the railroad crossing, and upgrades to existing nonstandard pedestrian accessibility features, including curb ramps, sidewalks, driveways, and crosswalks.</td>
<td><strong>Not Consistent.</strong> The No Build Alternative does not include implementation of nonvehicular transportation in the project vicinity.</td>
</tr>
<tr>
<td>GOAL ER1: Preserve significant natural and man-made open space areas that give Palmdale its distinct form and identity.</td>
<td><strong>Consistent.</strong> The Build Alternative would not involve acquisition of significant natural and man-made open space.</td>
<td><strong>Consistent.</strong> The No Build Alternative would not involve acquisition of significant natural and man-made open space.</td>
</tr>
<tr>
<td>Objective ER5.1: Minimize local air pollution caused by vehicles.</td>
<td><strong>Consistent.</strong> Under the Build Alternative, congestion and delay would improve, which would also improve air quality due to vehicles operating at free-flowing speeds.</td>
<td><strong>Not Consistent.</strong> Under the No Build Alternative, congestion would continue to worsen, which would contribute to additional air pollution.</td>
</tr>
</tbody>
</table>
Table 2.1.1-2: Consistency with State, Regional, and Local Plans and Programs

<table>
<thead>
<tr>
<th>Goals/Objectives/Policy</th>
<th>Build Alternative</th>
<th>No Build Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOAL N1: Minimize the exposure of residents to excessive noise to the extent possible, through the land planning and the development review process.</td>
<td>Consistent. Construction of the Build Alternative would involve additional noise in the study area during the construction period. These impacts will be minimized through implementation of avoidance and minimization measures, further discussed in Section 2.2.7.</td>
<td>Consistent. Under the No Build Alternative, residents would not be exposed to additional noise.</td>
</tr>
<tr>
<td>Palmdale Transit Village Specific Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goal C1: Establish, maintain, and enhance a system of streets and highways which will provide for the safe and efficient movement of people and goods throughout the Planning Area, while minimizing adverse impacts on the community.</td>
<td>Consistent. The Build Alternative would substantially alleviate traffic congestion, improve LOS, and reduce the delay at all intersections within the project limits, which would increase the safety and efficiency of the transportation system.</td>
<td>Not Consistent. Under the No Build Alternative, improvements to the transportation system would not occur. Congestion and delay would continue to worsen, conditions that do not promote safety and efficiency.</td>
</tr>
<tr>
<td>Goal L3: Provide a high quality of life for all existing and future residents, meeting the needs of a variety of lifestyles.</td>
<td>Consistent. The Build Alternative would substantially alleviate traffic congestion, improve LOS, and reduce the delay at all intersections within the project limits, which would improve the quality of life for existing and future residents.</td>
<td>Not Consistent. Under the No Build Alternative, congestion and delay would continue to worsen in the study area, which degrades the quality of life for existing and future residents.</td>
</tr>
<tr>
<td>Draft Palmdale TOD Land Use Framework Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foster TOD and supportive public improvements within the TOD Land Use Framework area.</td>
<td>Consistent. The Build Alternative would support public improvements near the future High-Speed Rail Station in the form of roadway improvements to SR-138 (Palmdale Boulevard) and Sierra Highway that would help alleviate traffic congestion, improve LOS, and reduce delay. The Build Alternative also includes safety upgrades to pedestrian facilities, including pedestrian gates and median islands at</td>
<td>Not Consistent. Under the No Build Alternative, no public improvements would occur.</td>
</tr>
</tbody>
</table>
Table 2.1.1-2: Consistency with State, Regional, and Local Plans and Programs

<table>
<thead>
<tr>
<th>Goals/Objectives/Policy</th>
<th>Build Alternative</th>
<th>No Build Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>the railroad crossing, and upgrades to existing nonstandard pedestrian accessibility features, including curb ramps, sidewalks, driveways, and crosswalks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop walkable, transit-oriented mixed-use districts within 0.25 mile of the station and along Avenue Q.</td>
<td><strong>Consistent.</strong> The Build Alternative would help to develop walkable neighborhoods by upgrading existing nonstandard pedestrian accessibility features, including curb ramps, sidewalks, driveways, and crosswalks.</td>
<td><strong>Not Consistent.</strong> Under the No Build Alternative, pedestrian facilities would not be upgraded.</td>
</tr>
<tr>
<td>Palmdale Trade and Commerce Center Specific Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Objective 1: Provide an efficient circulation system for the Specific Plan area which is safe, convenient, and mitigates impacts on adjacent streets.</td>
<td><strong>Consistent.</strong> The Build Alternative would substantially alleviate traffic congestion, improve LOS, and reduce delay at all intersections within the project limits, which would increase the safety and efficiency of the transportation system, including the area in the Palmdale Trade and Commerce Center Specific Plan.</td>
<td><strong>Not Consistent.</strong> Under the No Build Alternative, improvements to the transportation system would not occur. Congestion and delay would continue to worsen, conditions that do not promote safety and efficiency.</td>
</tr>
</tbody>
</table>
## Table 2.1.1-2: Consistency with State, Regional, and Local Plans and Programs

<table>
<thead>
<tr>
<th>Goals/Objectives/Policy</th>
<th>Build Alternative</th>
<th>No Build Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Policy 6: Provide opportunities for safe and effective nonvehicular transportation, including pedestrian access ways, bikeways and trails, where appropriate.</td>
<td><strong>Consistent.</strong> The Build Alternative would extend the existing bicycle lane along Sierra Highway to Avenue R, promoting the use of nonvehicular transportation in the project vicinity. The Build Alternative also includes safety upgrades to pedestrian facilities, including pedestrian gates and median islands at the railroad crossing, and upgrades to existing nonstandard pedestrian accessibility features, including curb ramps, sidewalks, driveways, and crosswalks.</td>
<td><strong>Not Consistent.</strong> The No Build Alternative does not include implementation of nonvehicular transportation in the project vicinity.</td>
</tr>
<tr>
<td>SCAG Regional Transportation Plan/Sustainable Communities Strategy</td>
<td><strong>Consistent.</strong> The Build Alternative would enhance mobility and air quality by reducing congestion and delay in the study area.</td>
<td><strong>Not Consistent.</strong> The No Build Alternative would not enhance mobility or air quality because no improvements to SR-138 (Palmdale Boulevard) or Sierra Highway would occur, which would contribute to additional congestion and delay in the study area.</td>
</tr>
<tr>
<td>Perform and support studies with the goal of identifying innovative transportation strategies that enhance mobility and air quality, and determine practical steps to pursue such strategies, while engaging local communities in planning efforts.</td>
<td>Consistent. The Build Alternative would substantially alleviate traffic congestion, improve LOS, and reduce delay at all intersections within the project limits, which would increase the efficiency of the transportation system.</td>
<td>Not Consistent. Under the No Build Alternative, improvements to the transportation system would not occur. Congestion and delay would continue to worsen, conditions that do not promote efficiency.</td>
</tr>
<tr>
<td>Work with relevant state and local transportation authorities to increase the efficiency of the existing transportation system.</td>
<td>Consistent. The Build Alternative would substantially alleviate traffic congestion, improve LOS, and reduce delay at all intersections within the project limits, which would increase the efficiency of the transportation system.</td>
<td>Not Consistent. Under the No Build Alternative, improvements to the transportation system would not occur. Congestion and delay would continue to worsen, conditions that do not promote efficiency.</td>
</tr>
</tbody>
</table>
The City of Palmdale General Plan, adopted in 1993, expresses policies that will guide decisions on future growth, development, and conservation of resources in a manner consistent with the goals and quality of life desired by the city’s residents. The circulation (C), environmental (ER), and noise (N) goals, objectives, and/or policies identified in Table 2.1.1-2 would apply to the proposed project.

The Palmdale Transit Village Specific Plan (2007) encourages investment and development in the vicinity of the Palmdale Transportation Center under the direction of clearly established public policies, a land use plan, design standards and guidelines, and implementation steps. Land use regulations developed in the Palmdale Transit Village Specific Plan ensure a mix of uses, providing residential, commercial, and employment needs of the community that are complementary with development of the Palmdale Transportation Center, and closely follow the principles of TOD. The circulation (C) and land use (L) goals, objectives, and/or policies identified in Table 2.1.1-2 would apply to the proposed project.

The Palmdale Trade and Commerce Center Specific Plan was initially adopted in 1990 but has been amended many times since, most recently in June 2014. The Plan serves as a means of managing the use of land, establishes provisions for detailed site development, provides a comprehensive approach to infrastructure planning and financing, and provides guidance for the future redevelopment activities in the area. The goals, objectives, and/or policies identified in Table 2.1.1-2 would apply to the proposed project.

SCAG’s 2016-2040 RTP/Sustainable Communities Strategy (SCS), adopted in 2016, is a long-range integrated transportation and land-use/housing strategy through 2040 for southern California. The RTP/SCS is the region’s long-range plan to meet the requirements of California’s landmark 2008 Senate Bill 375, which calls on each of the state’s 18 metropolitan areas to develop an SCS to accommodate future population growth and reduce greenhouse gas (GHG) emissions from cars and light trucks. The strategies identified in Table 2.1.1-2 would relate to the proposed project.

**Potential Impacts**

**No Build Alternative**

The No Build Alternative would not support achievement of the goals described above in Table 2.1.1-2 because congestion and delay would continue to worsen, safety and efficiency would not be enhanced, and pedestrian and bicycle facilities would not be constructed.
Build Alternative

As shown in Table 2.1.1-2, the proposed Build Alternative is consistent with planning goals, objectives, and policies expressed in local and regional plans and studies; therefore, the proposed Build Alternative would be consistent with the stated objectives of these regional and local plans.

Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

Avoidance, minimization, and/or mitigation measures are not required.

Build Alternative

The Build Alternative would be consistent with the stated objectives of these regional and local plans; therefore, avoidance, minimization, or mitigation measures are not required.

2.1.1.3 Parks and Recreation

Regulatory Setting

This project will affect facilities that are protected by the Park Preservation Act (California Public Resources Code [PRC] Sections 5400-5409). The Park Preservation Act prohibits local and state agencies from acquiring any property that is in use as a public park at the time of acquisition unless the acquiring agency pays sufficient compensation or land, or both, to enable the operator of the park to replace the parkland and any park facilities on that land.

Affected Environment

There are six parks and recreational facilities located within 0.5 mile of the proposed Build Alternative: Robert St. Clair Parkway, Courson Park, Poncitlán Square, Richard B. Hammack Center, Larry Chimbole Cultural Center, and the Palmdale Senior Center. With the exception of Telstar Mobile Park, these are all public parks or recreational facilities operated by the City of Palmdale; therefore, they are protected by the Park Preservation Act. The locations of these parks and recreational facilities are shown in Figure 2.1.1-2.

Robert St. Clair Parkway is located along Sierra Highway from Avenue Q to Avenue R. The total acreage of the parkway is approximately 8.7 acres. The parkway includes a 12-foot-wide concrete trail that forms a meandering bikeway. The trail extends along the west side of Sierra Highway from Avenue Q to SR-138 (Palmdale Boulevard) and from SR-138 (Palmdale Boulevard) to 250 feet south of Avenue Q-12. The Parkway/path is owned by the City. It is designated primarily for passive recreation use and is open to the public.
Courson Park is located at the northeast corner of 10th Street East and Avenue Q-12. The area developed for park uses covers 7.5 acres, and its facilities include a swimming pool and pool building, two lighted basketball courts, a lighted sand volleyball court, two play lots, a spray pool, a fieldhouse with restrooms and equipment checkout, a gazebo, and picnic areas. In addition, the Parks and Recreation office building and a multipurpose activity building are located next to the park. The Palmdale Senior Center is located across the street at the southeast corner of Avenue Q-12 and 10th Street East. The park uses include children's day camps and swimming activities, including lap swimming, swimming lessons, and aquatic play, during the summer.

Poncitlán Square is located at 38315 9th Street East and is across from City Hall. Poncitlán Square features native vegetation and landscaping, a rose garden, and a bandstand pavilion/gazebo for outdoor concerts, special events, outdoor wedding ceremonies, and reception photos. This park is approximately 0.1 mile from the project.

The Richard B. Hammack Center is a public recreational facility located at 815 East Avenue Q-6. It contains a 30,000-square-foot indoor recreation facility of which 19,000 square feet are developed and contain a gymnasium area to accommodate sports activities, a lounge area, a food court area, and a table game area. The facilities contain two outdoor roller hockey rinks totaling 52,000 square feet. In addition, the Boys and Girls Club of America has developed an additional 4,000 square feet of this facility, which is leased to it by the City.

The Larry Chimbole Cultural Center is located at 704 East Palmdale Boulevard. This 19,000-square-foot facility is available for use by the public. The Larry Chimbole Cultural Center contains three meeting rooms and an auditorium with a stage and kitchen.

The Palmdale Senior Center is located at 1002 East Avenue Q-12. The Palmdale Senior Center includes a kitchen, multi-use hall, meeting room, and lounge. The facility is used primarily for senior citizen activities, but it is also available for use by the public.

There are few pedestrian or bicycle facilities within the study area. There is one existing trail through Robert St. Clair Parkway. Sidewalks are located along SR-138 (Palmdale Boulevard) and Sierra Highway within the project limits.
Figure 2.1.1-2: Parks and Recreational Facilities within 0.5 Mile of the Project
**Potential Impacts**

This section describes permanent impacts of the proposed project to parkland. Construction impacts are described in Section 2.4 of this Chapter.

**No Build Alternative**

The No Build Alternative consists of transportation projects that are already planned and committed to be constructed by or before 2040 other than the proposed project. It is not anticipated that implementation of these projects would have an impact on parks and recreational facilities.

**Build Alternative**

Only one park or recreational facility would be directly impacted by the proposed Build Alternative. The Build Alternative would require partial permanent acquisition of 0.89 acre of land from Robert St. Clair Parkway, both north and south of SR-138 (Palmdale Boulevard), for widening Sierra Highway. This constitutes a small portion of the parkway, and the existing use and access of the parkway would not be affected; therefore, no facilities, functions, or activities of the park would be adversely affected. Access to the parkway is anticipated to be maintained at all times during project construction and operation. Robert St. Clair Parkway is protected under the Park Preservation Act in which just compensation would be provided for acquisition of land, as outlined under the **Avoidance, Minimization, and/or Mitigation Measures** section.

None of the existing pedestrian or bicycle facilities would be impacted by the Build Alternative. The existing bike path through Robert St. Clair Parkway along Sierra Highway would be extended to Avenue R under the Build Alternative, which would be a beneficial effect of the project.

Based on the Section 4(f) findings in Appendix B, the project Build Alternative would result in a *de minimis* finding for Robert St. Clair Parkway and no use of the remaining parks. Please refer to Appendix B (Resources Evaluated Relative to the Requirements of Section 4(f) section) for more information about the parks with no Section 4(f) use.

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

**No Build Alternative**

Avoidance, minimization, and/or mitigation measures are not required.

**Build Alternative**

The following mitigation measures will be implemented to minimize impacts to parklands.
PAR-1: In accordance with the provisions of the California Park Preservation Act (CCP Sections 5400 through 5409), sufficient (just) compensation (CCP 1263.320), or land, or both, will be paid to the City of Palmdale Parks and Cultural Department to enable the operating entity to replace the parkland and the facilities thereon. The substitute land will be of comparable characteristics and of substantially equal size, located in an area that would allow use by generally the same people who used the existing parkland and facilities. The cost will include the land and the cost of converting the land into parkland, including placement of substitute facilities thereon if a functional replacement is chosen. The final determination of what constitutes a functional replacement lies with Caltrans and the City of Palmdale Parks and Cultural Department.
2.1.2 Growth

Regulatory Setting

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

CEQA also requires the analysis of a project’s potential to induce growth. CEQA guidelines (Section 15126.2[d]) require that environmental documents “…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…”

Affected Environment

The study area boundary is defined by the project’s sphere of influence as it is related to growth impacts. The proposed project could influence growth up to 2 miles from the project limits. Indirect impacts are evaluated within the time limits of the project construction (18 to 24 months) and design year. It is anticipated that the project would be open to traffic by 2020, with 2040 as the design year.

Palmdale has experienced increasing population growth over the past several years. Indications are strong that residential growth will continue due in part to the relatively low housing prices compared to other urbanized areas in Los Angeles County. As indicated in Table 1-5 of Chapter 1, Palmdale increased in population from 118,718 in 2000, to 156,633 in 2010. The population in Palmdale is projected to continue to grow to 202,406 in 2020 and 261,501 in 2040.

Palmdale’s major employment sources are the aerospace industry and other major corporations and industries. Most of the industrial land uses are located near the Palmdale Regional Airport. Highway commercial uses extend east along SR-138 (Palmdale Boulevard) from SR-14. There is a potential for manufacturing companies to continue locating to Palmdale as a result of land affordability, proximity to major transportation hubs, and comparably low taxes. In addition, the California High-Speed Rail Authority has initiated preliminary development work on a north-south corridor through the Antelope Valley with segments proposed from Bakersfield to Palmdale and Palmdale to Los Angeles.
Potential Impacts

The Caltrans Guideline for Preparers of Growth-Related, Indirect Impact Analysis provides guidance for conducting growth-related, indirect impact analysis. The potential for the project to influence growth is based on factors that include the project’s accessibility, type of facility, and project location, as well as growth pressure. To determine the project’s influence on growth, a two-phase approach was used to evaluate growth-related impacts. The first phase was a first-cut screening, which estimated the likely growth-potential effect and whether further analysis would be necessary. If growth is reasonably foreseeable, then further analysis is required to determine the effect of this growth on resources of concern.

First-Cut Screening Analysis

The first-cut screening analysis for the Build Alternative was done by answering the following key questions outlined in the Guidance:

- How, if at all, does the project potentially change accessibility?
- How, if at all, do the project type, project location, and growth-pressure potentially influence growth?
- Determine whether project-related growth is “reasonably foreseeable.”
- If there is project-related growth, how, if at all, will that impact resources of concern?

Based on the first-phase screening, there is potential for the project to affect accessibility due to reduction in traffic congestion, increase of traffic capacity, and improved traffic operations on SR-138 (Palmdale Boulevard) and Sierra Highway. These improvements in travel time and reductions in delay could make the areas near SR-138 (Palmdale Boulevard) and Sierra Highway a slightly more attractive option for additional commercial and high-density residential development, which would be consistent with the stated goals of the plans described in Section 2.1.1.2. Given the scale of the project, which would widen SR-138 (Palmdale Boulevard) a distance of approximately 0.5 mile and widen Sierra Highway a distance of approximately 0.9 mile, the project would not result in long-term changes to travel times, travel cost, or accessibility to employment and services from the perspective of the regional economy.

In terms of project type, location, and growth-pressure, the project is a capacity-increasing project in a semi-urban desert area. Local plans for the area, described in Section 2.1.1.2, have indicated the goals of increasing land use density and TODs near the proposed project. Due to these factors, growth pressures influencing development already exist in the study area; however, the presence of UPRR and Metrolink tracks, located immediately west and parallel to Sierra Highway in the project area, hinders some of the development in the project vicinity.

It is not expected that the roadway improvement project in and of itself would result in a change in traffic patterns or travel behavior such that it would result in
commercial or industrial development seeking to locate or relocate in the immediate vicinity, as compared to the existing conditions. The project does not provide new access to, or open up, any vacant land areas that heretofore have been inaccessible due to lack of a transportation facility, nor would it result in a substantial time savings for vehicular movement.

It is “reasonably foreseeable” that the project would be implemented in a manner that may accommodate growth and development as planned, as well as potentially attract additional commercial and residential development. Other projects that are at various levels of planning approval stages, such as the High-Speed Rail Station in Palmdale and TODs in the project vicinity, would cumulatively increase the potential for a “reasonable foreseeable” effect on growth level and intensification patterns within the project area, consistent with community goals.

Resources of concern within the project area that could be impacted as a result of the project’s potential to influence growth include community characteristics, visual quality, and air quality. Based on the first-cut screening, there is potential for the project to influence growth and to impact resources of concern; therefore, a further analysis of growth-related impacts was conducted for this project.

**Growth-Related Impact Analysis**

The following steps were used as guidelines for identifying and assessing growth-related impacts of the proposed project:

- Review previous project information and decide on the approach and level of effort needed for the analysis (“right-size” the analysis).
- Identify the potential for growth for each alternative.
- Assess the growth-related effects of each alternative to resources of concern.
- Consider additional opportunities to avoid and minimize growth-related impacts.
- Compare the results of the analysis for all alternatives.
- Document the process and findings of the analysis.

A review was conducted of the regional and local plans pertinent within the study area, described in Section 2.1.1.2. The review was conducted to understand how the transportation project is currently accounted for in the framework of land use planning for the area and, specifically, whether its potential growth impacts are accounted for in such plans. The plans all support improvements to roadways for the purpose of reducing congestion and increasing the efficiency and safety of existing roadways. The City of Palmdale General Plan specifically identifies the proposed transportation project as a policy to implement. Many plans also have policies outlining land use changes in Palmdale in the form of encouraging higher density development and TOD improvements, particularly in the vicinity of the future High-Speed Rail Station and along Avenue Q. Because these local plans are envisioning roadway improvements and anticipating additional growth, any growth associated with the proposed project would be covered under these plans and addressed as part of the required environmental analysis conducted for those projects.
No Build Alternative.

The No Build Alternative would not lead to any physical improvements that may induce growth or development in the surrounding area. The existing local roadways would operate at their current level of efficiency, and congested conditions would remain and become worse over time. No growth-related impacts are expected, nor would the No Build Alternative have an impact on resources of environmental concern.

Build Alternatives

The Build Alternative may have a slight attraction for new growth due to the changes in accessibility along SR-138 (Palmdale Boulevard) and Sierra Highway, but it is unlikely to attract new growth beyond that which is forecasted and planned for by the City. Given the size of the project and the time savings that would be achieved in travel for commuters and those involved in goods movement would be modest, shifts in growth to take advantage of the proposed improvements are not anticipated. Caltrans’ Standard Environmental Reference (SER) Volume 4 (Community Impact Assessment) uses a 5-minute travel time savings as the beginning threshold for consideration when decisions may be made to relocate residential and industrial sites. The proposed project improvements are estimated to save up to 1 minute of vehicular driving time compared to existing conditions. However, the proposed project would require to acquire only two commercial properties and thus this beginning threshold is not applicable. In addition to the time savings, Table 11 of the Traffic and Intersection Control Evaluation Study Report (July 2016) indicates that the project’s savings from reduced delay could reach $3,842,000 per year by 2040.

Most of the planned growth in the project area is concentrated around the future High-Speed Rail Station and Avenue Q. The increases in capacity and reduction in congestion that would result from the Build Alternative would facilitate this planned growth. The proposed project would help address goals and policies of local and regional plans to encourage growth and infill development.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project is not expected to result in significant impacts due to growth. No avoidance, minimization, and/or mitigation measures are proposed.
2.1.3 Community Impacts

2.1.3.1 Community Character and Cohesion

Regulatory Setting

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

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

Affected Environment

The proposed project is located within Palmdale in Los Angeles County. Palmdale can be delineated into two areas, with SR-14 serving as a dividing point between West and East Palmdale. The community of East Palmdale is bordered by SR-14 to the west and extends east towards 120th Street, while West Palmdale is bordered by SR-14 to the east and extends west towards 90th Street West. The proposed project is located in East Palmdale in the downtown commercial area. There are areas of residential land uses near the proposed project, such as north of SR-138 (Palmdale Boulevard) and west of 5th Street East and west of 9th Street East to the north and south of SR-138 (Palmdale Boulevard). There is also a suburban neighborhood within East Palmdale, The Vineyards, which is located in southeast Palmdale, but it is outside the study area for this project. Based on the General Plan, Palmdale has noted its intent to remain consistent with the current land use designations currently set for the area.

Census Block Groups that most closely correspond to the project area were examined, and population and community characteristics of the groups were compared with the totals for the City of Palmdale and Los Angeles County. Most data were obtained from the U.S. Census 2010 (unless otherwise indicated) at the block group level. When the data at the block group level are not available, the data at the census tract level are used. Seven census tracts covering the project study area within Palmdale include Tracts 9101.01, 9102.01, 9104.02, 9104.03, 9104.04, 9105.01, and 9105.04. The block group map within the Palmdale study area is also shown in Figure 2.1.3-1. The block groups and census tracts contained within the Palmdale study area are listed in Table 2.1.3-1.
Figure 2.1.3-1: Census Tracts and Block Groups within the Study Area
Table 2.1.3-1: Palmdale Study Area Block Groups (2010 U.S. Census)

<table>
<thead>
<tr>
<th>Block Groups within the Palmdale Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>9101.01 Block Group 1</td>
</tr>
<tr>
<td>9102.01 Block Group 2</td>
</tr>
<tr>
<td>9104.03 All Block Groups</td>
</tr>
<tr>
<td>9104.02 All Block Groups</td>
</tr>
<tr>
<td>9104.04 All Block Groups</td>
</tr>
</tbody>
</table>

Population and Age

The total population and the race and ethnic composition of the population within the Palmdale study area compared with the City of Palmdale and Los Angeles County are summarized in Table 2.1.3-2.

Table 2.1.3-2: Race and Ethnic Composition of Population in Palmdale (2010 U.S. Census)

<table>
<thead>
<tr>
<th>Category</th>
<th>Palmdale Study Area</th>
<th>City of Palmdale</th>
<th>Los Angeles County</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 Total Population</td>
<td>17,469</td>
<td>116,670</td>
<td>9,519,331</td>
</tr>
<tr>
<td>2010 Total Population</td>
<td>19,186</td>
<td>152,750</td>
<td>9,818,605</td>
</tr>
<tr>
<td>Net Change</td>
<td>(+) 1,717</td>
<td>(+) 36,080</td>
<td>(+) 299,274</td>
</tr>
<tr>
<td>Population Growth Rate (2000-2010)</td>
<td>10%</td>
<td>31%</td>
<td>3.1%</td>
</tr>
<tr>
<td>2010 Median Age</td>
<td>25.5</td>
<td>29.8</td>
<td>34.8</td>
</tr>
<tr>
<td>19 Years and Under</td>
<td>41%</td>
<td>37%</td>
<td>28%</td>
</tr>
<tr>
<td>20 to 64 Years</td>
<td>54%</td>
<td>56%</td>
<td>62%</td>
</tr>
<tr>
<td>65 Years and Over</td>
<td>5%</td>
<td>7%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Ethnicity and Race

<table>
<thead>
<tr>
<th>Ethnicity and Race</th>
<th>Palmdale Study Area</th>
<th>City of Palmdale</th>
<th>Los Angeles County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic*</td>
<td>66.0%</td>
<td>54.4%</td>
<td>47.7%</td>
</tr>
<tr>
<td>White</td>
<td>12.4%</td>
<td>24.5%</td>
<td>27.8%</td>
</tr>
<tr>
<td>Asian*</td>
<td>1.9%</td>
<td>4.1%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Black *</td>
<td>17.1%</td>
<td>14.1%</td>
<td>8.3%</td>
</tr>
<tr>
<td>American Indian and Alaska Native *</td>
<td>0.2%</td>
<td>0.3%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Native Hawaiian and Other Pacific Islander*</td>
<td>0.06%</td>
<td>0.1%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Some Other Race</td>
<td>0.2%</td>
<td>0.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Two or More Races</td>
<td>2.0%</td>
<td>2.2%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Total Minority</td>
<td>85.3%</td>
<td>73%</td>
<td>69.9%</td>
</tr>
</tbody>
</table>

*Minority individuals” as defined by the CEQ.

Source: U.S. Census Bureau, 2010.
Based on the 2010 U.S. Census, the total population within the Palmdale study area is 19,186, which is roughly 8 percent of the total population of Palmdale, and with a median age of 25.5, similar to the City of Palmdale. The population growth rate within the study area between 2000 and 2010 is approximately 10 percent, which is lower compared to Palmdale’s average growth rate of 31 percent over the same period. Distribution of population within Palmdale is dispersed throughout the city; however, population densities are highest in areas just north and south of the study area, outside the core downtown commercial business area.

**Ethnicity and Race**

The ethnic composition within Palmdale is shown in Table 2.1.3-2 and is similar to SCAG’s regional population characteristics. When compared to the City of Palmdale and Los Angeles County, the Palmdale study area has a higher percentage of Hispanic population. For the Non-Hispanic Black population, Palmdale displays a higher percentage than the city and county, as well. The study area has a much lower percentage of Non-Hispanic White population and Non-Hispanic Asians compared to the city and county. The percentages of Non-Hispanic American Indian and Alaska Native, Non-Hispanic Native Hawaiian and Other Pacific Islander, Non-Hispanic Some Other Race, and Non-Hispanic Two or More Races are similar to the percentages in the city and county. The Hispanic population is the majority demographic group and accounts for 66 percent of the population within the Palmdale study area for this project. When compared to the City of Palmdale, there is a higher percentage of Hispanic population within the study area.

The CEQ has established definitions for NEPA analysis, in which “minority individuals” are defined as members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black; or Hispanic. For the study area, the total minority population is approximately 85.3 percent (16,367), as shown in Table 2.1.3-2. A discussion of minority populations is provided in Section 2.1.3.3, Environmental Justice.

**Income**

The income level and poverty status of the population within the Palmdale study area compared with the City of Palmdale and Los Angeles County are presented in Table 2.1.3-3. Information regarding income levels is not available from the 2010 U.S. Census at the block group level for the Palmdale study area. As a result, income information at the census tract level and block group level was obtained from the 2014 American Community Survey (ACS). This is an estimate over a 5-year period, which explains why the total population differs between Table 2.1.3-3 and Table 2.1.3-2.
Table 2.1.3-3: Palmdale Income Levels (2010 U.S. Census)

<table>
<thead>
<tr>
<th>Category</th>
<th>Palmdale Study Area</th>
<th>City of Palmdale</th>
<th>Los Angeles County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Household Income Level</td>
<td>$29,667</td>
<td>$61,076</td>
<td>$55,811</td>
</tr>
<tr>
<td>Total Population (Persons)</td>
<td>19,085</td>
<td>152,750</td>
<td>9,818,605</td>
</tr>
<tr>
<td>Percentage of Population Determined as Poverty Status</td>
<td>52.3</td>
<td>19.4</td>
<td>17.5</td>
</tr>
</tbody>
</table>


As defined by the U.S. Census Bureau, poverty status includes individuals who fall below certain monetary threshold levels, which vary by family size and composition. For example, a family of three would be considered at poverty if the annual household income is less than $14,374. According to the 2010 U.S. Census, there are approximately 9,979 persons within Palmdale who are considered to be of poverty status, which equates to approximately 52.3 percent of the total population within the city as below the poverty threshold level. As shown in Table 2.1.3-3, the study area has a much higher percentage of persons within the poverty level compared to the city and county as a whole.

The median household income level within the study area is $29,667. In comparison to the Los Angeles County median household income level of $55,811 and the City of Palmdale median household income of $61,076, the study area exhibits a significantly lower average household income level.

**Tenure**

The stability index within the study area compared with the City of Palmdale is summarized in Table 2.1.3-4. Approximately 27 percent of the total housing units within the study area are owner occupied compared with 70 percent in Palmdale. Single-family homes, which are classified as 1-unit detached structures, make up approximately 41 percent of the total housing units in the study area compared with 79 percent in Palmdale. Of the owner-occupied housing units within the study area, households whose members have lived within the same housing unit prior to the year 2000 consist of approximately 45 percent of the total households compared with 33 percent in Palmdale. Although the percentage of owner-occupied housing units and single-family homes is relatively high within the City of Palmdale, the number of long-term residents who have lived within their current households for 10 years or less is relatively low. Within the study area, the situation is the opposite – there is a low percentage of owner-occupied housing units and single-family homes, but the number of long-term residents in owner-occupied housing units is higher.
Chapter 2 • Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

Table 2.1.3-4: Palmdale Stability Index

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Palmdale Study Area</th>
<th>City of Palmdale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Owner-Occupied Housing Units</td>
<td>27</td>
<td>70.2</td>
</tr>
<tr>
<td>Percent of Single-Family Homes</td>
<td>40.9</td>
<td>79</td>
</tr>
<tr>
<td>Percent of Household Members in Same Housing Unit (Prior to Year 2000)</td>
<td>44.7</td>
<td>33.4</td>
</tr>
</tbody>
</table>


Housing

Comparison data on the regional and local housing characteristics in the study area, City of Palmdale, and Los Angeles County are presented in Table 2.1.3-5. The owner-occupied housing in the study area accounts for approximately 27 percent compared to 68 percent in Palmdale and 48 percent in Los Angeles County. The average home value in the study area is $121,900, which is significantly lower compared to $277,700 and $508,800 in Palmdale and Los Angeles County as a whole, respectively. The average household size within the study area is 3.7 persons, which is approximately the same as in the City of Palmdale, but higher than in Los Angeles County. Most of the housing units in the study area are located south of SR-138 (Palmdale Boulevard).

Table 2.1.3-5: Regional and Local Housing Characteristics

<table>
<thead>
<tr>
<th>Category</th>
<th>Palmdale Study Area</th>
<th>City of Palmdale</th>
<th>Los Angeles County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Housing Units</td>
<td>6,238</td>
<td>46,544</td>
<td>3,445,076</td>
</tr>
<tr>
<td>Number of Households</td>
<td>5,472</td>
<td>42,952</td>
<td>3,241,204</td>
</tr>
<tr>
<td>Family Households</td>
<td>77.7%</td>
<td>82.3%</td>
<td>67.7%</td>
</tr>
<tr>
<td>Non-Family Households</td>
<td>22.3%</td>
<td>17.7%</td>
<td>32.3%</td>
</tr>
<tr>
<td>Average Household Size</td>
<td>3.7</td>
<td>3.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Vacancy Rate</td>
<td>12.3%</td>
<td>7.7%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Tenure – Owner Occupied</td>
<td>27%</td>
<td>67.9%</td>
<td>47.7%</td>
</tr>
<tr>
<td>Tenure – Renter Occupied</td>
<td>73%</td>
<td>32.1%</td>
<td>52.3%</td>
</tr>
<tr>
<td>Median Home Value</td>
<td>$121,900</td>
<td>$277,700</td>
<td>$508,800</td>
</tr>
</tbody>
</table>


Economic Base

In the wider regional Antelope Valley Area and City of Palmdale, the major employment centers are Antelope Valley Mall, Air Force Plant 42, and Edwards Air Force Base (EAFB). The aerospace industry is represented by Scaled Composites, Boeing, Lockheed Martin, and Northrop Grumman. Two military bases are within the Greater Antelope Valley – EAFB, which is located north of Lancaster near the border of Kern and Los Angeles counties, and China Lake Naval Reserve near Ridgecrest Street. Palmdale also has several business and industrial parks, including the
Palmdale Trade & Commerce Center, which at 746 acres is the largest. Most of the businesses within the study area are located along SR-138 (Palmdale Boulevard) and include many restaurants, retail stores, and banks.

The labor force within the study area, City of Palmdale, and Los Angeles County is characterized by occupation class in Table 2.1.3-6. The study area labor force composition is similar to that of the City of Palmdale and Los Angeles County. Notable differences include a higher percentage of people employed in the construction and arts, entertainment, recreation, accommodation, and food services industries compared to the City of Palmdale and Los Angeles County. The study area also has a much higher unemployment rate (21.8 percent) than the City of Palmdale (14.3 percent) and Los Angeles County (11.0 percent).

**Table 2.1.3-6: Labor Force by Occupation (Civilians, Aged 16+)**

<table>
<thead>
<tr>
<th>Labor Force Sector</th>
<th>Palmdale Study Area</th>
<th>City of Palmdale</th>
<th>Los Angeles County</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td>Agriculture, forestry, fishing and hunting, and mining</td>
<td>71</td>
<td>1.2</td>
<td>440</td>
</tr>
<tr>
<td>Construction</td>
<td>704</td>
<td>12.5</td>
<td>4,643</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>670</td>
<td>11.9</td>
<td>7,022</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>78</td>
<td>5.0</td>
<td>1,117</td>
</tr>
<tr>
<td>Retail trade</td>
<td>788</td>
<td>11.0</td>
<td>7,541</td>
</tr>
<tr>
<td>Transportation and warehousing, and utilities</td>
<td>181</td>
<td>3.2</td>
<td>3,172</td>
</tr>
<tr>
<td>Information</td>
<td>112</td>
<td>2.0</td>
<td>1,416</td>
</tr>
<tr>
<td>Finance, insurance, real estate and rental and leasing</td>
<td>271</td>
<td>4.8</td>
<td>3,225</td>
</tr>
<tr>
<td>Professional, scientific, management, administrative, and waste management</td>
<td>559</td>
<td>9.9</td>
<td>5,024</td>
</tr>
<tr>
<td>Educational, health and social services</td>
<td>905</td>
<td>16.1</td>
<td>12,111</td>
</tr>
<tr>
<td>Arts, entertainment, recreation, accommodation and food services</td>
<td>736</td>
<td>13.1</td>
<td>4,880</td>
</tr>
<tr>
<td>Other services (except Public Administration)</td>
<td>461</td>
<td>8.2</td>
<td>3,519</td>
</tr>
<tr>
<td>Public Administration</td>
<td>86</td>
<td>1.5</td>
<td>2,856</td>
</tr>
<tr>
<td>Employed Labor Force</td>
<td>5,622</td>
<td>78.2</td>
<td>56,966</td>
</tr>
<tr>
<td>Unemployed Labor Force</td>
<td>1,563</td>
<td>21.8</td>
<td>9,544</td>
</tr>
<tr>
<td>Total Labor Force</td>
<td>7,185</td>
<td>100</td>
<td>66,510</td>
</tr>
</tbody>
</table>

*Source: ACS, 2014.*
Potential Impacts

No Build Alternative

No impacts pertaining to community cohesion and character would occur under the No Build Alternative.

Build Alternative

The proposed project is located within the downtown commercial area of Palmdale. It proposes to widen existing roadways for the purpose of reducing congestion and increasing capacity on SR-138 (Palmdale Boulevard) and Sierra Highway. Direct impacts that could affect community character and cohesion would not occur because the Build Alternative does not involve construction of a new roadway; all improvements are along existing roadways. For the same reason, the Build Alternative would not bisect an existing residential neighborhood or community. Increasing the capacity of SR-138 (Palmdale Boulevard) and Sierra Highway would not change the character of the area because it is already an urban area. The Build Alternative would benefit the neighborhoods and communities in Palmdale by reducing congestion and travel time, which could help to further link the communities of Palmdale together.

Indirect impacts are also unlikely to occur. Existing access to SR-138 (Palmdale Boulevard) and Sierra Highway would not change, nor would access to any community services be curtailed. Circulation and quality of life would improve under the Build Alternative due to the reduction in congestion. Increased urbanization and growth could result, but as discussed in Sections 2.1.1, Land Use, and 2.1.2, Growth, the City would like to focus growth and more urbanization within the study area.

Partial and full ROW acquisitions would be required, but these are fairly minor in scope. Two full acquisitions would be required; all other partial acquisitions would not change the use of the existing structure (discussed in more detail in Section 2.1.3.2, Relocation and Property Acquisition). The acquisitions requiring relocation include a Domino’s Pizza and a Soya restaurant. The Draft Relocation Impact Memorandum (DRIM) (August 2016), prepared for this project, indicated that there is adequate replacement for these business operations within the area, and relocation of these businesses would not pose an impact on the community. All displaces would be treated in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

Avoidance, minimization, and/or mitigation measures are not required.
Build Alternative

Measures to address partial and full ROW acquisitions are discussed in Section 2.1.3.2, Relocation and Property Acquisition. The project will be designed to conform with the guidelines provided in adopted local, general, and specific plans of the City of Palmdale. No additional mitigation would be required.

2.1.3.2 Relocation and Property Acquisition

Regulatory Setting

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

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S.C. 2000d, et seq.). Please see Appendix C for a copy of Caltrans’ Title VI Policy Statement.

Affected Environment

Information in this section is from the DRIM prepared for this project (August 2016). It analyzes potential ROW acquisition impacts on residential and nonresidential properties within the study area under the Build Alternative. The proposed project extends through the downtown commercial area of Palmdale. Several different types of businesses operate along this stretch of SR-138 (Palmdale Boulevard), including fast-food restaurants, banks, retail stores, and insurance companies. In addition, the City’s government office buildings are located in this section. Sierra Highway land uses include residential, commercial, and industrial areas. See the Land Use and Community Cohesion sections of this environmental document for a full description of the existing characteristics within the study area.

Potential Impacts

No Build Alternative

No property acquisitions or relocations would occur under the No Build Alternative.

Build Alternative

The Build Alternative would not affect any residential properties within the study area; however, partial and full acquisition of nonresidential properties within the study area would be required under the Build Alternative, as summarized in Table 2.1.3-7. A total of 64 parcels would be impacted by the Build Alternative. Of the 64
Chapter 2 • Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

parcels, 45 parcels would be impacted by either a TCE or a partial acquisition or a combination of both. In addition, 2 commercial properties would be acquired in full and 17 parcels, which are owned by the City, would require City Council Resolution.

Table 2.1.3-7: Summary of Impacted Properties

<table>
<thead>
<tr>
<th>Street</th>
<th>Number of Impacted Parcels</th>
<th>Number of Residences Impacted</th>
<th>Number of Commercial Properties Impacted by Full Acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-138 (Palmdale Boulevard)</td>
<td>52</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Sierra Highway</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6th Street East</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: DRIM, 2016.

The two commercial properties that would require full acquisition and relocation are a Domino’s Pizza franchise (602 E Palmdale Boulevard) and an independent Japanese owned Soya restaurant (38404 6th St East. The location of these properties can be seen in Figure 2.1.3-2. They are similar in size and requirements, in that they would both require a replacement site with proper zoning, visibility, access, and off-street parking. Completion of any necessary tenant improvements and reinstallation of equipment would be accomplished through the City’s relocation program. A search was conducted for possible relocation space options within Palmdale, Lancaster, and the Antelope Valley. The search focused on retail space within a similar size range to that of the subject businesses. Most of the sites found were located in Palmdale. The results of that survey are detailed in Table 2.1.3-8.

According to the DRIM prepared for this project, it has been determined that the project would not result in substantial impact to owners, tenants, businesses, or persons in possession of real property to be acquired who would qualify for relocation assistance benefits or entitlements under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. This determination is based on the low number (i.e., two) of displaced commercial uses and a plethora of available local retail space into which they may possibly relocate. These uses are not particularly unique, and it is not anticipated that relocation of these two uses would cause any significant detriment to the community. There are two other Domino Pizza franchises nearby, one in Palmdale and the other in Lancaster. In identifying possible replacement space for Domino’s Pizza, there is a distance to be maintained between other Domino’s Pizza franchises to avoid territorial encroachment. Typical franchise agreements specify a 1- to 3-mile radius be maintained between locations. The closest Domino’s Pizza to the subject site is approximately 5 miles away in Palmdale, and it is assumed it would not conflict with this potential proximity restriction. Potential relocation sites greater than 5 miles from the nearest Domino’s Pizza franchise are scattered throughout Palmdale, thus providing numerous relocation site options that
are far enough away from the other Domino’s Pizza locations in Palmdale. Soya restaurant is a Japanese restaurant, of which there are many others in and around Palmdale. The search for replacement site options was focused on Palmdale, and given the large number of available retail spaces therein, it is realistic that both businesses would be able to relocate within a reasonable distance from their current locations.

Figure 2.1.3-2: Properties Requiring Relocation
Table 2.1.3-8: Summary of Commercial Properties Requiring Relocation

<table>
<thead>
<tr>
<th>APN</th>
<th>Name &amp; Address</th>
<th>Building Size (square feet)</th>
<th>Number of Replacement Site Options Identified</th>
<th>Current Zoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>3009-013-014</td>
<td>Domino’s Pizza 602 E. Palmdale Boulevard</td>
<td>1,557</td>
<td>14</td>
<td>M1</td>
</tr>
<tr>
<td>3008-027-024</td>
<td>Soya Restaurant 38404 6th Street East</td>
<td>1,016</td>
<td>37</td>
<td>CS</td>
</tr>
</tbody>
</table>

Source: DRIM, 2016.

Construction of the Build Alternative would require removal of approximately 54 on-street parking spaces along both sides of SR-138 (Palmdale Boulevard) between Sierra Highway and 10th Street East (see Figure 2.1.3-3). Results of the parking survey conducted in December 2014 for 2 days during the midweek indicated that parking spaces along this roadway segment are underused, with a record of 18 cars being parked over the survey period. During the survey period, a minimum of 80 parking spaces were available in Lots A, B, C, and D at any given time. Based on the number of available parking spaces in Lots A, B, C, and D, it was determined that the loss of on-street parking spaces can easily be accommodated at the locations identified.

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

**No Build Alternative**

Avoidance, minimization, and/or mitigation measures are not required.

**Build Alternative**

Avoidance and minimization measures shall include the following:

**COM-1:** Provide relocation assistance and counseling to displaced persons and businesses in accordance with the Federal Uniform Relocation Assistance and Real Properties Acquisition Polices Act, as amended, to ensure adequate relocation for displaced persons and businesses. All eligible displaces will be provided moving expenses. All benefits and services will be provided equitably to all relocatees without regard to race, color, religion, age, national origins, and disability as specified under Title VI of the Civil Rights Act of 1964.

**COM-2:** Provide ROW agents who are bilingual or have translators to assist with the diverse population within the area during the relocation process.
Figure 2.1.3-3: Parking Impact

<table>
<thead>
<tr>
<th>LEGEND</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON-STREET PARKING REMOVAL</td>
</tr>
<tr>
<td>AVAILABLE PARKING LOCATIONS</td>
</tr>
<tr>
<td>EXISTING RIGHT-OF-WAY</td>
</tr>
<tr>
<td>PROPOSED ROADWAY</td>
</tr>
</tbody>
</table>

**RESULTS OF TWO-DAY, MID-WEEK PARKING SURVEY**

<table>
<thead>
<tr>
<th></th>
<th>MAXIMUM No. OF VEHICLES PARKED ON-STREET (SIERRA Hwy to 9TH St E)</th>
<th>MAXIMUM No. OF VEHICLES PARKED ON-STREET (9TH St E to 10TH St E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH SIDE</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>SOUTH SIDE</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL MAXIMUM No. OF VEHICLES PARKED ON-STREET</td>
<td><strong>18</strong></td>
<td></td>
</tr>
<tr>
<td>TOTAL MINIMUM No. OF PARKING SPACES AVAILABLE (LOT A, B, C &amp; D)</td>
<td><strong>80</strong></td>
<td></td>
</tr>
</tbody>
</table>
2.1.3.3 Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2016, this was $24,300 for a family of four.

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

Affected Environment

The presence of low-income and minority populations was determined through the use of U.S. Census of Population and Housing data. Demographic data were obtained for the various block groups within the study area, identified in Table 2.1.3-1. Census data for the block groups were compared to the local city and countywide demographics to help determine where disproportionate impacts on low-income and minority residents may occur. Minority individuals, as defined by the CEQ, include members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black; or Hispanic.

The combined percentages of minority populations within the study area and communities compared to their respective city and county are summarized in Table 2.1.3-9 (see additional tables with demographic composition breakdowns in Section 2.1.3.1, Community Character and Cohesion). As seen in the table, a very high percentage of minority populations exist within the study area, especially in comparison to the overall local city demographics and countywide data for minority populations. Data on the exact location of minority populations are not provided by the U.S. Census Bureau or collected by any local jurisdictions in the study area at a scale in which parcels can be specifically identified.

Table 2.1.3-9: Summary of Minority and Low-Income/Poverty Status Population Demographics

<table>
<thead>
<tr>
<th>Topic</th>
<th>Palmdale Study Area</th>
<th>City of Palmdale</th>
<th>Los Angeles County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Minority Population</td>
<td>85%</td>
<td>73%</td>
<td>70%</td>
</tr>
<tr>
<td>Low-Income Status Population</td>
<td>52%</td>
<td>19%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010; ACS, 2014.
The percentage of low-income populations within the study area compared to their respective city and county are also summarized in Table 2.1.3-9 (see additional tables with breakdowns by income level in Section 2.1.3.1, Community Character and Cohesion). As seen in the table, the level of low-income populations within the study area is much greater in comparison to the overall city and county.

**Potential Impacts**

As detailed in the description of the affected environment, the percentages of minority and low-income populations in the study area are greater than that of the larger city and county areas. This analysis determines if any disproportionately high and adverse effects from the Build Alternative or No Build Alternative would be predominantly borne by minority or low-income populations, or would be appreciably more severe or greater in magnitude to minority or low-income populations compared to the effects on non-minority or non-low-income populations.

The analysis below examines the ways in which impacts associated with the Build Alternative, including the No Build Alternative, may affect minority and low-income populations, and a determination is then made whether any alternative results in disproportionately high and adverse effects.

**No Build Alternative**

Given the absence of new transportation infrastructure, certain impacts would be less substantial than the effects described for the Build Alternative; however, certain adverse effects on minority or low-income populations in the study area would arise as a result of transportation needs left unmet by the No Build Alternative. These effects would include direct impacts and indirect effects that are typically caused by traffic congestion and impaired mobility, longer travel times, and increased air pollution and noise. The economic benefits associated with implementation of the project would also not be realized. Because these effects would not be concentrated in any particular location, minority and low-income and non-minority and non-low-income populations would be similarly affected. Therefore, impacts associated with the No Build Alternative would not be predominantly borne by a minority or low-income population, nor would these impacts appear to be appreciably more severe or greater in magnitude than those experienced by non-minority or non-low-income populations.

**Build Alternative**

Although the effects of the project would occur in an area having a population that is largely minority and low-income, these effects cannot reasonably be considered disproportionately high and adverse under the circumstances. All Census block groups in the project study area are composed of substantial portions of minority and low-income populations; however, only a relatively small linear portion of the proposed Build Alternative would actually be located within the direct impact area, and most of the residents within the Census block groups through which the project would traverse are not likely to be directly affected by the proposed Build
Alternative. With the exception of those properties located on SR-138 (Palmdale Boulevard) and Sierra Highway, most of the residences dispersed throughout these census tracts and block groups are located a few blocks from the proposed Build Alternative and would not be affected any more so than the other community members. Additionally, as discussed in Section 2.1.3.1, there would be no effects on neighborhood integrity and community cohesion.

The Build Alternative would require relocation of two businesses – a Domino’s Pizza and a Soya restaurant. The Soya restaurant is minority owned; however, according to the DRIM, adequate replacement properties are available for these relocations under the Build Alternative. Therefore, a disproportionate impact would not occur due to the relocations required under the Build Alternative.

Other resource areas with potential impacts include noise, visual, and air quality. The effects of increased noise and changes in visual character are not confined to limited areas but rather dispersed over the length of the project and are not in themselves expected to affect the overall character of the environmental justice population areas. Additionally, any potential visual and noise impacts would be minimized with avoidance and minimization measures described in Sections 2.1.6, Visual and Aesthetics, and 2.2.7, Noise, respectively. Potential impacts from air quality would be temporary during the construction period, and would be minimized with the avoidance and minimization measures described in Section 2.2.6, Air Quality. Impacts from other resource areas are not expected to result in impacts on the community, including minority and low-income populations. Because these impacts would be distributed similarly throughout SR-138 (Palmdale Boulevard) and Sierra Highway, impacts would not fall disproportionately on low-income and minority populations.

As it would for other community members who are not members of the minority or low-income population groups, the Build Alternative would also provide benefits for the minority and low-income populations within the study area. Goals of the project are to relieve traffic congestion and improve traffic operations at the SR-138 (Palmdale Boulevard) / Sierra Highway intersection by increasing the traffic capacities along adjacent segments of these two roadways and by improving railroad preemption. Improving railroad preemption would reduce vehicle queuing and improve traffic safety at the SR-138 (Palmdale Boulevard) at-grade UPRR and Metrolink crossing between 6th Street East and Sierra Highway. The project also would improve safety along SR-138 (Palmdale Boulevard) and Sierra Highway by increasing the number of travel lanes, adding left-turn and right-turn pockets where needed, widening the shoulders, and adding bicycle lanes. The project would be designed to implement the principles of “Complete Streets.” The project would better accommodate anticipated traffic increases, thereby minimizing delays and potential safety hazards. The Build Alternative would enhance safety by providing improvements to the following existing features:
• Upgrading traffic signal operations at the railroad crossing
• Installing off-quadrant flashing lights and pedestrian gates on each approach of the sidewalks crossing the railroad
• Widening and increasing the height of the median islands at the railroad crossing to provide safe channelization
• Upgrading existing nonstandard pedestrian accessibility features to comply with current ADA standards

These benefits would be shared among all of the study area populations.

Therefore, with implementation of avoidance and minimization measures, impacts associated with the Build Alternative would not be predominantly borne by a minority or low-income population, nor would these impacts be appreciably more severe or greater in magnitude than those experienced by non-minority or non-low-income populations.

Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

Avoidance, minimization, and/or mitigation measures are not required.

Build Alternative

Based on the above discussion and analysis, the Build Alternative would not cause disproportionately high and adverse effects on any minority or low-income populations per EO 12898 regarding environmental justice. Although the project would not cause disproportionately high and adverse effects on any minority or low-income populations, the following minimization measures and other measures proposed elsewhere in this environmental document would minimize impacts on the local communities, including low-income and minority populations.

COM-3: Involve low-income and minority status populations, through public outreach efforts, throughout the various phases of the project to address their concerns and needs.
2.1.4 Utilities/Emergency Services

This section addresses potential impacts on public utilities and emergency services that would result from construction of the proposed project. Short-term construction impacts on public utilities and emergency services are addressed in Section 2.4, Construction Impacts.

Regulatory Setting

California’s Code of Regulations, Streets and Highways Code, Sections 700-711 discusses utility relocation policies and procedures. PRC 21083, 21087, and CEQA Guidelines Section 15126.2(a) require lead agencies to assess the impact of a proposed project by examining alterations in the human use of land, including public services. Compliance with CPUC GO 131-D is required if power lines operating at 50 kilovolts (kV) or higher are to be relocated.

Affected Environment

This section was based, in part, on data collected by project consultants and information provided by local public agencies.

Public and Private Utilities

Public utilities in the project area include electricity, natural gas, telephone, cable television, potable water, and sewer. Electricity is provided by Southern California Edison, natural gas is provided by Southern California Gas Company, telephone service is provided by AT&T, and cable service is provided by Time Warner Cable. Palmdale Water District provides water to the project area, and sewer service is provided by Los Angeles County Sanitation District Number 20. Water treatment is provided by Palmdale Water District treatment plant. In addition to these utilities, Waste Management Inc. collects solid wastes for disposal at the Antelope Valley Public Landfill I.

Fire Protection and Emergency Services

Emergency services in the project area include fire and police protection services and medical services. The nearest hospital is Palmdale Hospital Medical Center at 38600 Medical Center Drive, which provides 24-hour emergency service; the hospital is approximately 1.3 miles west-northwest of the western end of the project alignment. Los Angeles County Fire Department provides fire protection services to the project area from Station Number 37 at 38318 9th Street East, approximately 500 feet south of the project alignment.

Police protection is provided by Los Angeles County Sheriff’s Department, with additional services provided by California Highway Patrol (CHP). The closest police station to the project area is the Los Angeles County Sheriff Station located at 750 East Avenue Q, near the intersection of Sierra Highway and Avenue Q. The CHP Antelope Valley Office is located at 2041 West Avenue I in Lancaster.
Potential Impacts

Potential impacts on public utilities and services were determined by inventorying those facilities that were within 0.5 mile of the project alignment. The assessment was based on such factors as safety, circulation, accessibility, and disruption of operation during construction and operation of the proposed project. Facilities were evaluated to determine which ones would be directly or indirectly affected by the proposed project.

Utilities

No Build Alternative

The proposed project would not be built under the No Build Alternative; therefore, this alternative would have no impact on utilities, including relocation of facilities.

Build Alternative

Utilities (e.g., water lines, sewer laterals, electrical connections/lines/poles, natural gas service lines, street lights, fire hydrants, and cable television lines and utility boxes) in the project ROW could be abandoned, removed, relocated, or replaced due to project construction.

Coordination with utility companies is a standard procedure during the design phase. Utility companies would be given enough notice to relocate their facilities before construction or at a later stage of construction as appropriate. Utilities would be relocated using standard engineering practices to avoid substantial service disruption.

The Build Alternative would impact utilities at approximately 124 locations along the alignment (see Table 2.1.4-1). CPUC GO 131-D exempts from permitting requirements (and thus from CEQA review) those relocations of less than or equal to 2,000 linear feet. All potential relocations identified in the utilities conflict matrix prepared as part of the Draft Project Report would be less than 2,000 feet. Appendix G provides information on the owner, type, and location of each utility affected by the Build Alternative.

Emergency Services

No Build Alternative

The proposed project would not be built under the No Build Alternative; therefore, this alternative would have no immediate impacts to emergency services. As LOS on SR-138 (Palmdale Boulevard) deteriorates in the future, response times of emergency response vehicles could increase.

Build Alternative

The nearest fire and police stations are located within 0.5 mile of the project footprint. The Build Alternative would not result in direct impacts on fire or police services or on medical facilities. As noted in Section 2.4, Construction Impacts, construction activities would be coordinated with police and fire services to minimize disruption of those services.
Table 2.1.4-1: Utilities Affected by the Build Alternative

<table>
<thead>
<tr>
<th>Utility Within Project Limits</th>
<th>Facility Impacted by the Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATT</td>
<td>Telecommunications manholes (8), Communication Vault (1)</td>
</tr>
<tr>
<td>City of Palmdale (Sewer) and Los Angeles County Sanitation District</td>
<td>Sewer manhole (5)</td>
</tr>
<tr>
<td>Palmdale Water District</td>
<td>Air release valves (5), 16-inch line (1), fire hydrant (7), water meters (41), Post Indicator Valve (1),</td>
</tr>
<tr>
<td>Southern California Edison</td>
<td>Electric meter (1); signal cabinet (1), utility pedestal (10), box culvert (1), utility vault (2) (5), standpipe vent (3), street lights (51), Manhole Vent (1)</td>
</tr>
<tr>
<td>Southern California Gas Company</td>
<td>Gas meter vaults (25), 4-inch line (2), Underground Electrical (2)</td>
</tr>
<tr>
<td>Time Warner Cable</td>
<td>Telecommunications vaults (18)</td>
</tr>
<tr>
<td>Level 3 Communications</td>
<td>No impacted facilities</td>
</tr>
<tr>
<td>Sprint</td>
<td>No impacted facilities</td>
</tr>
</tbody>
</table>


Avoidance, Minimization, and/or Abatement Measures

No Build Alternative

Avoidance, minimization, and/or mitigation measures are not required.

Build Alternative

Impacts on utilities and emergency services would be avoided as part of the project design. Implementation of standard conditions of approval and close coordination with the utilities and emergency service providers would further minimize impacts on utilities and facilities. Because there would be no impacts on utility systems or emergency services over the long term, no mitigation measures are required. This section identifies best management practices (BMPs) that would be followed during construction.

SC-UT-1: Caltrans and City will coordinate with all affected private and public service utilities during the design stage to identify any potential conflicts with existing utilities. This process will include evaluating ways to avoid utility relocations by refining the project design or protecting existing utilities in place. After seeking approval from utility providers, final measures will be incorporated into the final plans and specifications.
2.1.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

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

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

Affected Environment

The information in this section is based on the Traffic and Intersection Control Evaluation Study Report prepared for the proposed project (Parsons, 2016). The traffic analysis was prepared in close coordination with Caltrans Traffic Engineer. Study methodologies and key decisions made as part of the traffic analysis for this project were discussed and concurred by Caltrans Traffic Engineer overseeing the design development of this project.

The Study Area for traffic and transportation consists of the proposed project alignment and adjacent road segments. Land uses along the alignment and adjacent areas consist of low- to medium-density urban development, including Palmdale City Library and Palmdale City Hall. A UPRR/Metrolink two-track rail line crosses SR-138 (Palmdale Boulevard) between 6th Street East and Sierra Highway; rail traffic causes periodic queuing of cars on SR-138 (Palmdale Boulevard) and Sierra Highway. The crossing is approximately 180 feet east of the 6th Street East intersection and approximately 200 feet west of the Sierra Highway intersections with SR-138 (Palmdale Boulevard). The crossing is equipped with two curb-mounted CPUC Standard 9 (flashing light signal assembly with automatic gate arm) warning devices, two median-mounted CPUC Standard 8 (flashing light signal assembly) warning devices, railroad advanced warning signage, and pavement markings.

Robert St. Clair park, located on a north-south alignment parallel and next to the rail line, crosses SR-138 (Palmdale Boulevard) between the railroad tracks and Sierra
Highway. On-street parking on SR-138 (Palmdale Boulevard) is allowed east of Sierra Highway but prohibited west of Sierra Highway.

**Major Roadways**

Major roads in the study area, as shown in Figure 2.1.5-1, include:

- **SR-138 (Palmdale Boulevard).** West of SR-14, SR-138 (Palmdale Boulevard) is a four-lane regional arterial with a speed limit of 50 mph from 10th Street West to 5th Street West, and 45 mph from 5th Street West to the SR-14 southbound ramp terminal intersection. From SR-14, traveling east to 25th Street East, the speed limit on SR-138 (Palmdale Boulevard) is 40 mph, and the facility serves a highly concentrated general commercial area. East of 25th Street East to just beyond 35th Street East, SR-138 (Palmdale Boulevard) is lined by mixed commercial and single-family residential land uses, and the speed limit changes to 45 mph. From 35th Street East to 47th Street East, SR-138 (Palmdale Boulevard) is surrounded by mainly open space, but the land use is zoned for light industry, single-family residential, and general commercial uses. The speed limit on this portion of the roadway is 55 mph.

- **Division Street.** Division Street is a two-lane minor arterial street running in a north–south direction. It connects to East Avenue P-12 on the northern end and 6th Street East on the southern end.

- **Fifth Street East.** Fifth Street East is a two-lane minor arterial street running in a north–south direction. It connects to East Avenue Q on the northern end and Avenue S on the southern end.

- **Sixth Street East.** Sixth Street East is a two-lane collector street running in a north–south direction. It provides direct access to Palmdale Transportation Center Station. Sixth Street East ends at East Avenue P-8 on the northern end and intersects with East Avenue R-8 on the southern end.

- **Sierra Highway.** Sierra Highway is a four-lane major arterial running in a northwest to southeast direction. From Columbia Way/Avenue M to Avenue P/ Rancho Vista Boulevard, the speed limit is 65 mph. From Rancho Vista Boulevard to Pearblossom Highway, Sierra Highway is a four-lane major arterial with speed limits ranging from 50 to 60 mph. Sierra Highway serves residential, commercial, and industrial areas.

- **Tenth Street East.** Tenth Street East is a two-lane major arterial street running in a north–south direction. From the Lockheed Martin facility north of Avenue P to Avenue Q, the road serves commercial and industrial areas. At Avenue Q, 10th Street East widens to four lanes and continues to SR-138 (Palmdale Boulevard). From SR-138 (Palmdale Boulevard) to Avenue S, 10th Street East is a two-lane minor arterial roadway.
Figure 2.1.5-1: Major Roadways within Project Area and Study Intersections and Vehicle Classification Counts
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Bicycle Facilities

Class II bicycle lanes exist along SR-138 (Palmdale Boulevard) between 6th Street East and Sierra Highway, along 5th Street East south of SR-138 (Palmdale Boulevard), and along 6th Street East north of SR-138 (Palmdale Boulevard). Sierra Highway is designated as a Los Angeles County Bikeway, Class I facility, and a Palmdale Adopted Master Plan Bike Route within the project’s study area.

Pedestrian Facilities

Sidewalks are present on both sides of SR-138 (Palmdale Boulevard) and on Sierra Highway within the proposed project limits. Crosswalks are present at signalized intersections on both roadways within the proposed project limits.

Transit Facilities and Users

AVTA has 45 local transit buses that run primarily on 13 routes. Transit vehicles seat 38 to 40 passengers and have 2 wheelchair positions. All buses can kneel for passengers who have difficulty boarding. Operating hours vary by route, with Route 1 operating from 5:30 a.m. to 11:45 p.m., Monday through Friday, and 6:00 a.m. to 9:45 p.m. on Saturday and Sunday. The frequency of service varies by route and time of day. Route 1 weekday headways are 30 to 60 minutes, while weekend headways are 60 minutes. Four AVTA bus routes pass through the SR-138 (Palmdale Boulevard) study area—Routes 1, 2, 3, and 10.

Route 1. Buses northbound on Route 1 depart the intersection of Avenue S and 47th Street East, and travel north and west to the Route 1 terminus at the intersection of Sierra Highway and Lancaster Boulevard. Route 1 enters the SR-138 (Palmdale Boulevard) study area traveling westbound on SR-138 (Palmdale Boulevard). At the intersection of SR-138 (Palmdale Boulevard) and 6th Street East, Route 1 turns north and departs the study area.

Route 2. Route 2 buses depart the Antelope Valley Mall eastbound and travel south and east to the Route 2 terminus at the intersection of East Avenue S and 47th Street East. Route 2 passes through the SR-138 (Palmdale Boulevard) study area along SR-138 (Palmdale Boulevard) between SR-14 and 10th Street East.

Route 3. Buses on Route 3 depart Antelope Valley Mall eastbound and travel south and east to the Route 3 terminus at the intersection of East Avenue S and 47th Street East. Route 3 enters the SR-138 (Palmdale Boulevard) study area traveling southbound on 10th Street East where it crosses SR-138 (Palmdale Boulevard). Route 3 continues on 10th Street East to Avenue S, where it turns east.

Route 10. Route 10 buses depart the intersection of Avenue S and 47th Street East northbound, traveling north and west to the Route 10 terminus at the University of Antelope Valley. Route 10 enters the SR-138 (Palmdale Boulevard) study area westbound on SR-138 (Palmdale Boulevard). Route 10 continues along SR-138 (Palmdale Boulevard) to 6th Street East, where it turns north and exits the study area.
The AVTA bus routes near the SR-138 (Palmdale Boulevard) study area are shown in Figure 2.1.5-2.

**Figure 2.1.5-2: Antelope Valley Transit Authority Bus Routes near the SR-138 Study Area**

**Parking**

On-street parking is permitted on both sides of SR-138 (Palmdale Boulevard) between Sierra Highway and 10th Street East. To determine the current on-street parking demand along SR-138 (Palmdale Boulevard), parking was surveyed over 2 midweek days, as shown in Figure 2.1.5-3. On December 10 and 11, 2014 (Wednesday and Thursday), beginning at 6:00 a.m. and ending at 6:00 p.m., vehicles parked in the survey area were counted at 30-minute intervals.

The 2-day survey results are summarized in the traffic study (Parsons, 2016). The survey shows that the maximum number of vehicles parked on the street along SR-138 (Palmdale Boulevard) between Sierra Highway and 9th Street East in any given 30-minute interval was approximately 11 vehicles—5 vehicles on the north side and 6 vehicles on south side. Similarly, the maximum number of vehicles parked between 9th Street East and 10th Street East was approximately 7 vehicles—4 vehicles on the north side and 3 vehicles on the south side.
Level of Service

**Existing Peak-Hour Intersection Operations**

Vehicle turning movements were counted at the study intersections in May 2014 during the morning (AM) peak period (6:00–9:00 a.m.) and afternoon (PM) peak period (3:00–7:00 p.m.) and checked against SCAG model forecasts. The peak-hour volumes used in the analysis were the highest single hour of traffic during each of the peak periods. Intersection counts with detailed vehicle-turning movements, pedestrian and bicycle counts, and train observations are included in Appendix A of the traffic study (Parsons, 2016).

Seven-day, 24-hour vehicle classification counts along SR-138 (Palmdale Boulevard) were collected to identify the various types of vehicles during the weekday and weekends. The study intersections and roadway segment data locations are presented in Figure 2.1.5-1 and listed below.

Study intersections include SR-138 (Palmdale Boulevard) intersections with:

- SR-14 southbound ramps
- SR-14 northbound ramps
- Division Street
- 3rd Street East
- 5th Street East
- 6th Street East Street
- Sierra Highway
- 9th Street East
• 10th Street East
• 11th Street East
• 12th Street East
• 15th Street East
• 17th Street East
• Sierra Highway/East Avenue R

Roadway segments studied include SR-138 (Palmdale Boulevard):

• West of SR-14 southbound ramps
• West of Division Street
• West of 5th Street East
• East of Sierra Highway
• West 12th Street East
• East of 17th Street East

Existing LOS at intersections along the proposed project alignment during the AM and PM peak hours were evaluated (see Table 2.1.5-1). LOS calculations are provided in Appendix B of the traffic study (Parsons, 2016). As shown in Table 2.1.5-1, the signalized intersections in the study area operate at LOS D or better during peak hours. The analysis indicates that minor movements (northbound/southbound) at unsignalized intersections experience delay. Based on field observations, however, unsignalized intersections operate at an acceptable LOS due to gaps in the flow of traffic created by upstream and downstream signalized intersections. Intersections within the proposed project limits operate at acceptable LOS.

<table>
<thead>
<tr>
<th>Study Intersection (with SR-138 [Palmdale Boulevard])</th>
<th>Traffic Control</th>
<th>Peak Period Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOS</td>
</tr>
<tr>
<td>1 SR-14 SB off-ramp</td>
<td>Signal</td>
<td>C</td>
</tr>
<tr>
<td>2 SR-4 NB off-ramp</td>
<td>Signal</td>
<td>C</td>
</tr>
<tr>
<td>3 Division Street</td>
<td>Signal</td>
<td>C</td>
</tr>
<tr>
<td>4 3rd Street East</td>
<td>Signal</td>
<td>D</td>
</tr>
<tr>
<td>5 5th Street East</td>
<td>Signal</td>
<td>D</td>
</tr>
<tr>
<td>6 6th Street East*</td>
<td>Signal</td>
<td>C</td>
</tr>
<tr>
<td>7 Sierra Highway*</td>
<td>Signal</td>
<td>C</td>
</tr>
<tr>
<td>8 9th Street East</td>
<td>Signal</td>
<td>D</td>
</tr>
<tr>
<td>9 10th Street East</td>
<td>Signal</td>
<td>C</td>
</tr>
<tr>
<td>10 11th Street East**</td>
<td>Stop–NB/SB</td>
<td>F</td>
</tr>
<tr>
<td>11 12th Street East</td>
<td>Stop–NB/SB</td>
<td>F</td>
</tr>
</tbody>
</table>

Table 2.1.5-1: Existing (2014) Levels of Service

SR-138 (5th Street East to 10th Street East) Improvements Project • 2-50
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<table>
<thead>
<tr>
<th>Study Intersection (with SR-138 [Palmdale Boulevard])</th>
<th>Traffic Control</th>
<th>Peak Period Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOS</td>
</tr>
<tr>
<td>12 15th Street East</td>
<td>Stop–NB/SB</td>
<td>D</td>
</tr>
<tr>
<td>13 17th Street East</td>
<td>Signal</td>
<td>C</td>
</tr>
<tr>
<td>14 Avenue R and Sierra Highway</td>
<td>Signal</td>
<td>C</td>
</tr>
</tbody>
</table>

Notes: AM – morning; PM – evening
*With railroad signal preemption, the eastbound left, through and right turn volumes at Sierra Highway and westbound left, through and right turn volumes at 6th Street East will be cleared.
**Stop controlled intersection level of service and delay results are for the worst approach.
Green shade signifies intersections within Project limits.


Traffic Accident Data

Accident rates on SR-138 (Palmdale Boulevard) between Post Mile (PM) 044.200 and PM 044.700 are computed from Caltrans’ TASAS Table B. The accident rates cover a 3-year period from April 1, 2012, through March 31, 2015. The TASAS Table B data for the last 3-year period (2012 to 2015) are summarized in Table 2.1.5-2.

Table 2.1.5-2: Existing Accident Rates on SR-138 (Palmdale Boulevard) (2012-2015)

<table>
<thead>
<tr>
<th>Location</th>
<th>MVM</th>
<th>Number</th>
<th>Actual</th>
<th>Rate</th>
<th>State Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-138 PM 44.2/44.7</td>
<td>15.40</td>
<td>93 1 45</td>
<td>0.065 2.99 6.04</td>
<td>0.010 0.60 1.45</td>
<td></td>
</tr>
</tbody>
</table>

Notes: F - fatal; I - injury; MVM - million vehicle miles; SR – State Route; PM – Post Mile.

Source: Caltrans TASAS.

The rate of total accidents for SR-138 (Palmdale Boulevard) is 4.2 times the statewide average for similar highway sections. Of the accidents recorded, 28 (26.2 percent) occurred due to speeding, 14 (13.1 percent) due to failure to yield and 10 (9.3 percent) due to improper turns. The remaining occurred due to other violations (26.2 percent), driving under the influence (9.3 percent), following too closely (8.4 percent), improper driving (0.9 percent), or unknown reasons (6.5 percent). According to the TASAS Selective Accident Retrieval TSAR Accident Summary, most of the accidents were rear ends (49.5 percent) and broadsides (27.1 percent).
Potential Impacts

This section discusses permanent impacts on traffic and the circulation system as a result of project implementation. Temporary impacts during project construction are discussed in Section 2.4, Construction Impacts.

No Build Alternative

Roadway Facilities

Intersection Level of Service

The opening year for the proposed project is scheduled to be 2020, 3 to 4 years later than existing conditions. Due to this near-term implementation, the future forecast volumes for the Build Alternative and No Build Alternative conditions are assumed to be the same. The projected opening year of the SR-138 (Palmdale Boulevard) improvements project is earlier than the project opening year for the High Desert Corridor project, so the planned interchange improvements at SR-14 were not included in this analysis.

Intersection analysis results for the No Build Alternative are presented in Table 2.1.5-3. All of the intersections within the proposed project limits would operate at LOS D or better during the morning (AM) and afternoon (PM) peak hours, except when the railroad gates are lowered. With the existing geometry (i.e., no-build conditions), several traffic cycles may be needed to clear the queues at both ends of the railroad tracks.

Traffic volumes were forecasted for the design year (2040) no-build scenario. The design-year no-build traffic volumes reflect the SR-138 (Palmdale Boulevard) interchange improvements proposed in conjunction with the High Desert Corridor project. Widening of the 10th Street East northbound and southbound approaches to SR-138 (Palmdale Boulevard), consistent with the Palmdale General Plan Circulation Element, is not reflected in the intersection LOS analysis presented in Table 2.1.5-4.

A bottleneck at one intersection constrains downstream traffic volumes, which in turn affects the average delay. The Year 2040 no-build analysis reflects this relationship. The intersection operation at SR-138 (Palmdale Boulevard) and Sierra Highway, for example, is reported as LOS F during the PM peak hour. Downstream intersections at 6th Street East (westbound) and 9th Street East (eastbound) operate at LOS B because traffic throughput is constrained at Sierra Highway.
Table 2.1.5-3: Opening Year (2020) No Build Alternative and Build Alternative Levels of Service

<table>
<thead>
<tr>
<th>Study Intersection (with SR-138 [Palmdale Boulevard])</th>
<th>Control</th>
<th>Design Year 2020 Peak Period Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No-Build</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AM LOS</td>
</tr>
<tr>
<td>1 SR-14 SB off-ramp</td>
<td>Signal</td>
<td>C 22.8</td>
</tr>
<tr>
<td>2 SR-4 NB off-ramp</td>
<td>Signal</td>
<td>C 21.0</td>
</tr>
<tr>
<td>3 Division Street</td>
<td>Signal</td>
<td>C 25.4</td>
</tr>
<tr>
<td>4 3rd Street East</td>
<td>Signal</td>
<td>D 50.8</td>
</tr>
<tr>
<td>5 5th Street East</td>
<td>Signal</td>
<td>C 34.4</td>
</tr>
<tr>
<td>6 6th Street East*</td>
<td>Signal</td>
<td>C 20.2</td>
</tr>
<tr>
<td>7 Sierra Highway*</td>
<td>Signal</td>
<td>C 26.5</td>
</tr>
<tr>
<td>8 9th Street East</td>
<td>Signal</td>
<td>C 22.8</td>
</tr>
<tr>
<td>9 10th Street East</td>
<td>Signal</td>
<td>C 22.0</td>
</tr>
<tr>
<td>10 11th Street East Stop–NB/SB</td>
<td>Signal</td>
<td>D 30.0</td>
</tr>
<tr>
<td>11 12th Street East</td>
<td>Signal</td>
<td>D 32.8</td>
</tr>
<tr>
<td>12 15th Street East</td>
<td>Signal</td>
<td>C 44.6</td>
</tr>
<tr>
<td>13 17th Street East</td>
<td>Signal</td>
<td>C 20.6</td>
</tr>
<tr>
<td>14 Avenue R and Sierra Highway</td>
<td>Signal</td>
<td>C 33.3</td>
</tr>
</tbody>
</table>

Notes: NB – northbound, SB – southbound, AM – morning, PM – evening, LOS – level of service.
*With railroad signal preemption, the eastbound left, through and right turn volumes at Sierra Highway and westbound left, through and right turn volumes at 6th Street East will be cleared (See Appendix D of Traffic Study report).
**Reflects traffic control improvements.
Green shade signifies intersections within Project limits.


Table 2.1.5-4: Design Year (2040) No Build Alternative and Build Alternative Levels of Service

<table>
<thead>
<tr>
<th>Study Intersection (with SR-138 [Palmdale Boulevard])</th>
<th>Control</th>
<th>Design Year 2040 Peak Period Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No-Build</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AM LOS</td>
</tr>
<tr>
<td>1 SR-14 SB off-ramp</td>
<td>Signal</td>
<td>B 14.1</td>
</tr>
<tr>
<td>2 SR-4 NB off-ramp</td>
<td>Signal</td>
<td>B 20.0</td>
</tr>
<tr>
<td>3 Division Street</td>
<td>Signal</td>
<td>D 46.3</td>
</tr>
<tr>
<td>4 3rd Street East</td>
<td>Signal</td>
<td>B 19.0</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Study Intersection (with SR-138 [Palmdale Boulevard])</th>
<th>Control</th>
<th>Design Year 2040 Peak Period Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No-Build</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOS</td>
</tr>
<tr>
<td>5 5th Street East</td>
<td>Signal</td>
<td>C 30.3</td>
</tr>
<tr>
<td>6 6th Street East*</td>
<td>Signal</td>
<td>B 14.8</td>
</tr>
<tr>
<td>7 Sierra Highway*</td>
<td>Signal</td>
<td>D 36.3</td>
</tr>
<tr>
<td>8 9th Street East</td>
<td>Signal</td>
<td>B 17.0</td>
</tr>
<tr>
<td>9 10th Street East</td>
<td>Signal</td>
<td>C 20.6</td>
</tr>
<tr>
<td>10 11th Street East**</td>
<td>Stop–NB/SB</td>
<td>F &gt;300</td>
</tr>
<tr>
<td>11 12th Street East</td>
<td>Signal</td>
<td>B 17.3</td>
</tr>
<tr>
<td>12 15th Street East</td>
<td>Signal</td>
<td>C 26.5</td>
</tr>
<tr>
<td>13 17th Street East</td>
<td>Signal</td>
<td>D 18.0</td>
</tr>
<tr>
<td>14 Avenue R and Sierra Highway</td>
<td>Signal</td>
<td>B 37.6</td>
</tr>
</tbody>
</table>

Notes: NB – northbound, SB – southbound, AM – morning, PM – evening, LOS – level of service.
* With railroad signal preemption, the eastbound left, through and right turn volumes at Sierra Highway and westbound left, through and right turn volumes at 6th Street East will be cleared.
** Stop-controlled intersection LOS is presented by minor street delay.
Green shade signifies intersections within Project limits.


**Queuing Analysis**

Queue length was analyzed as part of the intersection operations. The design-year (2040) no-build storage length requirements are provided in Table 2.1.5-5. Under no-build conditions, the intersection queue lengths would be excessive and cause long delays.

**Summary**

On the basis of the anticipated intersection LOS and queuing analysis discussed above, the No Build Alternative would have no significant environmental impacts.

**Parking**

Under the No Build Alternative, parking would remain as described under Affected Environment; no parking spaces would be eliminated.

**Bicycle Facilities**

Under the No Build Alternative, no Class II bicycle lanes between 5th Street and Sierra Highway would be provided. In addition, no extension of Class I bicycle path from the west side of Sierra Highway, southerly to Avenue R, would be constructed.
Chapter 2  •  Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

Table 2.1.5-5: Design Year (2040) No Build Alternative Queue Lengths at Study Intersections

<table>
<thead>
<tr>
<th>Study Intersection (with SR-138 [Palmdale Boulevard])</th>
<th>Control</th>
<th>Queue Length Under 2040 Build Conditions (feet)</th>
<th>Northbound</th>
<th>Southbound</th>
<th>Eastbound</th>
<th>Westbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LT</td>
<td>TH</td>
<td>RT</td>
<td>LT</td>
<td>TH</td>
</tr>
<tr>
<td>SR-14 SB off-ramp</td>
<td>Signal</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>400</td>
<td>—</td>
</tr>
<tr>
<td>SR-4 NB off-ramp</td>
<td>Signal</td>
<td>450</td>
<td>0</td>
<td>375</td>
<td>—</td>
<td>125</td>
</tr>
<tr>
<td>Division Street</td>
<td>Signal</td>
<td>250</td>
<td>75</td>
<td>100</td>
<td>0</td>
<td>150</td>
</tr>
<tr>
<td>3rd Street East</td>
<td>Signal</td>
<td>—</td>
<td>175</td>
<td>—</td>
<td>200</td>
<td>—</td>
</tr>
<tr>
<td>5th Street East</td>
<td>Signal</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>75</td>
<td>125</td>
</tr>
<tr>
<td>6th Street East</td>
<td>Signal</td>
<td>25</td>
<td>75</td>
<td>25</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>Sierra Highway</td>
<td>Signal</td>
<td>250</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>525</td>
</tr>
<tr>
<td>9th Street East</td>
<td>Signal</td>
<td>50</td>
<td>50</td>
<td>—</td>
<td>125</td>
<td>75</td>
</tr>
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<td>10th Street East</td>
<td>Signal</td>
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<td>175</td>
<td>75</td>
<td>175</td>
<td>150</td>
</tr>
<tr>
<td>11th Street East</td>
<td>Stop–NB/SB</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>12th Street East</td>
<td>Signal</td>
<td>125</td>
<td>125</td>
<td>125</td>
<td>175</td>
<td>175</td>
</tr>
<tr>
<td>15th Street East</td>
<td>Signal</td>
<td>25</td>
<td>75</td>
<td>75</td>
<td>25</td>
<td>125</td>
</tr>
<tr>
<td>17th Street East</td>
<td>Signal</td>
<td>—</td>
<td>100</td>
<td>—</td>
<td>75</td>
<td>125</td>
</tr>
<tr>
<td>Avenue R and Sierra Highway</td>
<td>Signal</td>
<td>125</td>
<td>275</td>
<td>275</td>
<td>425</td>
<td>200</td>
</tr>
</tbody>
</table>

Notes: LT- left turn, TH- through traffic, RT- right turn. Green shade signifies intersections within Project limits.


Pedestrian Facilities
Under the No Build Alternative, existing nonstandard pedestrian accessibility features including curb ramps, sidewalks, driveways, and crosswalks would not be upgraded. In addition, the traffic and railroad signal controllers would not be upgraded; thus, there would be no safety improvement for pedestrians and bicycles. Lastly, four-quadrant flashing lights and pedestrian gates on the approaches to each of the sidewalks that cross the railroad track would not be installed to improve the safety of pedestrian pathways.

These pedestrian facility improvements may be undertaken under different project fundings, but not as part of the No Build Alternative.

Transit Facilities
There would be no impact to the existing transit facilities in the project area under the No Build Alternative.
Build Alternative

Roadway Facilities

Intersection Level of Service

Traffic volumes were forecast for the design year (2040) Build Alternative scenario. The design-year Build Alternative traffic volumes reflect the SR-138 (Palmdale Boulevard) interchange improvements proposed in conjunction with the High Desert Corridor project. Widening of the 10th Street East northbound and southbound approaches to SR-138 (Palmdale Boulevard), consistent with the Palmdale General Plan Circulation Element, is not reflected in the intersection LOS analysis presented in Table 2.1.5-4.

With the proposed geometry improvements between 5th Street East and 10th Street East, all of the intersections within the proposed project limits would operate at LOS D or better during the AM and PM peak hours, minimizing the queue lengths at all of the intersections. Even though the unsignalized intersection at 11th Street East is shown in Table 2.1.5-4 as operating at LOS F due to minor street delays, due to anticipated gaps in traffic, this intersection may operate at an acceptable LOS.

Queuing Analysis

Queue length requirements for the Build Alternative are presented in Table 2.1.5-6. The project design accommodates the required storage lengths within the proposed project study limits.

Parking

Construction of the Build Alternative would require removal of approximately 54 on-street parking spaces along both sides of SR-138 (Palmdale Boulevard) between Sierra Highway and 10th Street East. Several nearby parking locations (Lots A, B, C, and D [Figure 2.1.5-3]) could accommodate the loss of on-street parking due to the project. In addition to these parking lots, on-street parking is allowed along 8th Street East, 9th Street East, 10th Street East, East Avenue Q-7, and East Avenue Q-9. All of these on-street and off-street parking spaces are within 325 feet of the curbside parking that would be removed along SR-138 (Palmdale Boulevard). This maximum walking distance is within the design parameters for regional shopping centers, such as Antelope Valley Mall. The parking survey indicates that the loss of on-street parking spaces resulting from the proposed project could be easily accommodated at the locations identified.

Results of the parking survey conducted in December 2014 for 2 days during the midweek indicated that parking spaces along this roadway segment are underused, with a record of 18 cars being parked over the survey period. During the survey period, a minimum of 80 parking spaces were available in Lots A, B, C, and D at any given time. Based on the number of available parking spaces in Lots A, B, C, and D, it was determined that the loss of on-street parking spaces can easily be accommodated at the locations identified. Parking impacts are not considered substantial.
### Table 2.1.5-6: Design Year (2040) Build Alternative Queue Lengths at Study Intersections

<table>
<thead>
<tr>
<th>Study Intersection (with SR-138 [Palmdale Boulevard])</th>
<th>Control</th>
<th>Queue Lengths Under 2040 Build Conditions (feet)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LT</td>
<td>TH</td>
<td>RT</td>
</tr>
<tr>
<td>SR-14 SB off-ramp</td>
<td>Signal</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SR-4 NB off-ramp</td>
<td>Signal</td>
<td>500</td>
<td>0</td>
</tr>
<tr>
<td>Division Street</td>
<td>Signal</td>
<td>275</td>
<td>275</td>
</tr>
<tr>
<td>3rd Street East</td>
<td>Signal</td>
<td>—</td>
<td>225</td>
</tr>
<tr>
<td>5th Street East</td>
<td>Signal</td>
<td>250</td>
<td>125</td>
</tr>
<tr>
<td>6th Street East</td>
<td>Signal</td>
<td>50</td>
<td>125</td>
</tr>
<tr>
<td>Sierra Highway</td>
<td>Signal</td>
<td>100</td>
<td>175</td>
</tr>
<tr>
<td>9th Street East</td>
<td>Signal</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>10th Street East</td>
<td>Signal</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>11th Street East</td>
<td>Stop-NB/SB</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>12th Street East</td>
<td>Signal</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>15th Street East</td>
<td>Signal</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>17th Street East</td>
<td>Signal</td>
<td>—</td>
<td>200</td>
</tr>
<tr>
<td>Avenue R and Sierra Highway</td>
<td>Signal</td>
<td>100</td>
<td>275</td>
</tr>
</tbody>
</table>

Notes: LT- left turn, TH- through traffic, RT- right turn. Green shade signifies intersections within Project limits.


**Bicycle Facilities**

As part of the proposed project, Class II bike lanes will be provided between 5th Street East and Sierra Highway. In addition, a Class I bicycle path will be extended from the west side of Sierra Highway, southerly to Avenue R. These features of the project are beneficial to the area residents of Palmdale. Design details related to the bicycle lanes will be incorporated during the final design phase, as approved by the City and Caltrans.

**Pedestrian Facilities**

The interconnected traffic and rail signal controllers at the railroad crossing initiate a flashing red for all the approaches at 6th Street East and Sierra Highway while the crossing gates are lowered. To improve safety for pedestrians and bicycles and eliminate traffic queuing on the railroad tracks, the traffic and railroad signal controllers would be upgraded and interconnected to provide an advanced pre-emption and special sequential signal phasing. The advanced pre-emption would allow a longer period for traffic to clear the crossing in advance of an approaching train. The special sequential signal phasing would allow northbound/southbound

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through movements at both intersections. The Build Alternative would also install four-quadrant flashing lights and pedestrian gates on the approaches to each of the sidewalks that cross the railroad track to improve the safety of pedestrian pathways. The impacts to pedestrian facilities would be considered beneficial.

**Transit Facilities**
The proposed project would not alter existing transit facilities in the project area.

**Complete Streets**
Complete Streets is a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. The bicycle facilities and pedestrian facilities described above are two elements of a Complete Streets design approach.

**Summary**
Taken collectively, the Build Alternative improvements would substantially improve traffic operations, reduce delay, and improve safety.

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

*No Build Alternative*
Avoidance, minimization, and/or mitigation measures are not required.

*Build Alternative*
The project would generally improve traffic operations, reduce delay at the SR-138 (Palmdale Blvd.) / Sierra Highway intersection, and improve safety within the project area. The safety features incorporated into the project are described in Section 1.5.1.1. Its effects on delay are shown in Table 1-7 and discussed in Section 1.5.1.1. Project design has been undertaken to avoid or minimize impacts to the human environment. No additional avoidance, minimization, or mitigation measures are required.
2.1.6 Visual/Aesthetics

Regulatory Setting

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 U.S.C. 4331[b][2]). To further emphasize this point, FHWA in its implementation of NEPA (23 U.S.C. 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.

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 PRC Section 21001[b]).

Affected Environment

The proposed project is located within the city of Palmdale in the Antelope Valley on the southwestern border of the Mojave Desert, just north of the San Gabriel Mountains in Los Angeles County. The existing visual context is characterized by low-density commercial developments, several government facilities (including Palmdale City Hall and Public Library), the Dr. Robert C. St. Clair Parkway running along much of the length of Sierra Highway within the project area, and vacant or underused parcels. No scenic resources have been identified within the project area. No portion of the project is within an officially designated scenic highway.

Visual Environment

A regional landscape defines those elements of the natural and built environment that together form a unique visual identity of a place or corridor. This regional landscape establishes the general visual environment of the project area, and the specific visual environment on which this assessment is focused is determined by defining the project viewshed and landscape units, which are discussed below in greater depth.

The regional landscape of the project corridor is characterized by planted desert landscaping, low-density land uses, and distant views of the San Gabriel Mountains. The proposed project area is located in downtown Palmdale and consists primarily of commercial/retail uses with some government buildings at the intersection of SR-138 (Palmdale Boulevard) and Sierra Highway. The Dr. Robert C. St. Clair Parkway runs along the west side of Sierra Highway; this landscaped parkway also consists of a Class I bike path with shade trees and other vegetation for much of the project area; however, the bike path ends just north of Avenue R. Two existing rail lines (UPRR and Metrolink) run parallel to Sierra Highway, just west of the parkway, and cross SR-138 (Palmdale Boulevard). Typical views for the project area can be seen in Figure 2.1.6-1.
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Figure 2.1.6-1: Typical Views

Looking west from Sierra Hwy. near Palmdale Blvd.

Looking east from Sierra Hwy. near Palmdale Blvd.

Looking south from Palmdale Blvd. near 9th St.

Looking south along Sierra Hwy. toward Avenue R.

Looking south from the parkway along Sierra Hwy. toward Palmdale Blvd.

Looking west along Palmdale Blvd. toward 5th St.
**Project Viewshed**

A viewshed is the area normally visible from an observer’s viewpoint of location and is limited by the screening/obstruction effects of any vegetation or structures. A viewshed can include views from within the project outward or from outside of the area into the project corridor. While viewpoints represent specific locations within the project area, a viewshed describes what is seen from that viewpoint, including the limits of what can be seen. When these individual points are strung together, the viewsheds create an overall project viewshed that can be used to describe the project area. The viewshed includes the locations of viewers within the project area that are likely to be affected by visual changes brought about by the project features.

For the proposed project, views into the corridor are associated with the cross streets and are generally located near (approximately 0.25 mile) the affected roadways due to the relatively flat nature of the project area. From within the corridor, views out are also generally limited to a short distance due to the flat groundplane and the proximity of buildings.

**Landscape Units**

A landscape unit is a portion of the regional landscape and can be thought of as an outdoor room that exhibits a distinct visual character. They also make it easier to comprehend the study area. The following landscape units were defined within the study area:

- Landscape Unit 1: Palmdale Boulevard
- Landscape Unit 2: Sierra Highway

Landscape Unit 1 consists primarily of single-level commercial properties built between the 1940s and 1980s, the majority in the 1970s and 1980s. Landscape Unit 2 consists of the parkway with a bike path and native landscaping along much of the west side of Sierra Highway. On the east side of the roadway, there is mostly scattered commercial land uses and vacant lots. The Palmdale Sheriff’s Station is located at the northern end of Sierra Highway within the project area on the east side of the street. Also included in Landscape Unit 2 is the Palmdale City Hall at the intersection of SR-138 (Palmdale Boulevard) and Sierra Highway and other associated City buildings that extend southerly along Sierra Highway. Figure 2.1.6-2 identifies the landscape units selected for the proposed project.

**Methodology**

The visual impacts of the proposed project were determined by assessing the existing visual resources, the visual resource change due to the project, and predicting viewer response to that change. The degree of visual quality in a view was evaluated using the following descriptive terms identified in *Visual Impact Assessment for Highway Projects* (FHWA, 1981):
Figure 2.1.6-2: Landscape Units and Key Viewpoint Location
- **Vividness**: Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns (e.g., Niagara Falls is a highly vivid landscape component).

- **Intactness**: 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 landscapes and natural settings (e.g., a two-lane road that meanders through the countryside).

- **Unity**: Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape (e.g., an English or Japanese garden).

The degree of visual character in a view was evaluated using the following FHWA descriptive terms:

- **Scale**: Visual scale is the apparent size relationship between landscape components or features and their surroundings.

- **Diversity**: Diversity is the number of pattern elements, as well as the variety among them and edge relationships between them.

- **Continuity**: Continuity is the uninterrupted flow of pattern elements and the maintenance of visual relationships between immediately connected or related landscape components or features.

- **Dominance**: Dominance is components or specific features in a scene that may be dominant because of prominent positioning, contrast, extent, or importance of pattern elements.

For projects that do not create a significant impact on existing visual character or quality, a more nuanced approach categorizes impact levels as low, moderately low, moderate, moderately high, and high based on the following descriptions:

- **Low**: Low negative change to existing visual resources and low viewer response to that change. May or may not require mitigation.

- **Moderately Low**: Low negative change to the visual resource with a moderate viewer response or moderate negative change to the resource with a low viewer response. Impact can be mitigated using conventional methods.

- **Moderate**: Moderate negative change to the visual resource with moderate viewer response. Impact can be mitigated within 5 years using conventional practices.

- **Moderately High**: Moderate negative change in the visual resource with high viewer response or high negative change with a moderate viewer response. Extraordinary mitigation practices may be required. Landscape treatment required will generally take longer than 5 years to mitigate.

- **High**: High level of negative change in character or a high level of viewer response to the change such that extraordinary architectural design and landscape treatments may not mitigate impacts below a high level. An alternative project design may be required to avoid high negative impacts.
The visual impact is determined by assessing the visual resource change resulting from the project and predicting viewer response to that change. Visual resource change is the total change in visual character and visual quality. The first step in determining visual resource change is to assess the compatibility of the proposed project with the existing visual character of the landscape. The second step is to compare the visual quality of the existing resources with the projected visual quality after the project is constructed. Next, viewer response to the changes is the sum of viewer exposure and viewer sensitivity to the project. The resulting level of visual impact is determined by combining the severity of resource change with the degree to which people are likely to oppose the change.

**Context-Sensitive Solutions**

To address local values, Caltrans uses Context-Sensitive Solutions (CSS) as an approach to plan, design, construct, maintain, and operate its transportation system. These solutions use innovative and inclusive approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. CSS are reached through a collaborative, interdisciplinary approach involving all stakeholders.

**Potential Impacts**

This section discusses permanent impacts on visual and aesthetics resources that would result from the proposed project’s construction. Temporary or construction impacts are discussed in Section 2.4, Construction Impacts.

**No Build Alternative**

Activities that would occur under the No Build Alternative include routine maintenance of the project corridor area. The roadway would not be expanded for additional lanes; therefore, there would be no permanent impacts.

**Build Alternatives**

Changes in the visual environment for travelers on SR-138 (Palmdale Boulevard) and Sierra Highway would primarily consist of views to areas with wider pavement widths, new turn lanes, and continuity of the parkway and bike path along Sierra Highway within the project limits. Two restaurants would be acquired and demolished to accommodate roadway widening (Domino’s Pizza and Soya restaurant), permanently affecting the proposed project’s viewshed. The removal of these buildings would decrease the building density at the Palmdale Boulevard and 6th Street intersection and create more sightlines in and out of the intersection; the portion of the former restaurant properties not resulting in roadway widening would be developed in the future. Few vertical changes would result from the proposed project; no new walls or elevated structures are proposed. One large billboard would be removed along SR-138 (Palmdale Boulevard) located east of the UPPR ROW, resulting in a beneficial impact that would remove vertical intrusions on views. In order to improve safety at the railroad crossing, four-quadrant flashing lights and
pedestrian gates would be installed on the approaches to each of the sidewalks that cross the railroad track. The median islands at the railroad crossing approaches would also be widened and heightened.

**Vegetation Removal:** Vegetation removal would be required during construction; most of this disturbance would occur along Sierra Highway, north and south of SR-138 (Palmdale Boulevard) to allow for the roadway widening. It is anticipated approximately 51 trees would be removed to accommodate the roadway widening; most of these trees are London plane trees (*Platanus x acerifolia*) located along the parkway. About ten of the tree removals would occur along Palmdale Boulevard, where there are few existing trees, and the remainder of the tree removals would occur along the parkway. The existing trees planned for removal within the project area provide minimal shade along the sidewalk; although, they break up the hardscape of the existing project area and create aesthetic interest.

North of Palmdale Boulevard, about 24 trees lining the roadway on the west side of Sierra Highway approximately from the County of Los Angeles Animal Care Center property (38550 Sierra Highway) to Avenue Q-7 would be removed. These trees are either located within the narrow sidewalk or within the grasses lining the parkway path. There are additional trees located farther west from the roadway but within the parkway that would not be removed and would continue to line the parkway path after the planned tree removals. South of Palmdale Boulevard, there would be fewer removals of the trees lining the roadway perimeter (about 17 trees) than north of Palmdale Boulevard. Mitigation measure VA-8 would minimize impacts associated with tree removals in the project area. A complete inventory of the number of tree removals and species will be provided during final design.

**Roadway Paving:** As discussed, a new lane would be added in each direction along the affected streets. The result would be a wider pavement section throughout the project area. The widened pavement would be a noticeable feature for motorists, bicyclists, and pedestrians in the corridor; the added concrete would affect the overall visual quality of the corridor.

**Glare and Lighting:** Substantial glare and lighting impacts are not anticipated. Lamp posts would either be relocated or replaced consistent with the existing design. As mentioned above, the project would also install four-quadrant flashing lights on the approaches to each of the sidewalks that cross the railroad track to improve the safety of pedestrian pathways. No other design features proposed as part of the project would encourage additional glare or lighting impacts. Mitigation measure VA-10 would minimize any lighting or glare intrusions associated with new or relocated light fixtures or other sources of glare.

**Key Viewpoint Analysis**

**Orientation:** As shown in Figure 2.1.6-2, one key viewpoint was chosen to represent the visual changes that would occur as a result of the proposed project. The existing viewpoint is looking north toward the Dr. Robert C. St. Clair Parkway at the northwest corner of the SR-138 (Palmdale Boulevard) and Sierra Highway intersection.
Existing Visual Character/Quality: The existing view depicted in Figure 2.1.6-3a shows the meandering dirt pathways, native shrubs, rocks in the foreground, and larger trees in the background where the existing bikeway extends north along Sierra Highway. Also in the background at this viewpoint, a small portion of the UPRR tracks are shown that run along the west side of the parkway. No high-density land uses are visible in the distant background, which is the typical scale of the project area. At this viewpoint, diversity is low, and the rating for dominance is fairly balanced. The overall visual quality of the view is moderate, with a moderate rating for vividness, intactness, and unity. Visual character is moderate, with moderate ratings for scale, continuity, and dominance. Table 2.1.6-1 quantifies the anticipated changes in visual character and quality, and the effect on viewers for the key viewpoint.

Figure 2.1.6-3a: Key Viewpoint – Pre-Construction View

Figure 2.1.6-3b: Key Viewpoint – Post-Construction View
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Proposed Project Features: The proposed view depicted in Figure 2.1.6-3b shows the roadway changes that would occur at this location, including the additional lanes added to Sierra Highway and the right-hand turn lane. At this location, the viewer would be standing in the crosswalk. Some of the meandering pathways and native plantings would be removed from this viewpoint. The Class I bike path would be extended along Sierra Highway. The larger trees in the background of this viewpoint would remain.

Table 2.1.6-1: Key Viewpoint – Anticipated Changes in Visual Character and Quality, and the Effect on Viewers

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Ratings 7</th>
<th>Remarks (Anticipated changes are shown in the shaded rows)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vividness/Memorability</td>
<td>Existing Condition: 3</td>
<td>Proposed Condition: 3</td>
</tr>
<tr>
<td>Intactness</td>
<td>Existing Condition: 4</td>
<td>Proposed Condition: 3</td>
</tr>
<tr>
<td>Unity</td>
<td>Existing Condition: 3</td>
<td>Proposed Condition: 4</td>
</tr>
<tr>
<td>TOTAL 6</td>
<td>3.33</td>
<td>3.33</td>
</tr>
<tr>
<td>Scale</td>
<td>Existing Condition: 4</td>
<td>Proposed Condition: 3</td>
</tr>
<tr>
<td>Diversity</td>
<td>Existing Condition: 2</td>
<td>Proposed Condition: 2</td>
</tr>
<tr>
<td>Continuity</td>
<td>Existing Condition: 3</td>
<td>Proposed Condition: 3</td>
</tr>
<tr>
<td>Dominance</td>
<td>Existing Condition: 4</td>
<td>Proposed Condition: 4</td>
</tr>
<tr>
<td>TOTAL 6</td>
<td>3.25</td>
<td>3</td>
</tr>
<tr>
<td>Location of Views</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Number of Viewers</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Duration of Views</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TOTAL 6</td>
<td>3.33</td>
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<tr>
<td>Attention of Viewer</td>
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<tr>
<td>Viewer Awareness</td>
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<td>3</td>
</tr>
<tr>
<td>Local Values and Goals</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>TOTAL 6</td>
<td>3.33</td>
<td></td>
</tr>
</tbody>
</table>

1 – Vividness = memorable, striking (5) to plain (1); Intactness = free of encroaching elements (5) to cluttered/lacking integrity (1); and Unity = coherent/harmonious (5) to disjointed/jarring (1). A rating below 1 would only be used for an extremely low rating.

2 – Scale = small (5) to monumental (1); Diversity = complex (5) to monolithic (1); Continuity = harmonious (5) to dissonant (1); and Dominance = balanced (5) to prominent/unbalanced (1). A rating below 1 would only be used for an extremely low rating.
Table 2.1.6-1: Key Viewpoint – Anticipated Changes in Visual Character and Quality, and the Effect on Viewers

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Ratings⁷</th>
<th>Remarks (Anticipated changes are shown in the shaded rows)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing Condition</td>
<td>Proposed Condition⁵</td>
</tr>
</tbody>
</table>

3 – Location = foreground (5) to distant views (1); Number per day = over 100,000 (5) to 20 or less (1); Duration = over 4 hours (5) to less than 1 minute (1). A rating below 1 would only be used for an extremely low rating.

4 – Activity = attention on views (5) to attention focused away (1); Awareness = High (5) to Low (1); and Values = High (5) to Low expectations (1). A rating below 1 would only be used for an extremely low rating.

5 – Proposed (post-construction condition) with avoidance and minimization measures in place. Avoidance and minimization measures are described in Section 3.1.7.4.

6 – Total = sum of attributes divided by number of attributes – e.g., Overall Visual Quality = (vividness + intactness + unity)/3.

7 – Ratings: 1 = Low, 3 = Moderate, 5 = High

Changes to Visual Character: For motorists, bicyclists, or pedestrians on Sierra Highway or SR-138 (Palmdale Boulevard), the new lanes, combined with reduction to the parkway width and extension of the bike lane and plantings comparable to the existing vegetation, would be the most noticeable new elements in this view. Table-2.1.6-2 shows a summary of the key viewpoint analysis.

Table 2.1.6-2: Key Viewpoint Analysis Summary

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Change to Visual Character</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Change to Visual Quality</td>
<td>Low</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Viewer Response</th>
<th>Viewer Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewer Exposure</td>
<td>Moderate</td>
</tr>
<tr>
<td>Viewer Sensitivity</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Ratings for each category were determined by taking the percent change rating from the previous table and averaging these for the Resource Change/Viewer Response columns. These two ratings were then averaged again to determine the anticipated Visual Impact. If unable to average, the higher rating was used.

Anticipated Viewer Response: Motorists, bicyclists, and pedestrians are likely to be aware of the changes in the project area, but their sensitivity would be moderate because the view would be similar in nature to the existing roadway view; no new elements would be added to the viewpoint, just modifications to the existing.
elements. For these viewers, the wider pavement section is not expected to create any substantial changes to the visual environment.

**Resulting Visual Impact:** The moderately low impact to the visual environment is not expected to increase the overall moderate visual quality of the view. Although the roadway would be widened and the view would consist of a greater amount of concrete, the parkway would be replanted consistent with existing plantings and the bike lane would be extended, which adds to the unity of the view by maintaining the character of the existing parkway and providing a continuous path for bicyclists.

**Avoidance, Minimization, and/or Abatement Measures**

**No Build Alternative**

Avoidance, minimization, and/or mitigation measures are not required.

**Build Alternative**

**VA-1:** Develop CSS for the aesthetic and landscape treatments of the project elements that inform the project’s Landscape and Irrigation Plan that will be developed during the plans, specifications, and estimate (PS&E) phase.

**VA-2:** Survey exact locations for all existing trees and include in plan set.

**VA-3:** Protect the drip zone of isolated trees to be preserved during construction with temporary fencing.

**VA-4:** Commence replanting the corridor prior to the end of the construction period to ensure new vegetation is present when project is completed.

**VA-5:** Install trees in a variety of sizes from 36-inch box, 24-inch box, and 15-gallon containers, with 24-inch box trees being the dominant size at installation.

**VA-6:** Use reclaimed/recycled water as sources for all irrigation systems, where feasible, including any recycled/reclaimed water supply within 250 feet of the project corridor.

**VA-7:** Beginning with preliminary design and continuing through final design and construction, save and protect as much existing vegetation in the project area as feasible.

**VA-8:** Provide replacement plants at the rate determined by the City and Caltrans District Landscape Architect. At a minimum, use a replacement ratio of 1:1, unless a higher ratio is required by the City of Palmdale, and focus plantings on drought-tolerant and native species of trees and shrubs to the extent feasible.
VA-9: Design all visible concrete structures and surfaces to visually blend with the adjacent landscaping and natural plantings.

VA-10: For all new or relocated light fixtures and other sources of glare, provide Dark Sky-compliant shielded fixtures that prevent light trespass into the sky and onto adjacent properties, while maximizing light cast onto the ground.
2.1.7 Cultural Resources

Regulatory Setting

The term “cultural resources” as used in this document refers to all “built environment” resources (e.g., structures, bridges, railroads, water conveyance systems), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP [36 CFR 800]. On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the ACHP, FHWA, State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the ACHP’s regulations (36 CFR 800), streamlining the Section 106 process and delegating certain responsibilities to Caltrans. FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 U.S.C. 327).

Historic properties may also be covered under Section 4(f) of the USDOT 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 CEQA, as well as California PRC Section 5024.1, which established the California Register of Historical Resources (CRHR). PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet the NRHP listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its ROWs.

Affected Environment

The following documents provide information on historic properties within the Area of Potential Effects (APE) and serve as the basis for the analysis in this section:

- Archaeological Survey Report (ASR) for State Route 138 (5th Street East to 10th Street East) Improvements Project, October 2016
- Historical Resources Evaluation Report (HRER) for State Route 138 (5th Street East to 10th Street East) Improvements Project, October 2016
Area of Potential Effects

The APE was established as the area where the project could directly or indirectly affect historic properties. The Direct APE includes the street or road ROW and driveway improvements, property acquisitions, and TCEs that extend beyond the ROW. The Indirect APE includes the entire parcel or property adjacent to the new ROW where property acquisitions and easements would occur. The entire Indirect APE was surveyed for built environment resources.

Record Searches

A records search was performed in January 2016 at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. A total of 43 cultural resources investigations had been conducted within the 1-mile records search radius. Of these studies, 5 include portions of the APE.

In addition to the site records and reports on file at SCCIC, the California Historic Property Data File (HPDF) for Los Angeles County was consulted for the APE. The HPDF provides information about resources determined eligible for, or listed in, the NRHP and the CRHR. It also provides information on resources that are California Historical Landmarks (CHL) and California Points of Historical Interest.

One linear resource from the historic period, a segment of the Southern Pacific Railroad (SPRR) line (P-19-180638), is the only previously recorded resource in the APE. A total of 109 additional cultural resources have been previously documented outside the APE but within the 1-mile radius. Of these resources, 2 are prehistoric archaeological sites, 1 is a prehistoric isolate, 13 are historic archaeological sites, and 93 are historical architectural resources.

Native American Consultation

The Native American Heritage Commission (NAHC) was contacted requesting a search of their Sacred Lands Files. The results of the search indicated that no sacred lands are recorded in the project area (see Attachment D of the ASR). The NAHC provided a list of Native American contact persons for the project area.

Letters describing the project and a map of the study area were mailed to local Native American contacts provided by the NAHC. A representative of the San Manuel Band of Mission Indians requested a copy of the record search results, site records, and a copy of any reports prepared for this project, and a summary and compact disc containing the site records was sent. In response, the Tribal representative requested that, if during the course of construction, cultural resources were found, to please contact them. In addition, the Fernandeño Tataviam Band of Mission Indians responded to the City’s request for consultation under Assembly Bill (AB) 52. The Tribe requested that Native American monitoring be conducted for all ground-disturbing activities associated with this project and requested that they be involved with any artistic opportunities that might arise with the project, such as freeway wall design (see Appendix D of the ASR). Caltrans Professionally Qualified Staff (PQS)
determined that the conditions for monitoring had not been met because no archaeological sites were identified to be in the APE, as well as possessing a low potential for encountering buried resources because of the nature of the proposed work, the area’s geomorphology, and its highly disturbed nature. However, the City agreed to incorporate the measures requested by the Fernandeño Tataviam Band of Mission Indians in the environmental document as part of its consultation efforts under AB 52.

Field Surveys

An intensive-level archaeological pedestrian survey of the APE was conducted in April 2016. The survey consisted of walking parallel transects, spaced at no greater than 15-meter intervals, where possible, within the APE while closely inspecting the ground surface. No archaeological sites were identified as a result of the survey, and the potential for subsurface archaeological resources appears to be low because of the nature of the proposed work, the area’s geomorphology, and previous disturbance from construction of buildings, structures, and facilities.

An intensive built environment survey of the entire APE was conducted in April 2016 using the Office of Historic Preservation’s (OHP) Guidelines for Recording Historical Resources. Following Secretary of the Interior’s Standards and Guidelines and Attachment 4 of the Caltrans First Amended Section 106 PA, and properties that are not exempt from evaluation were included in the inventory. Nonexempt properties were photographed and recorded on appropriate California Department of Parks and Recreation (DPR) 523 series forms. The entire exterior of each building was walked and photographed as property accessibility allowed. During the intensive survey, architectural details and integrity considerations were noted for each of the buildings and structures.

Archaeological Resources

No prehistoric or historic archaeological resources have been previously recorded or were observed within the APE during the pedestrian survey. The potential for buried archaeological deposits ranges from very low to high. Even though the geomorphology analysis indicates a medium to high potential for preservation of archaeological deposits north of SR-138 (Palmdale Boulevard) along Sierra Highway, disturbances to this area from construction of the existing roadways, railroad, underground utilities, and commercial development and landscaping, as well as a lack of identified archaeological resources from similar projects in the vicinity, indicate the potential for discovery of archaeological deposits to be low. Considering the results of the literature search and geomorphology analysis, as well as disturbances to the APE from construction of the existing roadways, underground utilities, commercial development, and landscaping, the potential for discovery of archaeological deposits in the very low probability zone is considered low.

Because prior disturbances of similar depth as proposed ground disturbances are present due to the existing roadways, railroad, sidewalks, underground utilities,
commercial development, and landscaping, implementation of this project is considered to have a low potential to affect cultural resources.

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, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to California PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the Caltrans District 7 Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

**Built Environment Resources:**

Fourteen built environment resources were evaluated as a result of the proposed project. The SHPO concurred with the finding that 13 resources were determined not eligible for the NRHP. The SHPO did not have sufficient information to concur with Caltrans finding of ineligibility for one resource, the Union Pacific Railroad (UPRR)/Southern Pacific Railroad (SPRR) (P-19-180638) and as a result recommended that Caltrans assume eligibility of the railroad pursuant to Stipulation VIII.C(4) of the Section 106 PA because special circumstances precluded the railroad’s complete evaluation, including restricted access, its large property size, and a limited potential for effects from this project only.

**Potential Impacts**

**No Build Alternative**

Under the no-build conditions, there would be no improvements to the project area or alterations to lane configurations; besides routine maintenance of the project corridor, there would be no actions that would impact cultural resources within the project area. Therefore, there would be no impacts to cultural resources under the No Build Alternative.

**Build Alternative**

Archaeological resources would not be affected by operation of the project. The 13 built environment resources that were evaluated and determined not eligible for listing in the NRHP are not considered historic properties or historic resources. One resource, the UPRR/SPRR (P-19-180638) was assumed eligible for the NRHP and is considered a historic property for this project only. Although the historic railroad is adjacent to the roadway and near the proposed sidewalk/bike path, nearby culvert lengthening, and signal/gate improvements, these improvements would not affect the
historic railroad, nor any part of what would be considered to be character-defining features associated with the railroad. Therefore, there would be No Historic Properties Affected as a result of this project. The Build Alternative would not affect any Section 4(f) historic properties.

**Avoidance, Minimization, and/or Abatement Measures**

**No Build Alternative**

Avoidance, minimization, and/or mitigation measures are not required.

**Build Alternative**

Avoidance, minimization, and/or mitigation measures to be implemented during the project construction phase are presented in Section 2.4, Construction Impacts.
Chapter 2 • Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

2.2 Physical Environment

2.2.1 Hydrology and Floodplains

Regulatory Setting

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

To comply, the following must be analyzed:

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

The base floodplain is defined as “the area subject to flooding by the flood or tide having a 1 percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

Affected Environment

This section addresses permanent impacts to hydrology and floodplains within the project area and immediate vicinity as a result of the proposed project improvements. Impacts during construction are addressed in Section 2.4, Construction Impacts. Existing data sources used to prepare this section were taken from the Preliminary Drainage Study (September 2016), the Preliminary Summary Floodplain Encroachment Report (September 2016), and the Natural Environment Study (Minimal Impacts) (September 2016) prepared for this project.

Regional Hydrology

The proposed project is located within the northern portion of Los Angeles County on the north side of the San Gabriel Mountains in the Antelope Valley and crosses the Lancaster hydrologic area, hydrologic subarea (HSA) 626.50, and the Lake Palmdale-Piute Ponds watershed. HSA 626.50 has an area of 557,620 acres. The Antelope Valley is a hydrologically closed basin with no outlets to the ocean. As a result, any water that enters the region will either infiltrate into the groundwater aquifer or will flow in the direction of the three dry lakes located near the center of the valley – Rogers, Rosamond, and Buckhorn lakes. These dry lakebeds comprise the floodplain within the basin and receive water during the winter months and typically remain wetted through the winter months until summer.

The project area receives low levels of annual precipitation and experiences high levels of evaporation. High temperatures, regularly exceeding 80 degrees Fahrenheit
(°F), sporadic rainfall (that may be locally heavy at times), and low humidity are typical during the summer. Winter temperatures are often around 40°F. The region is bordered on the west and south by the San Gabriel Mountains, which block many of the moisture-bearing westerly winds from the coast, forming a rain shadow. The region receives an average of 7.4 inches of precipitation per year, and rainfall is fairly evenly distributed throughout the year. Due to the lack of significant moisture in the desert during most of the year, soils are typically poorly developed and very thin. Because of the impervious nature of the soil and substrate, most of the overland flow eventually evaporates on the dry lakebeds rather than infiltrating into the groundwater. The proposed project has an estimated disturbed soil area (DSA) of 3.73 acres, which is less than 1 percent of the HSA. The proposed project overlies the Antelope groundwater basin, which is a subbasin within the Lancaster hydrologic area.

**Local Hydrology**

Precipitation within the project area is currently discharged to the unnamed drainage channel that flows north along Sierra Highway through Palmdale and Lancaster, connecting to a series of earthen ditches and ultimately discharging into Piute Ponds. It is believed that the unnamed drainage channel is a downstream reach of the Anaverde Creek. Upstream of the project site, the concentrated flows of the Anaverde Creek split just east of SR-14 and become sheet flow; therefore, the unnamed earthen channel is considered independent.

The unnamed drainage channel is located in the Lake Palmdale-Piute Ponds Watershed. All drainage features located in the Lake Palmdale-Piute Ponds Watershed are classified as ephemeral streams. An ephemeral stream has flowing water only during, and for a short period after, precipitation events in a typical year. Groundwater is not a source of water for the stream, but rather they are primarily supported by runoff from rainfall. All of the drainages within the Lake Palmdale-Piute Ponds Watershed are considered isolated from interstate waters.

**Floodplains**

The proposed project is located in flood zone AE, for which average depths ranging from 1 to 3 feet will occur (see Figure 2.2.1-1). The project area is considered very flat, thus not having a large hydraulic head for inlets and pipes. This type of drainage system has the potential of leading to minor ponding and flooding during major rain events. According to the Lahontan Regional Water Quality Control Board (RWQCB) Basin Plan (Lahontan RWQCB, 1995), there are no beneficial floodplain values associated with the unnamed earthen channel running parallel to the west side of Sierra Highway.
Figure 2.2.1-1: Project Area Flood Map

Blue polygon represents Zone AO with a flood depth of 1 to 3 feet for the 1 percent (100-year flood). Tan polygon represents the 0.2 percent flood or depths of less than 1 foot during the 100-year flood.

Potential Impacts

This section discusses permanent impacts on hydrology and floodplains as a result of the proposed project construction. Temporary or construction impacts are discussed in Section 2.4, Construction Impacts.

No Build Alternative

The No Build Alternative would not widen SR-138 (Palmdale Boulevard) or Sierra Highway, and it would not include development of additional turn lanes. Under the No Build Alternative, there would still be a potential for minor ponding and flooding during major rain events.

Build Alternative

The Build Alternative is located on land that is subject to inundation by a 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Implementation of the Build Alternative would only require a minimal floodplain encroachment with a minimal impact. Specifically,
although the widening is within the floodplain, the proposed project is considered low risk and does not propose significant encroachment impacts.

With an increase in the net new impervious surface area, the proposed project would increase stormwater flows. Within the proposed project, there is an existing 6- by 10-foot double concrete box culvert located near the intersection of SR-138 (Palmdale Boulevard) and 6th Street. The Build Alternative proposes to lengthen the existing box culvert that at a minimum matches existing flow capacity and hydraulic characteristics. Other improvements proposed to minimize hydrological impacts include development of drainage systems consisting of a series of drainage inlets and storm drains to capture onsite stormwater runoff prior to discharging to offsite facilities.

Specifically, surface runoff would be conveyed via curb and gutter to inlets. Flared end sections and riprap material are proposed at the outlets of the storm drains to reduce the flow velocities of the discharged stormwater. Overall, the drainage design would prevent increases to existing flow velocities through the use of grading and energy dissipaters. By maintaining onsite and offsite drainage patterns to closely mimic existing drainage patterns, implementation of the Build Alternative would not result in impacts related to hydrology or floodplain.

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

**No Build Alternative**

Avoidance, minimization, and/or mitigation measures are not required.

**Build Alternative**

No permanent impacts to hydrology and floodplains were identified; therefore, no avoidance, minimization, and/or mitigation measures in addition to the application of standard design conditions are required.
Chapter 2 • Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

2.2.2 Water Quality and Stormwater Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

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

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the United States. RWQCBs administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the United States Army Corps of Engineers (USACE).

The goal of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

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

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1 A point source is any discrete conveyance such as a pipe or a man-made ditch.
with USACE and allow the discharge of dredged or fill material into the aquatic system (waters of the United States) only if there is no practicable alternative that would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the United States and not have any other significant adverse environmental impacts. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent\(^2\) standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the United States. In addition, every permit from USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements (see 33 CFR 320.4).

**State Requirements: Porter-Cologne Water Quality Control Act**

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

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

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\(^2\) EPA defines “effluent” as “wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall.”
State Water Resources Control Board and Regional Water Quality Control Boards

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

National Pollutant Discharge Elimination System Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater discharges, including MS4s. An MS4 is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater.” SWRCB has identified Caltrans as an owner/operator of an MS4 under federal regulations. Caltrans’ MS4 permit covers all Caltrans ROWs, properties, facilities, and activities in the state. SWRCB or the RWQCB issues NPDES permits for 5 years, and permit requirements remain active until a new permit has been adopted.

Caltrans’ MS4 Permit (Order No. 2012-0011-DWQ as amended by Order WQ 2014-0006-EXEC, Order WQ 2014-0077-DWQ, and Order WQ 2015-0036-EXEC) was adopted on September 19, 2012, and became effective on July 1, 2013. The permit has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (CGP) (see below);
2. Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges; and
3. Caltrans stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) BMPs, to the Maximum Extent Practicable (MEP), and other measures as SWRCB determines to be necessary to meet the water quality standards.

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

**Construction General Permit**

The CGP (Order No. 2009-009-DWQ as amended by 2010-0014 DWQ and 2012-006-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates stormwater discharges from construction sites that result in a DSA of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than 1 acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop Stormwater Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the CGP.

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

**Section 401 Permitting**

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

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

In 2003, Los Angeles County submitted an application for coverage under SWRCB Order No. 2003-0005-DWQ, NPDES General Permit for Storm Water Discharges from Small MS4s, for that portion of Los Angeles County under the jurisdiction of the Lahontan RWQCB. In 2005, the Lahontan RWQCB issued a letter stating that the RWQCB does not intend to regulate the City of Palmdale or unincorporated portions of Los Angeles County, within the Lahontan region, because the General Permit applies to small MS4s that discharge to waters of the United States, and according to the Non-Jurisdictional Determination for the Amargosa Creek watershed (which is outside of the project limits), USACE determined that Amargosa Creek is a non-navigable isolated water body that does not exhibit substantial interstate commerce; therefore, it is no longer subject to USACE jurisdiction with the Solid Waste Agency of North Cook County (SWANCC) Supreme Court decision. On December 31, 2001, the Los Angeles RWQCB adopted Order No. 01-182 (Los Angeles County MS4 NPDES No. CAS004001) for municipal stormwater and urban runoff discharges within the County of Los Angeles, which was modified in 2012 as Order No. R4-2012-0175. The requirements of this NPDES permit cover 84 cities and the unincorporated areas of Los Angeles County, with the exception of the portion of Los Angeles County in the Antelope Valley, including Palmdale; therefore, the proposed project is not subject to Phase I or Phase II MS4 requirements. Instead, to comply with the post-construction runoff reduction requirements, the proposed project would be required to replicate the pre-project water balance (defined as the volume of rainfall that ends up as runoff) for the smallest storms up to the 85th percentile storm event (or the smallest storm that generates runoff, whichever is larger) by using nonstructural and structural measures as referenced in the Post-Construction Water Balance Performance Standard worksheet.

Affected Environment

This section describes the affected environment for water quality and stormwater runoff. It includes a range of topics related to water resources, including receiving water bodies and water quality. The affected environment is the same for the Build Alternative and No Build Alternative because the proposed project is being developed within an existing facility with minor changes.

Surface Water

According to Caltrans’ Water Quality Planning Tool (WQPT) (Caltrans, 2016), the proposed project crosses the Lancaster hydrologic area, HSA 626.50. The Lancaster hydrologic area is one of eight hydrologic areas within the Antelope hydrologic unit. Stormwater runoff from the project area would discharge directly into an unnamed earthen channel through a system of inlets, culverts, natural channels, and concrete channels. The unnamed channel connects to a series of earthen ditches that drain northwesterly through the Antelope Valley in an alluvial fan formation. Indirect receiving water bodies associated with the proposed project include the Piute Ponds, Rogers Lake, and Rosamond Dry Lake.
The project area has a high desert type climate, characterized by long, dry, hot summers and cold and windy winters. In the Antelope River valley, the summer months are hot with little or no precipitation, and all areas within this region can be affected by summer monsoonal thunderstorms. Precipitation occurs as rainfall, with snow common in the high mountains. Table 2.2.2-1 displays the average annual rainfall (Caltrans 2016) within the Lancaster hydrologic area.

### Table 2.2.2-1: Average Annual Precipitation

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</table>

**Groundwater**

The project is located in the Antelope Valley Groundwater Basin (AVG Basin). The AVG Basin has a surface area of 1,580 square miles and includes portions of Los Angeles, Kern, and San Bernardino counties. Recharge to the AVG Basin is primarily accomplished by perennial runoff from the surrounding mountains and hills. Most recharge occurs at the foot of the mountains and hills by percolation through the head of alluvial fan systems. The Big Rock and Little Rock creeks, in the southern part of the basin, contribute approximately 80 percent of the runoff in the AVG Basin. Other minor recharge is from the return of irrigation water and septic system effluent (California Department of Water Resources [DWR], 2004).

From 1975 through 1998, groundwater levels ranged from an increase of 84 feet to a decrease of 66 feet. The parts of the AVG Basin with declining water levels are along the SR-14 corridor from Palmdale through Lancaster to Rosamond and surrounding Rogers Lake on EAFB (Caltrans, 2015).

Historically, groundwater flowed north from the San Gabriel Mountains and south and east from the Tehachapi Mountains toward Rosamond Lake, Rogers Lake, and Buckhorn Lake. These dry lakes are places where groundwater can discharge by evaporation. Because of recent groundwater pumping, groundwater levels and flow have been altered in urban areas such as Lancaster and EAFB. Groundwater pumping has caused subsidence of the ground surface, as well as earth fissures, to appear in Lancaster and on EAFB. By 1992, 292 square miles of Antelope Valley had subsided by more than 1 foot. This subsidence has permanently reduced aquifer system storage by approximately 50,000 acre-feet (Caltrans, 2015).

**Hydrology**

The Antelope Valley is a hydrologically closed basin with no outlets to the ocean. As a result, any water that enters the region will either infiltrate into the groundwater...
aquifer, or will flow in the direction of the three dry lakes located near the center of the valley – Rogers, Rosamond, and Buckhorn lakes. These dry lakebeds comprise the floodplain within the basin and receive water during the winter months and typically remain wetted through the winter months until summer. Due to the dry hot climate of the Antelope Valley, as well as the impervious nature of the soil and substrate, most of the overland flow eventually evaporates on the dry lakebeds rather than infiltrating into the groundwater (Alderman, et al., 2009).

**Soil Erosion Potential**

Hydrologic Soil Groups (HSG) are based on the rate of water infiltration, with Group A having the highest rates and Group D having the lowest rates. According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, soils within the proposed project area are identified as Hesperia fine sandy loam, zero to 2 percent slopes; Rosamond loam; and Vernalis loam, zero to 2 percent slopes. Of this, approximately 82 percent of these soils have an HSG rating of B, and the remaining 18 percent are rated as HSG A (United States Department of Agriculture, 2014).

**Beneficial Uses**

All projects within the Lahontan region are also subject to requirements of the Lahontan RWQCB. The Lahontan RWQCB has prepared the Water Quality Control Plan for the Lahontan Region (Basin Plan) to help preserve and enhance water quality and to protect the beneficial uses of State waters. The Basin Plan designates beneficial uses for surface and ground waters, and it sets qualitative and quantitative water quality objectives (WQOs) that must be attained or maintained to protect the designated beneficial uses and conform to the State's anti-degradation policy. The Basin Plan also describes implementation programs to protect the beneficial uses of all waters in the region and surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan (Lahontan RWQCB, 1995).

To protect beneficial uses, the RWQCB has set forth WQOs that are described in the Basin Plan (Lahontan RWQCB, 1995). WQOs are intended (1) to protect public health and welfare; and (2) to maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.

The existing drainage for the project site consists of a combination of surface flows, inlets, culverts, natural channels, and concrete channels discharging into an unnamed earthen channel running parallel to the west side of Sierra Highway. The unnamed channel connects to a series of earthen ditches that flow to the northern part of Palmdale and follow natural topography ultimately discharging into Piute Ponds. The direct and indirect receiving water bodies within the proposed project area with designated beneficial uses are displayed in Table 2.2.2-2.
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Table 2.2.2-2: Beneficial Uses

<table>
<thead>
<tr>
<th>Water Body</th>
<th>Beneficial Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MUN</td>
</tr>
<tr>
<td>Minor Surface Waters</td>
<td>X</td>
</tr>
<tr>
<td>Piute Ponds</td>
<td>X</td>
</tr>
<tr>
<td>Piute Ponds Wetlands</td>
<td>X</td>
</tr>
<tr>
<td>Rosamond Dry Lake</td>
<td></td>
</tr>
</tbody>
</table>

MUN = Municipal and Domestic Supply; AGR = Agricultural Supply; FRSH = Freshwater Replenishment; GWR = Groundwater Recharge; REC-1 = Water Contact Recreation; REC-2 = Non-contact Water Recreation; COMM = Commercial and Sports Fishing; SAL = Inland Saline Water Habitat; WARM = Warm Freshwater Habitat; WQE = Water Quality Enhancement; FLD = Flood Peak Attenuation/Flood Water Storage; COLD = Cold Freshwater Habitat; WILD = Wildlife Habitat; RARE = Rare, Threatened or Endangered Species; BIOL = Preservation of Biological Habitat of Special Significance.

Surface Water Quality

SWRCB created the Surface Water Ambient Monitoring Program (SWAMP) to provide a measure of the State’s ambient water quality and the effectiveness of the State’s water quality protection programs. The SWAMP relies primarily on contractors, such as University of California, United States Geological Survey (USGS), and others, to collect information on the quality of the State’s waters. For the first 5 years of the SWAMP Program (i.e., 2000–2005), water quality at monitored sites was compared to the chemical and physical WQOs contained in the Lahontan Region Basin Plan. SWAMP monitoring activities were conducted from July 2000 through August 25, 2005. Of the hydrologic areas within the Antelope hydrologic unit, however, only the Little Rock Reservoir, which is approximately 6 miles south of the project, was sampled.

For the Little Rock Reservoir, there were 108 values comparable to Basin Plan criteria, with 22 instances where the WQO was exceeded. Specifically, the WQO was exceeded for dissolved oxygen (DO), boron (B), total dissolved solids (TDS), fluoride (F), and sulfate (SO₄) (Surface Water Ambient Monitoring Program, 2014). These data are summarized in Figure 2.2.2-1.
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**List of Impaired Waters**

The CWA requires states to identify water bodies that are considered impaired, which means the water body does not meet water quality standards. States must then place these water bodies onto a list, referred to as the “CWA Section 303(d) List of Water Quality Limited Segments.” On October 11, 2011, EPA issued its final decision regarding the water bodies and pollutants added to California’s 303(d) List. This list, referred to as the California 2012 Integrated Report, replaces the 2006 California CWA 303(d) List (SWRCB, 2015). The 2012 Integrated Report includes a combined list of CWA Section 303(d) water bodies that are listed as not meeting water quality standards and Section 305(b) water bodies that identifies water bodies still requiring development of a TMDL, those that have a completed TMDL approved by EPA, and those that are being addressed by actions other than a TMDL.

Once a water body is listed as impaired, the State is required to develop a TMDL to address each pollutant causing the impairment. A TMDL defines how much of a pollutant load a water body can tolerate and still meet water quality standards. The TMDL is required to account for contributions from point sources (i.e., permitted discharges), as well as contributions from nonpoint sources, including natural background. TMDLs allocate allowable pollutant loads for each source and identify management measures that, when implemented, will assure that water quality standards are attained. Through the RWQCB’s basin planning process, TMDLs and TMDL implementation plans are adopted into an RWQCB’s Basin Plan. None of the direct or indirect receiving water bodies associated with the proposed project are identified in Section 303(d) or Section 305(b) of the 2012 Integrated Report (SWRCB, 2015).
Caltrans has identified pollutants that were discharged from Caltrans facilities with a load or concentration that commonly exceeded allowable standards and were still considered treatable by currently available Caltrans-approved Treatment BMPs (Caltrans, 2016a). These pollutants, designated as Targeted Design Constituents (TDCs), include sediment, metals (i.e., total and dissolved fractions of zinc, lead [Pb], and copper), nitrogen, phosphorus, and general metals. The TDC approach is Caltrans statewide design guidance to address primary pollutants of concern. Therefore, the primary pollutants of concern for the project are sediment, metals, nitrogen, and phosphorus because the direct and indirect receiving water bodies associated with the project are not designated as impaired nor do they have established TMDLs.

**Groundwater Quality**

Groundwater quality in the Antelope Valley groundwater basin is typically calcium bicarbonate in character near the surrounding mountains and sodium bicarbonate or sodium sulfate character in the central part of the basin. In the eastern part of the basin, the upper aquifer has sodium-calcium bicarbonate-type water and the lower aquifer has sodium bicarbonate-type water. TDS content in the basin averages 300 milligrams per liter (mg/L) and ranges from 200 to 800 mg/L. Data from 213 public supply wells show an average TDS content of 374 mg/L and ranges from 123 to 1,970 mg/L (DWR, 2004).

According to the Antelope Valley Integrated Regional Water Management Plan, groundwater quality is excellent within the principal aquifer but is not as good towards the northern portion of the dry lake areas. Some portions of the basin contain groundwater with high fluoride, boron, TDS, and nitrate concentrations. Arsenic is another emerging contaminant of concern in the Antelope Valley Region. Research conducted by the Los Angeles County Waterworks District and USGS has shown the problem to reside primarily in the deep aquifer, and it is not anticipated that the existing arsenic problem will lead to future loss of groundwater as a water supply resource for the Antelope Valley (Antelope Valley – Kern Water Agency, 2010).

**Areas of Special Biological Significance**

To protect and restore ecologically sensitive ecosystems along the coast, California created 34 Areas of Special Biological Significance spanning the length of the coast. This designation was intended to bring special protection to fragile coastal biological communities by strictly limiting or prohibiting discharges of point source waste and requiring nonpoint source pollution to be controlled to the “extent practicable” before it reaches an Area of Special Biological Significance to preserve natural water quality conditions. According to SWRCB, there are no Areas of Special Biological Significance sites within the project limits.

**Water Supply and Availability**

The water agency that serves the project area has developed an Urban Water Management Plans (UWMP) in accordance with the Urban Water Management Plan Act (California Water Code § 10610 et seq.). Overall, the water agency that serves
the project area relies on either State Water Project or groundwater resources. In the Antelope Valley Groundwater Basin, recharge is predominantly achieved through perennial runoff, and minor recharge is achieved using irrigation water and septic system effluent (Caltrans, 2015).

**Potential Impacts**

**No Build Alternative**

Under the No Build Alternative, there would be no change in existing traffic facilities along SR-138 (Palmdale Boulevard) or Sierra Highway. No soil disturbance or changes to the existing environment would occur, nor would paved impervious areas increase; therefore, no temporary or permanent impacts to water quality would occur.

**Build Alternative**

Construction of the proposed improvements would increase the existing impervious surface area within the project site by 1.93 acres, 0.47 acre of which is within the Caltrans right-of-way. Given that the Lancaster hydrologic area has a watershed area of approximately 557,620 acres, the addition of 1.93 acre of impervious surface would not substantially affect the overall amount of runoff or the amount of discharge into natural surface drainages. Additionally, because runoff would be collected and conveyed into a designed drainage network, the project would not substantially alter the existing pattern of natural surface drainage in the project vicinity. With implementation of Permanent BMPs, the project would not appreciably impact water quality because it would not substantially contribute to the exceedance of any adopted water quality standard or conflict with WQOs, plans, goals, policies, or implementation of the Lahontan RWQCB’s Basin Plan. The subsections below further detail the potential permanent impacts of the project to hydrology and water quality.

**Impacts to Surface Water**

The Lancaster watershed area is approximately 557,620 acres. The proposed additional impervious area as a result of project construction (1.93 acres) within the watershed makes up a small percentage of this area. This is expected to create minor localized increase in urban runoff within the project limits. With the minor increase in impervious surface, an increase in peak flow in the overall flow regime for the project area is anticipated. This increase in stormwater runoff would not result in a substantial impact to surface water quality within the project area because it would be captured and routed to the unnamed earthen channel running through the project alongside the west side of Sierra Highway, via the improved drainage system to be constructed as part of this project. Furthermore, water quality features (e.g., Construction Site, Maintenance, Design Pollution Prevention BMPs, and nonstructural and structural measures) as required under SWRCB’s Post-Construction Water Balance Calculator would be proposed to treat the TDCs, thus further minimizing impacts to surface water quality.
**Water Quality Degradation**

The direct and indirect receiving waterbodies associated with the project are not listed as impaired in the SWRCB 2012 Integrated Report; hence, these drainages are not subject to any TMDL discharge restrictions. Considering the existing development in the surrounding community, traffic volume is expected to grow. Consequently, the amount of motor vehicle-related pollutants discharged into the watershed and drainage channels from impervious surfaces would increase with or without implementation of the proposed project. By incorporating water quality control by implementing Design Pollution Prevention BMPs and water quality treatment features into the project plans, the increase in motor vehicle-related pollutants from the proposed project would be minimal. Finally, because the increased area of impervious surface is small compared to the local watershed, the project would not appreciably impact local water resources and quality.

**Groundwater**

The AVG Basin has historically shown large fluctuations in groundwater levels. Data from 1975 to 1998 show that groundwater level changes over this period ranged from an increase of 84 feet to a decrease of 66 feet (Antelope Valley – Kern Water Agency, 2010). While water would be used as a dust palliative and for other purposes during construction, these uses would not adversely affect groundwater supply. Based on the depth to groundwater within the study area and the relatively shallow excavation depths associated with the project, the project would not impact the groundwater aquifer.

**Water Quality Features**

Water quality features for the proposed project would include Construction Site, Maintenance, Design Pollution Prevention BMPs, and nonstructural and structural measures referenced in SWRCB’s Post-Construction Water Balance Calculator worksheet. These BMPs would be implemented to address stormwater quality during construction and runoff reduction during operation of the transportation facility to minimize potential stormwater and non-stormwater impacts to water quality.

Caltrans’ Statewide SWMP (Caltrans, 2016b) describes how Caltrans would comply with their Statewide NPDES Permit. The SWMP characterizes the program that Caltrans would implement to minimize the discharge of pollutants associated with storm drainage systems that serve highways, highway-related properties, facilities, and activities. Specifically, the SWMP identifies BMPs that shall be considered to meet the MEP and the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology (BAT/BCT) requirements and to address compliance with water quality standards.

SWRCB’s CGP describes how the City would comply with the runoff reduction requirements during operation of the project. The project, through use of nonstructural and structural measures, would be required to replicate the pre-project water balance for the smallest storms up to the 85th percentile storm event.
Potential short-term water quality impacts associated with the construction phase would be minimized with implementation of Construction Site BMPs. Potential long-term water quality impacts associated with operation and maintenance of the transportation facility would be minimized with implementation of Maintenance, Design Pollution Prevention, and nonstructural and structural measures. Overall, with incorporation of these BMPs, no water quality impacts from the project are expected.

**Construction Site BMPs**

Construction Site BMPs would be applied during construction activities to minimize the pollutants in stormwater and non-stormwater discharges throughout the period of construction. Construction Site BMPs would provide temporary erosion and sediment control, as well as control for potential pollutants other than sediment. Within the project area, construction materials and debris, including fuels, oil, and other liquid substances, shall be stored in a manner to prevent any runoff from entering receiving water bodies. Caltrans has identified six categories of Construction Site BMPs that are suitable for controlling potential pollutants on construction sites. Detailed information regarding the specific Construction Site BMPs associated with each of the six categories can be found in the Construction Site BMP Manual (Caltrans, 2003).

Construction Site BMPs would be evaluated and identified through preparation of the SWPPP. The SWPPP would address all State and federal water quality control requirements and regulations. The SWPPP would address all construction-related activities, equipment, and materials that have the potential to affect water quality. The SWPPP would identify BMPs to minimize pollutants, sediment from erosion, stormwater runoff, and other construction-related impacts. In addition, the SWPPP would include a Construction Site Monitoring Program, which requires inspection and sampling and analysis procedures to ensure that the implemented Construction Site BMPs are effective in complying with water quality standards. The Construction Site BMPs identified in the SWPPP would be consistent; therefore, they would comply with the control practices required under the CGP (SWRCB, 2009).

**Design Pollution Prevention BMPs**

The following Design Pollution Prevention BMPs were identified as applicable to the proposed project.

**Consideration of Downstream Effects Related to Potentially Increased Flow**

The project may increase the velocity of flow within the project limits, but it should have a negligible effect on downstream flow. During the construction phase, conveyance systems would lead to outlet velocity dissipation devices, which would minimize sediment discharges and prevent an increase in peak flows discharged offsite. All transitions between outlets and channels would be smooth to reduce turbulence and scour. Roadway runoff shall be treated and controlled to the MEP. The project would not encroach, cross, realign, or cause any other hydraulic changes that may affect downstream channel stability.
Slope/Surface Protection Systems

Conventional cut and fill grading techniques would be used to produce the proposed grades. Both cut and fill slopes would be constructed 2:1 or flatter and would be less than 15 feet high. The existing slopes are stable and vegetated with rounded shapes to reduce concentrated flow; however, if appropriate, during construction soil stabilization, BMPs would be used to prevent soil particles from detaching and becoming suspended in stormwater and non-stormwater runoff.

These BMPs may include the following:

- Preservation of existing vegetation where required and when feasible;
- Implementation of temporary soil stabilization measures at regular intervals throughout project duration;
- Stabilization of nonactive areas within 14 days of cessation of construction activities during the project;
- Application of erosion control seeding or check dams for concentrated flow paths; and
- Application of permanent erosion control to remaining DSAs at completion of the construction phase. Soil stabilization would involve installation of uniform vegetative cover, fiber matrices, erosion control blankets, and/or fiber rolls.

Slope/surface protection systems would be deployed in a sequence to follow the progress of grading and construction. As the locations of soil disturbance change, erosion controls would be adjusted accordingly to control stormwater runoff at the downgrade perimeter.

Existing vegetation within the project limits consists primarily of desert brush. The soil types within the proposed project consist of Hesperia fine sandy loam, Rosamond loam, and Vernalis loam. A landscape design would be developed and approved by the Caltrans District Landscape Architect. The landscaped area would feature native plants incorporating seed mixtures, mulch, and tackifier recommended by the Caltrans District Landscape Architect.

Hard surface protection (i.e., slope paving, rock slope protection) would be constructed where vegetation does not provide adequate erosion protection. In addition, hard surface BMPs may be used at the intersections for maintenance and safety purposes.

Concentrated Flow Conveyance Systems

The concentrated flow conveyance systems proposed would be designed such that surface runoff would be conveyed via curb and gutter to inlets, and flared end sections and riprap material would be proposed for the storm drain outlets to reduce flow velocities of the discharged stormwater. The intent of the drainage design would be to prevent increases to existing flow velocities through the use of grading and energy dissipaters. An outlet flow analysis would be conducted to determine and minimize impacts.
Preservation of Existing Vegetation

The proposed project design would consider minimizing the footprint and matching the existing grading as close as possible to preserve as much existing vegetation as possible. Clearing and grubbing would be performed on all cut/fill areas according to plans, and any area considered off limits to the contractor would be identified on the plans.

Structural and Nonstructural BMPs

Since the proposed project would add less than 1 acre of impervious surface area within Caltrans ROW, no permanent BMPs would be required. BMPs referenced in the Post-Construction Water Balance worksheet would be evaluated for implementation to the MEP. The worksheet references several nonstructural and structural measures for implementation, such as porous pavement, tree planting, stream buffers, green roofs, vegetated swales, and disconnection of impervious areas. All of these measures would be considered to minimize the long-term potential impacts associated with the net new impervious surface area. Nonstructural and structural measures would be selected based on their ability to treat the TDCs. Pollutants of concern associated with runoff from the project impervious surface area would be minimized by conveying runoff from the net new impervious surface area to nonstructural and/or structural measures. Thus, water quality impacts to downstream receiving waters would be minimized, and the potential of contributing to or violating WQOs for surface water or groundwater are not anticipated.

Maintenance BMPs

Caltrans’ Maintenance Division is responsible for conducting maintenance activities at different facilities throughout the state to ensure that the maximum benefits associated with constructed facilities are available to the traveling public. Most of these activities are handled by small crews with a minimal amount of soil disturbance.

The purpose of applying Maintenance BMPs is to implement water quality controls that will minimize pollutant discharges during highway maintenance activities. Maintenance activities, along with the application of Maintenance BMPs, would be ongoing throughout the lifespan of the facility. All of the Maintenance BMPs implemented would be consistent with the specifications and guidelines presented in the Maintenance Staff Guide (Caltrans, 2003a). The Maintenance Staff Guide provides detailed instructions regarding the application of approved Maintenance BMPs for maintenance highway activities. Typical highway maintenance activities, along with some of the Maintenance BMPs that would be implemented, are displayed in Table 2.2.2-3.
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### Table 2.2.2-3: Caltrans Maintenance BMPs

<table>
<thead>
<tr>
<th>Maintenance Activity</th>
<th>Maintenance BMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-landscaped Mechanical Vegetation Control/Mowing</td>
<td>Solid Waste Management; Preservation of Existing Vegetation; Vehicle and Equipment Operations</td>
</tr>
<tr>
<td>Drainage Ditch and Channel Maintenance</td>
<td>Sediment Control; Material Use; Compaction</td>
</tr>
<tr>
<td>Drain and Culvert Maintenance</td>
<td>Scheduling and Planning; Stockpile Management; Tire Inspection and Sediment Removal</td>
</tr>
<tr>
<td>Sweeping Operations</td>
<td>Liquid Waste Management; Safer Alternative Products</td>
</tr>
<tr>
<td>Litter and Debris Removal</td>
<td>Anti-Litter Signs; Litter and Debris; Solid Waste Management</td>
</tr>
<tr>
<td>Graffiti Removal</td>
<td>Material Use; Safer Alternative Products; Storm Drain Inlet Protection</td>
</tr>
</tbody>
</table>

*Source: Caltrans, 2003a.*

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

#### No Build Alternative

Avoidance, minimization, and/or mitigation measures are not required.

#### Build Alternative

The proposed project would incorporate contingency measures to protect water quality and downstream receiving waters by tracking BMPs and project design features during final design and construction, including the following:

- Concentrated flow conveyance systems (e.g., drainage ditches, dikes, berms) would be designed to ensure that flows to drainage channels would not result in increased erosion, sedimentation, or any contaminant conveyance. Slope/surface protection systems that utilize hard surfaces, such as concrete or equivalent materials, would be designed to minimize erosion.

- All work will conform to NPDES requirements as described in *NPDES Permit for General Construction Activities* (Order No. 2009-0009-DWQ, NPDES No. CAS000002). These include, but are not limited to, temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-stormwater BMPs.

- The project will incorporate non-structural and structural measures by evaluating the SWRCB’s Post-Construction Water Balance worksheet and selecting the most efficient option in relation to the direct and indirect receiving water bodies associated with the project. Non-structural and structural measures shall be implemented to the MEP consistent with the requirements of the SWRCB.
Permanent soil stabilization BMPs will be incorporated into project design, such as preservation of existing vegetation, concentrated flow conveyance systems (e.g., drainage ditches, dikes, berms, swales), and slope/surface protection systems that use either vegetated or hard surfaces. Appropriate BMPs will be selected during final design.

With the incorporation of the design requirements and compliance with the standard requirements mentioned above, no additional mitigation measures would be required during project implementation. Standard mitigation measures doing project construction to protect water quality are described in Section 2.4, Construction Impacts.
2.2.3 Geology/Soils/Seismicity/Topography

Regulatory Setting

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

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Caltrans’ Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects. Structures are designed using Caltrans’ Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge’s category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see Caltrans’ Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

Affected Environment

This section describes geologic, soil, and seismic conditions near the project area; an analysis of potential environmental impacts of the project alternatives on these conditions and potential impacts of geotechnical conditions on the transportation facility is also included. This section assesses potential impacts from faulting, seismicity, and liquefaction to the proposed project. It also discusses geology, soils, and seismic hazard concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and construction of structures. Caltrans’ Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. The current policy is to use the anticipated maximum credible earthquake (MCE) from young faults in and near California. The MCE is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

The geologic and geotechnical conditions and subsequent conclusions presented in this section are based on review of relevant geologic and geotechnical reports prepared for the site and the surrounding area, along with geotechnical data collected and analyzed in the Geotechnical Impact Evaluation Study (Leighton Consulting, Inc., 2016) prepared for this project.

Regional Geology

The project site is located in the USGS Palmdale and Ritter Ridge 7.5-Minute Quadrangles in northeastern Los Angeles County, in the Antelope Valley portion of the Mojave Desert Geomorphic Province of California. The Antelope Valley lies within a wedge-shaped and dominantly alluvial portion of the Mojave Desert, which is bounded by the San Andreas Fault to the southwest, the Garlock Fault to the northwest, and the Cottonwood-Rosamond Fault to the northeast.
Site Geology

The regional geology of SR-138 (Palmdale Boulevard) and the Sierra Highway is depicted in Figure 2.2.3-1 and described herein.

The project area is directly underlain by artificial fill that was placed during prior phases of road construction, but is then underlain by modern, Holocene-age alluvial fan deposits. Based on review of 2013 regional mapping by the California Geological Survey, SR-138 (Palmdale Boulevard) and the portion of Sierra Highway between Avenue Q and Avenue A-12 are underlain by unconsolidated to weakly consolidated, poorly sorted, gravel, sand, and silt deposits forming active, essentially undissected, alluvial fans (Qf). The southern third of Sierra Highway between Avenue Q-12 and Avenue R is underlain by unconsolidated to weakly consolidated, mostly undissected, fluvial gravel, sand, and silt. These soils are generally loose and yellowish-gray in color. The gravel consists of pebble-cobble gravel of coarse-grained to very coarse-grained arkosic sand, which is moderately sorted (Qa).

Expansive Soils

While most of the soils are anticipated to have low expansion potential characteristic, soils with moderate expansion potential may be encountered at the southern portion of Sierra Highway. These soils are not expected to be an impediment to conventional roadway construction, although thicker pavement section may be required due to lower subgrade R-values.

Seismicity and Faulting

The project site is located in a very seismically active portion of southern California; therefore, it is subject to the hazard of strong ground shaking from an earthquake on any regional faults, but most deterministically, the nearby San Andreas Fault. Since 1769, there have been 14 earthquakes with a magnitude of 6.0 or greater within a radius of 62 miles of the intersection of SR-138 (Palmdale Boulevard) and Sierra Highway. The epicenter of the 1952 magnitude 7.7 Arvin-Tehachapi Earthquake in the Central Valley was approximately 59 miles north of the project site. The largest peak horizontal ground acceleration that is estimated to have been induced along the alignments is 0.15g due to a magnitude 5.0 earthquake near Acton approximately 6.2 miles southwest of the site. The 1857 Fort Tejon Earthquake (magnitude 7.9) is believed to have ruptured the San Andreas Fault just south of the site.

The project site is not included within an Alquist-Priolo Earthquake Fault Zone (APEFZ) by the California Geological Survey. The closest APEFZ is that associated with the San Andreas Fault, specifically the Cemetery Fault approximately 2,000 feet southeast of the intersection of Avenue R and Sierra Highway (Figure 2.2.3-2). No other faults have been mapped across either of these alignments. The potential for ground rupture due to faulting across the alignments is low.
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Figure 2.2.3-1: Geology Map of the Project Area

According to the California Building Code (2001), the project site is located in Seismic Zone 4. Seismic Zone 4 includes those areas of California that have experienced major (i.e., Richter magnitude greater than 7.0) historic earthquakes and high levels of recent seismicity. Major damage corresponding to intensities VIII or higher on the Modified Mercalli Intensity Scale should be expected within this zone.

**Groundwater Conditions**

Data to assess existing groundwater depths along SR-138 (Palmdale Boulevard) and Sierra Highway are not available. Historic groundwater depths are not provided by the State of California in its 2005 survey of the Palmdale area, although historic high groundwater was reported by the California Geologic Survey to have been at least 40 feet or more deep along these alignments.
Based on a 2016 review of data from DWR for nearby groundwater wells, historic groundwater depths have been more than 180 feet below the ground surface. While groundwater withdrawal continues to result in ground subsidence and ground cracking in areas to the north near Lancaster, such distress has not yet been detected or mapped in the Palmdale area. It is very unlikely that shallow groundwater would be an impediment to the proposed construction, or that these alignments would be noticeably impacted by associated ground subsidence or cracking.

**Flooding**

Based on a review of 2008 Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for SR-138 (Palmdale Boulevard) and Sierra Highway, there are two different types of flood zones that extend across these alignments:

- SR-138 (Palmdale Boulevard) between 10th Street East and the rail line is located within Zone AO, a special flood hazard area subject to inundation by the 1 percent annual chance flood with average flood depths of 1 foot.
- SR-138 (Palmdale Boulevard) between the rail line and 10th Street East, and all of Sierra Highway, is located within Zone X, an area of 0.2 percent annual chance flood with average flood depths of less than 1 foot or with drainage areas less than 1 square mile. It includes areas protected by levees from the 1 percent annual chance flood.

Due to urban development around the project, a significant grade change (raising grade) is not likely to be implemented.

**Liquefaction**

Liquefaction is primarily associated with loose (low-density), saturated, fine-to medium-grained, cohesionless and uncemented soil grains that are rearranged and densify quickly. Rapid densification of these soils results in a buildup of pore-water pressure. When the pore-water pressure approaches the total overburden pressure, the soil reduces greatly in strength and temporarily behaves similarly to a fluid. Loose, clean granular soils, shallow groundwater, and strong, long-duration ground shaking are the primary contributors for liquefaction to occur. Effects of liquefaction can include sand boils, excessive settlement, bearing capacity failures below structural foundations, and lateral spreading. However, groundwater appears to be greater than 50 feet in depth along the SR-138 (Palmdale Boulevard) and Sierra Highway alignments; these alignments are not included within a liquefaction hazard zone designated by the State of California in its 2003 Seismic Hazard Zones (Palmdale Quadrangle). Therefore, liquefaction is not considered a site-specific hazard.

**Landslides**

Each of the project alignments is located on relatively level ground, and there are no large adjacent slopes; therefore, landslides are not anticipated. In addition, the alignments are not located in a seismic hazard zone with respect to seismically induced landslides.
Potential Impacts

This section addresses permanent impacts of the project on geology/soils/seismicity/topography. Construction impacts are addressed in Section 2.4 of this report.

No Build Alternative

No changes to roadway alignments would occur under the No Build Alternative; therefore, there would be no impacts on geologic resources, soils, or topography. Ground shaking from earthquakes along nearby and more distant faults may occur at the project site, but it is not likely to result in damage to existing pavements, although strong shaking of signal poles and overhead signs could occur.

Build Alternative

The proposed project would not appreciably alter topography within the study area. New fill would be required mainly for widening existing roadways. To reduce any ROW impacts, some fill would be retained with walls. Most changes would occur within existing ROW and would be designed in accordance with standard engineering practices and Caltrans specifications.

Landslides. The project site is relatively flat and not in a seismic hazard zone; therefore, landslides are not considered a hazard in this area. Impacts to project road segments from landslides would be considered less than significant.

Ground Shaking. Strong ground shaking from earthquakes has previously occurred and would continue to occur in the project area. Damage to pavements is unlikely to occur, although strong shaking of signal poles and overhead signs would occur. To minimize geologic and seismic hazards near the project, site-specific investigations, seismic hazard engineering analyses, and engineering recommendations for retaining walls, cuts and fills, and expansive soil treatment would be conducted during final design using Caltrans’ Guidelines for Geotechnical Foundation Investigations and Reports. Specifications for construction would conform to Caltrans Standard Specifications.

Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

Avoidance, minimization, and/or mitigation measures are not required.

Build Alternative

All project components will be designed in accordance with standard engineering practices and Caltrans Standard Specifications. Mitigation measures are not required.
2.2.4 Hazardous Waste or Materials

Regulatory Setting

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

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

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

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

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

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

Under federal and State environmental laws, acquisition of contaminated property creates permanent liability for the new property owner. Project proponents must exercise due diligence to prevent acquisition of contaminated property that may create long-term liability or detrimentally affect project cost, scope, or schedule.

The information presented in this section is based on the Initial Site Assessment, State Route 138 (September 2016) prepared for this project.

Factors Affecting Potential Site Contaminants

Topography
Topography in Palmdale is generally flat, with a very gradual topographic gradient toward the northeast. The topography of the project site along SR-138 (Palmdale Boulevard) ranges from approximately 2,665 feet above mean sea level (msl) in the west to approximately 2,644 feet above msl in the east. The topography of the site along Sierra Highway ranges from approximately 2,646 feet above msl in the north to approximately 2,665 feet above msl in the south.

Surface Water
An unlined stormwater drainage channel that is approximately 30 feet wide and 10 feet deep runs parallel to the UPRR and Metrolink tracks between 6th Street East and the railway. The storm channel is approximately 1.6 miles long and extends north-northwest from approximately Avenue R to East Avenue P-8, where it ends in a natural drainage channel. The stormwater channel was observed during a site inspection on March 14, 2016, to contain a small amount of water from a recent rain. No other surface water was noted onsite during the site inspection. Surface water in stormwater drainage channel and concrete box culvert (underneath SR-138 between 6th Street and Sierra Highway) may contain contaminants from the UPRR and Metrolink tracks.

Geology and Soils
The project site is located in Antelope Valley on the southwestern edge of the Mojave Desert geomorphic province, bounded on the northwest by the Garlock Fault, on the northeast by the Cottonwood-Rosamond Fault, and on the southwest by the San Andreas Fault. Antelope Valley consists of large sediment-filled depressions that are down-dropped between the San Andreas and Garlock faults.

Soils on the site are primarily alluvial sands and gravels transported into Antelope Valley floor from adjacent uplands. A previous subsurface investigation at the northwestern corner of SR-138 (Palmdale Boulevard) and Sierra Highway encountered primarily silty, fine- to medium-grained sands and fine-grained sandy silts, with interbedded layers of fine- and medium-grained sands and fine to coarse sands with gravel from the surface to 101 feet below ground surface (bgs) (Pacific Edge Engineering, Inc., 2002).
Chapter 2 • Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

Hydrogeology

The project site is located in the southern margin of the Lancaster sub-basin, within the southern margin of Antelope Valley Groundwater Basin in the South Lahontan Hydrologic Region. Antelope Valley has an upper, unconfined aquifer (principal aquifer) located within alluvial sediments overlying lacustrine sediments and a lower confined aquifer (deep aquifer) beneath the lacustrine sediments. The primary source of recharge is infiltration of runoff from adjacent uplands. Groundwater beneath Palmdale is reported to be located at a depth of approximately 600 feet bgs (DWR, 2003; Leighton and Phillips, 2003). No monitoring wells were identified within the project area; however, depth to groundwater was generally reported to be in excess of 200 feet bgs at facilities where leaking underground storage tanks (LUSTs) were investigated.

Floodplain

The portion of the project site west of the UPRR ROW is located in the 100-year flood zone, and the portion of the project site east of Sierra Highway is located in the 500-year flood zone. A site inspection did not identify wetlands or conditions that would indicate the presence of a wetland. Brush and a small amount of water from a recent rain were observed within the stormwater drainage channel.

Oil and Gas Fields

The project site is located in Section 26 of Township 6 North, Range 12 West. According to available maps, no oil wells are present on, adjacent to, or within 1 mile of the project site.

Existing Site Conditions

Previous Investigations

Several investigations have previously been conducted within the project area. These include:

- Greenbelt Phase 2 – Closure Report, Right Turn on Palmdale Boulevard, Palmdale Boulevard and Sierra Highway (Gilray Enterprise, Inc., 2001)
- Subsurface Investigation Report, Former Unocal 76 Service Station, 38405 Sierra Highway, Palmdale, California (Pacific Edge Engineering, Inc., 2002).
- Baseline Health Risk Assessment, Former Unocal 76 Service Station, 38405 Sierra Highway, Palmdale, California (Water and Copeland, 2003).
- Initial Site Assessment (Tetra Tech, Inc., 2004).

Scope of Initial Site Assessment

An Initial Site Assessment (ISA) report was prepared in accordance with the American Society of Testing and Materials (ASTM) Standard E1527-05, Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process to identify potential sources of hazardous materials, wastes, or substances in, and adjacent to, the project area (Leighton Consulting, Inc., 2016).
The ISA for the project included the following investigations:

- Electronic regulatory record search to identify possible land uses or environmental conditions that may be of concern.
- Field inspection of the parcels in and adjacent to the project area to look for and document land uses, disturbance, materials, or facilities that may indicate past or current releases or activities that may release or use hazardous materials.
- Historic maps (e.g., Sanborn maps, topographic maps), aerial photographs, and historic city directories to identify facilities or sites that may potentially contain toxic substances.
- Detailed descriptions of the databases searched and the records reviewed are provided in the ISA (Leighton Consulting, Inc. 2016).

The ISA did not include detailed surveys or environmental sampling; it was limited to a site reconnaissance and a review of readily available information. For properties suspected to be contaminated, site-specific investigations are necessary before the nature and extent of contamination can be determined. Consequently, the effects on the project of potentially contaminated sites cannot be evaluated until site-specific investigations are completed.

Further investigation may be necessary to develop contract special provisions addressing exposure to contaminants during construction. Sampling and testing for the following may be necessary:

- Asbestos surveys of structures to be demolished
- Lead-based paint (LBP) surveys of structures to be demolished
- Sampling for creosote of soils around the base of wooden utility poles
- Sampling for aerially deposited lead (ADL) of soils along roadways impacted by the project

**Recognized Environmental Concerns**

The ISA assessed all parcels within and adjacent to the Build Alternative footprint. The following subsections describe the results of the preliminary investigation, as reported in the ISA.

Properties that have a moderate to high potential to adversely affect the project due to potential or known contamination within proposed acquisition or earthwork areas include the following:

- **602 East Palmdale Boulevard**, Assessor Parcel Number (APN) 3009-013-014, located at the southeast corner Palmdale Boulevard and 6th Street East. The business is identified as Domino’s Pizza and it is listed as an open status on the LOS ANGELES CO HMS database. The LOS ANGELES CO HMS database is obtained from files associated with the Los Angeles County Department of Public Works (LACDPW). LACDPW indicated that they did not have a physical file associated with this property and that the “open” status may be associated with a
property transaction or other permit where paperwork was not completed. Based on the preliminary investigation, the open industrial waste permit is likely to be for grease traps. This property is subject to full acquisition and a Phase II Site Investigation will be carried out to identify if there is any existence of any hazardous waste or materials. If found a site clean up will be performed prior to the acquisition.

- **38404 6th Street East, APN 3008-027-024**, located at the northeast corner of Palmdale Boulevard and 6th Street East. This property is subject to full acquisition and a Phase II Site Investigation will be carried out to identify if there is any existence of any hazardous waste or materials. If found a site clean up will be performed prior to the acquisition.

- **556 East Palmdale Boulevard**, APN 3009-007-014, is located on the south side of East Palmdale Boulevard, near the southwestern corner of SR-138 (Palmdale Boulevard) and 6th Street East and just west of Jack-in-the-Box. The site is now vacant, but it was formerly the site of the Terrible Herbst gas station from at least 1976-1980. The property formerly contained three underground storage tanks (USTs) and is listed on several regulatory databases. Los Angeles County Department of Public Works approved the tank closure in 1997. Based on the locations of the former USTs and gasoline dispensers relative to the area of proposed property acquisitions for the project, this property has a moderate potential to be affected by petroleum fuel constituents.

- **561 East Palmdale Boulevard**, APN 3008-026-010, is located on the northwestern corner of SR-138 (Palmdale Boulevard) and 6th Street East. This property was occupied by a service station from at least 1965 through 1976. No regulatory records about the service station were identified. Due to the lack of additional information about investigations or removals of USTs, this property has a moderate potential to be affected by petroleum fuel constituents.

- **703 East Palmdale Boulevard**, APN 3008-035-043, is located on the northeastern corner of SR-138 (Palmdale Boulevard) and Sierra Highway. This property had a 100-gallon UST and 35-gallon distilled UST depicted near SR-138 (Palmdale Boulevard) in a 1918 Sanborn Map and has been a gas station from at least 1968 through the present. Although a release has not been reported at this facility, it is considered to have a moderate potential to be affected by petroleum fuel constituents based on its long-term use as a gas station and the presence of fuel USTs.

- **957 East Palmdale Boulevard**, APN 3008-036-019, is located on the northwestern corner of SR-138 (Palmdale Boulevard) and 10th Street East. This property was occupied by a service station in 1980. No regulatory records about the service station were identified. Due to the lack of additional information about investigations of or removals of the USTs, this property has a moderate potential to be affected by petroleum fuel constituents.

- **960 East Palmdale Boulevard**, APN 3009-025-010, is located on the southwestern corner of SR-138 (Palmdale Boulevard) and 10th Street East. This property has been a gas station from at least 1965 through the present. Gasoline USTs were removed in 1999 from the northeastern corner of the property, and a LUST case was closed in 2015 with petroleum hydrocarbon contamination.
remaining in place. Due to the proximity of previously detected subsurface contamination that was not delineated to the north or northeast, this property has a moderate potential to be affected by petroleum fuel constituents.

- **906 East Palmdale Boulevard**, APN 3009-025-001, located at the southeast corner of Palmdale Boulevard and 9th Street. Based on a review of aerial photographs and a City Directory review, this facility appears to have possibly been used for gas station and/or auto repair purposes from at least 1968 through 1985. Records at LACDPW indicate that two 6,000 gallon gasoline USTs and one 280-gallon waste oil UST were removed on January 29, 1986. A sketch included in the removal inspection form indicated that the USTs were not located directly adjacent to Palmdale Boulevard or 9th Street (within areas of proposed earthwork and acquisition). A fuel release was not reported at this facility and it does not appear that the USTs were replaced with new USTs. Although a release has not been reported at this facility, it is considered to have a moderate potential to adversely affect the project based on the use as a former gas station and the location of the USTs adjacent to an area of proposed acquisition.

- **38021 Sierra Highway**, APN 3009-014-812, is located northwest of East Avenue R and Sierra Highway within the UPRR ROW. This property has been occupied by a railroad maintenance yard from at least the 1970s through the present. Three gasoline USTs were formerly located at the facility. Based on its long-term use as a maintenance yard, this facility has a moderate potential to be affected by petroleum fuel constituents and other contaminants associated with railway yards.

- **38363 Sierra Highway**, APN 3009-014-905 (appears to be formerly identified as APN 3009-14-901), is located within the greenbelt on the southwestern corner of SR-138 (Palmdale Boulevard) and Sierra Highway. This property appears to have been used as a service station from at least 1929 through the 1970s. A waste oil UST was removed in 2000, petroleum hydrocarbon-contaminated soil was removed, and a regulatory closure of the site was issued in 2016. Due to the long-term use of this property as a gas station and the potential that some areas of the site were not previously investigated, this property has a moderate potential to be affected by petroleum fuel constituents.

- **38405 Sierra Highway**, APN 3008-028-919, is located on the northwestern corner of SR-138 (Palmdale Boulevard) and Sierra Highway within the City-owned greenbelt. This property was a gas station from at least 1935 through 2001. All former onsite USTs were reported to have been removed by 2001. Regulatory closure of the site was issued in 2010 for nonresidential property use. No remedial action was conducted on the property, however, and fuel-related soil contamination remained in place. Earthwork may encounter elevated concentrations of petroleum hydrocarbons and oxygenates on portions of the parcel and possibly low concentrations elsewhere on the site.

In addition to known or potential contamination on these properties, the following additional concerns were identified in the proposed project area:
Stormwater Drainage Channel: A storm drainage channel approximately 30 feet wide and 10 feet deep on APNs 3008-028-805 and 3009-014-810 runs parallel to the UPRR tracks between 6th Street East and the railway. This unlined channel receives stormwater runoff from areas south of the site and transports it to the north. A moderate potential exists for contaminants from unknown sources to the south to be transported into the project area by stormwater.

Concrete box culvert that traverses beneath SR-138 between 6TH Street and Sierra Highway: This culvert receives runoff from the railroad and other sources. A moderate potential exists for contaminants from UPRR and Metrolink tracks to be transported by stormwater.

Former Orchards: Aerial photographs indicate that at least portions of the site were used for orchards prior to 1948, and there is a moderate potential that metal-based (i.e., arsenic-containing) pesticides and organochlorine pesticides were applied to portions of the project site.

ADL: ADL was deposited on SR-138 (Palmdale Boulevard) for many years during a period when tetraethyl lead was added to gasoline to prevent engine knocking. Pb was present in vehicle exhaust emissions and has been detected in near-surface soils adjacent to older major thoroughfares.

USTs in ROW: Four gasoline/distillate USTs were depicted within the project area in the northbound lane of Sierra Highway on a 1918 Sanborn Map. The USTs were not depicted on the 1929 Sanborn Map; however, additional records were not identified, and it is uncertain if the USTs were removed or abandoned in place. SR-138 (Palmdale Boulevard) appears to have been widened since 1919, and the USTs, if still present at that time, likely would have been encountered and removed. The USTs do not appear to be located in an area of proposed earthwork for the project, and thus have a low potential to adversely affect the project.

Wooden Utility Poles: Wooden utility poles are treated with creosote along SR-138 (Palmdale Boulevard) between 5th Street East and 10th Street East would be removed as part of the project.

Yellow Stripe Paint: Yellow striped paint on the roadway may be hazardous and the entire thickness of the paint will be tested for lead prior to removal.

Easement from Railroad Property: The easement that will be obtained from the railroad property may contain heavy metals, petroleum products, PCBs, asbestos, polycyclic aromatic hydrocarbons (PAHs), and other contaminants.

ADL Survey and Site Investigation

The ISA prepared for this project recommended that a Site Investigation (SI) and ADL Survey be conducted at or adjacent to the properties within areas of proposed acquisition and earthwork.

Potential Impacts

This section discusses permanent impacts related to hazardous waste and hazardous materials as a result of the proposed project construction. Temporary or construction impacts are discussed in Section 2.4, Construction Impacts.
No Build Alternative

The No Build Alternative would not construct any of the proposed road improvements; therefore, it would not result in permanent impacts related to hazardous wastes or materials.

Build Alternative

Impacts associated with hazardous materials and hazardous wastes are pending the results of the Site investigation. Acquisition of contaminated properties through fee or easement could pose risk to health and safety of workers during project construction and future facility maintenance. Therefore, if the properties that are subject to acquisition are found to be contaminated, special management and disposal of soil and worker protection measures would be required. Direct or indirect permanent impacts associated with hazardous materials are not expected to result from operating the Build Alternative (expanded vehicle operations at the intersection of Sierra Highway and SR-138 [Palmdale Boulevard] and adjoining road segments).

Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

Avoidance, minimization, and/or mitigation measures are not required.

Build Alternative

Measures to minimize impacts related to hazardous waste and materials during construction are provided in Section 2.4, Construction Impacts.
2.2.5 Air Quality

Regulatory Setting

The federal CAA, as amended, is the primary federal law that governs air quality, while the California CAA is its companion state law. These laws, and related regulations by EPA and California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and California Ambient Air Quality Standards (CAAQS) have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO); nitrogen dioxide (NO2); ozone (O3); particulate matter (PM), which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM10) and particles of 2.5 micrometers and smaller (PM2.5); and sulfur dioxide (SO2). In addition, national and state standards exist for Pb, and state standards exist for visibility-reducing particles (VRP), sulfates, hydrogen sulfide (H2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (TACs); some criteria pollutants are also TACs or may include certain TACs in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under NEPA. In addition to this environmental analysis, a parallel “Conformity” requirement under the federal CAA also applies.

Conformity

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

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

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for CO, NO2, O3, particulate matter (PM10 and PM2.5), and in some areas (although not in California), SO2. California has nonattainment or maintenance areas for all of these transportation-related “criteria pollutants” except SO2 and also has a nonattainment area for Pb; however, Pb is not currently required by the federal CAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of RTPs and FTIPs that
include all transportation projects planned for a region over a period of at least 20 years for the RTP and 4 years for the FTIP. RTP and FTIP conformity uses travel demand and emission models to determine whether the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the CAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), FHWA, and Federal Transit Administration (FTA) make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the CAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and “open-to-traffic” schedule of a proposed transportation project is the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a “hot-spot” analysis if an area is “nonattainment” or “maintenance” for CO and/or particulate matter (PM\textsubscript{10} or PM\textsubscript{2.5}). A region is “nonattainment” if one or more of the monitoring stations in the region measures a violation of the relevant standard and EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by EPA and are then called “maintenance” areas. “Hot-spot” analysis is essentially the same, for technical purposes, as CO or PM analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot-spot analysis. In general, projects must not cause the “hot-spot”-related standard to be violated and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or PM violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

**Affected Environment**

Information in this section comes from the *Air Quality Study Report* for the project (February, 2017). Detailed analytical methods, modeling files, and calculation worksheets can be found in the *Air Quality Report*.

**Topography and Climate**

The project site is located in Palmdale, which is situated in the Antelope Valley portion of the Mojave Desert Air Basin (MDAB). Air quality management in the Antelope Valley is under jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD). The AVAQMD jurisdiction spans the western portion of the MDAB and encompasses the incorporated cities of Lancaster and Palmdale, Air Force Plant 42, and the southern portion of EAFB. The MDAB is an arrangement of mountain ranges divided by long broad valleys that often contain dry lakes. The lower mountains interspersed throughout the region commonly reach heights of up to 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest, following the topographical patterns.
The prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains whose passes form the main channels for these air masses. Antelope Valley is bordered by the Tehachapi Mountains to the northwest and by the San Gabriel Mountains to the south.

In summer, the MDAB is generally influenced by a Pacific Subtropical High cell off the coast that inhibits cloud formation and encourages daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada or Alaska because these frontal systems are weak and diffuse before they reach the desert. Most desert moisture arrives as infrequent warm, moist, unstable air masses from the south. The MDAB averages 3 to 7 inches of precipitation per year. It is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, indicating that at least 3 months have maximum average temperatures over 100.4°F.

**Attainment Status**

Criteria pollutants are defined as those pollutants for which the federal and state governments have established ambient air quality standards, based on health criteria, for outdoor concentrations to protect public health and prevent degradation of the environment. The standards for these pollutants are shown in Table 2.2.5-1.

As shown in Table 2.2.5-1, the MDAB within the AVAQMD has been designated as nonattainment of the federal and State 8-hour O₃ standards, and the State PM₁₀ standard. This area is unclassified or in attainment of the federal and State standards for CO; the federal standard for PM₁₀; and the federal and State standards for PM₂.₅.

The MDAB has an approved 2004 O₃ SIP and an adopted 2008 8-hour O₃ SIP (Attainment Plan). The 2008 O₃ SIP was submitted to EPA for approval in February 2008, but it has not been approved because the region exceeded the federal 8-hour O₃ standard on 14 days in that year.

The MDAB has a PM₁₀ SIP pending an adequacy finding with no prior approval. The 1995 PM₁₀ SIP for MDAB (excluding Searles Valley) is pending adequacy findings due to the different motor vehicle emissions not being combined into clearly defined budgets consistent with the federal conformity regulations.
### Table 2.2.5-1: Ambient Air Quality Standards and Attainment Status

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>State Standard(^a)</th>
<th>Federal Standard(^b)</th>
<th>Principal Health and Atmospheric Effects</th>
<th>Typical Sources</th>
<th>State Project Area Attainment Status</th>
<th>Federal Project Area Attainment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (O(_3))</td>
<td>1 hour</td>
<td>0.09 ppm(^c)</td>
<td>---(^d)</td>
<td>High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known TACs. Biogenic volatile organic compounds (VOC) may also contribute to O(_3) formation.</td>
<td>Low-altitude O(_3) is almost entirely formed from reactive organic gases (ROG)/VOCs and nitrogen oxides (NO(_x)) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.</td>
<td>Nonattainment – Extreme</td>
<td>Nonattainment – Severe-17</td>
</tr>
<tr>
<td></td>
<td>8 hours</td>
<td>0.070 ppm</td>
<td>0.070 ppm (4(^{th}) highest in 3 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1 hour</td>
<td>20 ppm</td>
<td>35 ppm</td>
<td>CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical O(_3), and has colorless and odorless properties.</td>
<td>Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td></td>
<td>8 hours</td>
<td>9.0 ppm(^a)</td>
<td>9 ppm</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Table 2.2.5-1: Ambient Air Quality Standards and Attainment Status

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<tr>
<th>Pollutant</th>
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<th>State Standard&lt;sup&gt;a&lt;/sup&gt;</th>
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<th>Principal Health and Atmospheric Effects</th>
<th>Typical Sources</th>
<th>State Project Area Attainment Status</th>
<th>Federal Project Area Attainment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respirable Particulate Matter (PM&lt;sub&gt;10&lt;/sub&gt;)&lt;sup&gt;e&lt;/sup&gt;</td>
<td>24 hours</td>
<td>50 µg/m&lt;sup&gt;3&lt;/sup&gt;&lt;sup&gt;f&lt;/sup&gt;</td>
<td>150 µg/m&lt;sup&gt;3&lt;/sup&gt; (expected number of days above standard ≤ 1)</td>
<td>Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some TACs. Many toxic and other aerosol and solid compounds are part of PM&lt;sub&gt;10&lt;/sub&gt;.</td>
<td>Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.</td>
<td>Nonattainment</td>
<td>Unclassified</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>20 µg/m&lt;sup&gt;3&lt;/sup&gt;</td>
<td>---&lt;sup&gt;e&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine Particulate Matter (PM&lt;sub&gt;2.5&lt;/sub&gt;)&lt;sup&gt;e&lt;/sup&gt;</td>
<td>24 hours</td>
<td>---</td>
<td>35 µg/m&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust PM – a TAC – is in the PM&lt;sub&gt;2.5&lt;/sub&gt; size range. Many toxic and other aerosol and solid compounds are part of PM&lt;sub&gt;2.5&lt;/sub&gt;.</td>
<td>Combustion, including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.</td>
<td>Unclassified</td>
<td>Attainment</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>12 µg/m&lt;sup&gt;3&lt;/sup&gt;</td>
<td>12.0 µg/m&lt;sup&gt;3&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 hours (conformity process&lt;sup&gt;g&lt;/sup&gt;)</td>
<td>---</td>
<td>65 µg/m&lt;sup&gt;3&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secondary Standard (annual; also for conformity process&lt;sup&gt;g&lt;/sup&gt;)</td>
<td>---</td>
<td>15 µg/m&lt;sup&gt;3&lt;/sup&gt; (98&lt;sup&gt;th&lt;/sup&gt; percentile over 3 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2.2.5-1: Ambient Air Quality Standards and Attainment Status

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>1 hour</td>
<td>0.18 ppm</td>
<td>0.100 ppm</td>
<td>Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain and nitrate contamination of stormwater. Part of the &quot;NOX&quot; group of O₃ precursors.</td>
<td>Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>0.030 ppm</td>
<td>0.053 ppm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfur Dioxide (SO₂)</td>
<td>1 hour</td>
<td>0.25 ppm</td>
<td>0.075 ppm</td>
<td>Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.</td>
<td>Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td></td>
<td>3 hours</td>
<td>---</td>
<td>0.5 ppm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 hours</td>
<td>0.04 ppm</td>
<td>0.14 ppm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>---</td>
<td>0.030 ppm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>Monthly</td>
<td>1.5 µg/m³</td>
<td>---</td>
<td>Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a TAC and water pollutant.</td>
<td>Pb-based industrial processes such as battery production and smelters. Pb paint, leaded gasoline. ADL from older gasoline use may exist in soils along major roads.</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td>Calendar Quarter</td>
<td>---</td>
<td>1.5 µg/m³</td>
<td>(for certain areas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rolling 3-month average</td>
<td>---</td>
<td>0.15 µg/m³</td>
<td>(for certain areas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2.2.5-1: Ambient Air Quality Standards and Attainment Status

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>State Standard&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Federal Standard&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Principal Health and Atmospheric Effects</th>
<th>Typical Sources</th>
<th>State Project Area Attainment Status</th>
<th>Federal Project Area Attainment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfate</td>
<td>24 hours</td>
<td>25 μg/m&lt;sup&gt;3&lt;/sup&gt;</td>
<td>---</td>
<td>Premature mortality and respiratory effects. Contributes to acid rain. Some TACs attach to sulfate aerosol particles.</td>
<td>Industrial processes, refineries and oil fields, mines, natural sources such as volcanic areas, salt-covered dry lakes, and large sulfide rock areas.</td>
<td>Attainment</td>
<td>N/A</td>
</tr>
<tr>
<td>Hydrogen Sulfide (H&lt;sub&gt;2&lt;/sub&gt;S)</td>
<td>1 hour</td>
<td>0.03 ppm</td>
<td>---</td>
<td>Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.</td>
<td>Industrial processes such as refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources such as volcanic areas and hot springs.</td>
<td>Attainment</td>
<td>N/A</td>
</tr>
<tr>
<td>Visibility Reducing Particles (VRP)</td>
<td>8 hours</td>
<td>Visibility of 10 miles or more at relative humidity less than 70%</td>
<td>---</td>
<td>Reduces visibility. Produces haze. Note: Not directly related to the Regional Haze program under the Federal CAA, which is oriented primarily toward visibility issues in National Parks and other “Class I” areas; however, some issues and measurement methods are similar.</td>
<td>See PM above. May be related more to aerosols than to solid particles.</td>
<td>Attainment</td>
<td>N/A</td>
</tr>
</tbody>
</table>
## Table 2.2.5-1: Ambient Air Quality Standards and Attainment Status

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>State Standard&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Federal Standard&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Principal Health and Atmospheric Effects</th>
<th>Typical Sources</th>
<th>State Project Area Attainment Status</th>
<th>Federal Project Area Attainment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl Chloride&lt;sup&gt;k&lt;/sup&gt;</td>
<td>24 hours</td>
<td>0.01 ppm</td>
<td>---</td>
<td>Neurological effects, liver damage, cancer. Also considered a TAC.</td>
<td>Industrial processes.</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> State standards are “not to exceed” or “not to be equaled or exceeded” unless stated otherwise.

<sup>b</sup> Federal standards are “not to exceed more than once a year” or as described above.

<sup>c</sup> ppm = parts per million

<sup>d</sup> Prior to June 2005, the 1-hour $O_3$ NAAQS was 0.12 ppm. Emission budgets for 1-hour $O_3$ are still in use in some areas where 8-hour $O_3$ emission budgets have not been developed.

<sup>e</sup> Annual $PM_{10}$ NAAQS revoked October 2006; was 50 $\mu g/m^3$. 24-hr. $PM_{2.5}$ NAAQS tightened October 2006; was 65 $\mu g/m^3$. Annual $PM_{2.5}$ NAAQS tightened from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ December 2012 and secondary annual standard set at 15 $\mu g/m^3$.

<sup>f</sup> $\mu g/m^3$ = micrograms per cubic meter

<sup>g</sup> The 65 $\mu g/m^3$ $PM_{2.5}$ (24-hour) NAAQS was not revoked when the 35 $\mu g/m^3$ NAAQS was promulgated in 2006. The 15 $\mu g/m^3$ annual $PM_{2.5}$ standard was not revoked when the 12 $\mu g/m^3$ standard was promulgated in 2012. The 0.08 ppm 1997 $O_3$ standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (July 20, 2013). Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for newer NAAQS are found adequate, SIP amendments for the newer NAAQS are approved with an emission budget, EPA specifically revokes conformity requirements for an older standard, or the area becomes attainment/unclassified. SIP-approved emission budgets remain in force indefinitely unless explicitly replaced or eliminated by a subsequent approved SIP amendment. During the "Interim" period prior to availability of emission budgets, conformity tests may include some combination of build versus no build, build versus baseline, or compliance with prior emission budgets for the same pollutant.

<sup>h</sup> Final 1-hour $NO_2$ NAAQS published in the Federal Register on February 9, 2010, effective March 9, 2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause redesignation to nonattainment in some areas after 2016.

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

<sup>j</sup> Secondary standard, set to protect public welfare rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.

<sup>k</sup> ARB has identified vinyl chloride and the PM fraction of diesel exhaust as TACs. Diesel exhaust PM is part of $PM_{10}$ and, in larger proportion, $PM_{2.5}$. ARB and EPA have identified Pb and various organic compounds that are precursors to $O_3$ and $PM_{2.5}$ as TACs. There are no exposure criteria for adverse health effects due to TACs, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.

<sup>l</sup> Lead NAAQS are not considered in Transportation Conformity Analysis.

Transportation conformity for O₃ is demonstrated by the proposed project being listed on page 36 of the 2016-2040 RTP/SCS (Project List Appendix, April 2016), identified as FTIP ID LA0G894, which was adopted by SCAG on July 7, 2016 and in the Draft 2017 FTIP (Project Listing, Volume III – Part A), which was approved for release by the SCAG Transportation Committee in September 2016, as FTIP ID LA0G894 and RTP ID 1AL04. The Build Alternative is described in these documents as “Widen and modify existing striping to 3 lanes in each direction on SR-138 from 5th St E 10th St E; intersection modifications/upgrades at Palmdale Blvd/6th St E & Palmdale Blvd/Sierra Highway; Relocation of exist railroad signal mast arms & rail equipment; S/O Palmdale Blvd. Widen Sierra Hwy from 4 to 6 lanes to Ave R (include S/B Sierra Hwy right turn lane @ Avenue R); N/O Palmdale Blvd., widen Sierra Hwy from 4 to 6 lanes to Ave. Q; Extend Class 1 bike lane, 800’ on west side of Sierra Hwy to Ave R.” The design concept and scope of the proposed Build Alternative are consistent with the project description in the 2016-2040 RTP/SCS, the Draft 2017 FTIP, and the open-to-traffic assumptions of SCAG’s regional emissions analysis. The conformity determination for the 2016-2040 RTP/SCS received federal approval on June 1, 2016. The FHWA and FTA approved the conformity determinations for the 2017 FTIP and the 2017 FTIP Amendment #17-01 concurrently on December 16, 2016.

The proposed project is located in an area that is Attainment/Unclassifiable for CO, PM₁₀, and PM₂.₅. No hot-spot analysis is required for conformity purposes, and project-level conformity analysis requirements are thereby satisfied.

**Sensitive Receptors**

The AVAQMD guidelines identify sensitive receptors as land uses including, but not limited to, residences, schools, daycare centers, playgrounds, and medical facilities. These land uses provide facilities for individuals who may be highly susceptible to the effects of air pollution, such as children, the elderly, or those with pre-existing health conditions. Sensitive land uses within 500 feet of the proposed project alignment are displayed in Figure 2.2.5-1.

**Local Ambient Air Quality**

ARB and AVAQMD maintain a network of air quality monitoring stations located throughout the MDAB. Air quality within AVAQMD’s jurisdiction is characterized by concentrations of air pollutants measured at the Lancaster monitoring station (#046624) located at 43301 Division Street in Lancaster, approximately 5.75 miles north of the proposed project alignment, which is maintained by Western Regional Climate Center.
Figure 2.2.5-1: Sensitive Receptors

Legend
Sensitive Receptors
- Residences Within 500 Feet of Project Site
The location of the Lancaster monitoring station relative to the proposed project alignment is shown in Figure 2.2.5-2. This monitoring station has been active since 2001 and measured concentrations of O₃, NO₂, CO, PM₁₀, and PM₂.₅ until 2012; measurements of CO were discontinued after 2012, and measurements of NO₂ were discontinued after 2014. The measured concentrations of air pollutants at the Lancaster monitoring station for 2012-2015, which are the most recent air quality data available through ARB’s online database, are displayed in Table 2.2.5-2. Also presented is the number of days that each applicable CAAQS was exceeded during a given year, if at all.

Figure 2.2.5-2: Lancaster Monitoring Station Location
## Table 2.2.5-2: Antelope Valley Air Pollutant Concentrations

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>National and State Standards</th>
<th>Maximum Concentrations and Frequencies of Standard Exceedances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (O₃)</td>
<td>Maximum 1-hour Concentration (ppm) Days &gt; 0.09 ppm (State 1-hour Standard)</td>
<td>0.112 0.098 0.101 0.132 13 9 3 26</td>
</tr>
<tr>
<td></td>
<td>Maximum 8-hour Concentration (ppm) Days &gt; 0.07 ppm (Federal 8-hour Standard)</td>
<td>0.095 0.094 0.087 0.103 39 34 17 53</td>
</tr>
<tr>
<td></td>
<td>Maximum 8-hour Concentration (ppm) Days &gt; 0.07 ppm (State 8-hour Standard)</td>
<td>0.096 0.094 0.088 0.103 72 53 36 82</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>Maximum 1-hour Concentration (ppm) Days &gt; 0.10 ppm (Federal 1-hour Standard)</td>
<td>0.049 0.048 0.052 NA</td>
</tr>
<tr>
<td></td>
<td>Maximum 1-hour Concentration (ppm) Days &gt; 0.18 ppm (State 1-hour Standard)</td>
<td>0.049 0.047 0.051 NA</td>
</tr>
<tr>
<td></td>
<td>Annual Arithmetic Mean Concentration (ppm) Exceed Federal Standard (0.053 ppm)</td>
<td>0.009 0.008 0.008 NA</td>
</tr>
<tr>
<td></td>
<td>Exceed State Standard (0.030 ppm)</td>
<td>No No No NA</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>Maximum 8-hour concentration (ppm) Days &gt; 9.0 ppm (Federal 8-hour standard)</td>
<td>1.0 N/A N/A N/A</td>
</tr>
<tr>
<td></td>
<td>Maximum 8-hour concentration (ppm) Days &gt; 9.0 ppm (State 8-hour Standard)</td>
<td>1.0 N/A N/A N/A</td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM₁₀)</td>
<td>Maximum 24-hour concentration (µg/m³) Days &gt; 150 µg/m³ (Federal 24-hour Standard)</td>
<td>47.0 47.9 131.5 112.8 0 0 0</td>
</tr>
<tr>
<td></td>
<td>Maximum 24-hour concentration (µg/m³) Days &gt; 50 µg/m³ (State 24-hour Standard)</td>
<td>43.0 173.4 N/A NA</td>
</tr>
<tr>
<td></td>
<td>Annual Arithmetic Mean Concentration (µg/m³) Exceed State Standard (20 µg/m³)</td>
<td>19.8 21.8 24.3 19.3 No Yes Yes No</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM₂.₅)</td>
<td>Maximum 24-hour Concentration (µg/m³) Days &gt; 35 µg/m³ (Federal Standard)</td>
<td>14.0 11.9 42.0 10.4 N/A 0 1 0</td>
</tr>
<tr>
<td></td>
<td>Annual Average Concentration (µg/m³) Exceed State Standard (12 µg/m³)</td>
<td>N/A 5.8 7.2 NA</td>
</tr>
</tbody>
</table>

The following trends in local ambient criteria pollutant concentrations are shown in Table 2.2.5-2:

- **Ozone** – The maximum 1-hour \( O_3 \) concentration recorded from 2012 to 2015 was 0.112 parts per million (ppm). During this period, the California standard of 0.09 ppm was exceeded 3 to 13 times annually, with the highest number of exceedances recorded in 2012. The 8-hour \( O_3 \) NAAQS and CAAQS were exceeded several times every year; the highest number of exceedances occurred in 2012.

- **Fine Particulate Matter (PM\(_{2.5}\))** – From 2012 to 2015, the maximum recorded 24-hour concentration was 42 micrograms per cubic meter (\( \mu g/m^3 \)) in 2014. From 2012 to 2015, the NAAQS of 35 \( \mu g/m^3 \) was exceeded once.

**Mobile Source Air Toxics**

In addition to the criteria air pollutants addressed by NAAQS, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the CAA. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. In EPA’s latest final rule on the control of hazardous air pollutants from mobile sources, 93 compounds were identified, and from this list, nine in particular, were identified as priority MSATs; acetaldehyde, acrolein, benzene, 1,3 – butadiene, diesel particulate matter (DPM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter.

Due to the emerging state of MSAT science and techniques, there are no established criteria for determining the relative significance of air toxics emissions. Given recent developments, however, FHWA recommends a range of options deemed appropriate for addressing the MSAT issue in NEPA documents in its Updated Interim Guidance published on October 18, 2016:

- No analysis required for projects with no potential for meaningful MSAT effects—applicable for categorically excluded projects under CFR Chapter 23, Section 771.117(c); exempt projects under CFR Chapter 40, Section 93.126; or projects with no meaningful impacts on traffic volumes or vehicle mix.

- Qualitative analysis required for projects with low potential MSAT effects—projects that serve to improve operations of highway, transit, or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase emissions.
Quantitative analysis for projects that could have meaningful differences in MSAT emissions among project alternatives. To fall into this category, a project should:

- Create or significantly alter a major intermodal freight facility that could concentrate high levels of DPM in a single location, involving a significant number of diesel vehicles for new projects or accommodating with a significant increase in the number of diesel vehicles for expansion projects; or
- Create new capacity or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the Annual Average Daily Traffic (AADT) is projected to be in the range of 140,000 to 150,000 or greater by the design year; and also
- Proposed to be located in proximity to populated areas.

According to the *Air Quality Study Report* prepared for this project, the proposed project would fall into the second category above, and the qualitative analysis was performed.

According to EPA's MOVES2014a model, emissions of priority MSATs decrease as speed increases. Emissions also would likely be lower than present levels in the design year due to EPA's national control programs that are projected to reduce annual MSAT emissions by more than 90 percent between 2010 and 2050 (Figure 2.2.5-3).

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

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

EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the CAA and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, [http://www.epa.gov/iris/](http://www.epa.gov/iris/)). Each report contains assessments of noncancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.
Figure 2.2.5-3: Projected National Mobile Source Air Toxic Emissions Trends 2010 – 2050 for Vehicles Operating on Roadways using EPA’s MOVES2014a Model

Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

Source: EPA MOVES2014a model runs conducted by FHWA, September 2016.
Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents*. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

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

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

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for DPM. The EPA states that with respect to diesel engine exhaust, “[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0642.htm#quainhal).”

There is also lack of a national consensus on an acceptable level of risk. The current context is the process used by EPA as provided by the CAA to determine whether more stringent controls are required to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this
statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

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

Due to the limitations cited, a discussion (reflecting any local and project-specific circumstances), should be included regarding incomplete or unavailable information in accordance with CEQ regulations [40 CFR 1502.22(b)].

**Naturally Occurring Asbestos**

Naturally occurring asbestos (NOA) can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. The State Department of Conservation, in conjunction with USGS, has prepared a map and spreadsheet inventory of asbestos areas and areas known to contain serpentinite and ultraformic rocks. The locations of the identified deposits within Los Angeles County were examined, and it was determined that the proposed project is not in an area containing NOA (California Department of Conservation, 2000, 2011). Although it is not anticipated that construction activity would encounter NOA, the proposed project would be required to comply with AVAQMD Regulation XIV. The purpose of this rule is to specify work practice requirements to limit asbestos emissions from building demolition and renovation activities, including removal and associated disturbance of asbestos-containing materials (ACM). Standard dust control measures, such as watering, would effectively control unanticipated NOA exposure.

Prior to roadway construction, soil samples would be taken from the project site and analyzed for the presence of hazardous materials, such as asbestos. If asbestos is identified in the test samples, the proposed project would be required to prepare an Asbestos Control Plan in compliance with federal and state regulations.

**Potential Impacts**

This section discusses long-term impacts on air quality in terms of regional air quality conformity and project-level conformity. Temporary impacts associated with construction of the project are addressed in Section 2.4, Construction Impacts.
No Build Alternative

The No Build Alternative would make no project improvements; therefore, no analysis of improvements would be required. However, this alternative could be inconsistent with regional plans and programs such as the 2016-2040 RTP/SCS and 2017 FTIP because the project would not be constructed as approved in the RTP for the area.

Build Alternative

Operational Air Quality Impacts

The Build Alternative would not create new sources of motor vehicle traffic that could change daily or annual traffic volumes on local road segments or that could increase vehicle miles traveled (VMT), as discussed in Section 2.1.5, Traffic and Transportation/Pedestrian and Bicycle Facilities. The Build Alternative would not substantially affect daily average vehicle trips or vehicle mix but, by reducing traffic delays, the Build Alternative would reduce vehicle emissions compared to existing conditions. The Build Alternative also would not create new sources of objectionable odors. Thus, the Build Alternative would have no potential to adversely affect applicable air quality standards or plans, violate an air quality standard, increase exposure of sensitive receptors to air pollutants, or contribute substantially to an existing or projected air quality violation.

Air Quality Conformity

The Build Alternative is contained in the approved RTP and included in the regional emissions analysis that was used to meet regional conformity. Based on the above analysis, the Build Alternative would not delay timely attainment of the PM (PM$_{10}$ or PM$_{2.5}$) NAAQS for the MDAB. The Build Alternative is therefore consistent with the purpose of the SIP and conforms to the requirements of the federal CAA.

Mobile Source Air Toxics

The AADT on the project road segments would be well below the 140,000 AADT threshold for a quantitative MSAT analysis. The AADT on SR-138 (Palmdale Boulevard) within the project limits is expected to range from 44,800 to 60,600 in 2040. Therefore, potential project effects on MSATs were analyzed qualitatively using a method derived in part from an FHWA study entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions among Transportation Project Alternatives*, which provided a basis for identifying and comparing potential differences among MSAT emissions, if any, between alternatives.

The amounts of MSATs emitted under the Build Alternative would be proportional to the changes in traffic delay times and AADT. The Build Alternative would reduce regional MSAT emissions by reducing vehicle delay emissions. Local fleet mix and turnover, AADT growth rates, and local control measures may differ from these national projections. The magnitude of the projected reductions is so great, even after accounting for AADT growth, that MSAT emissions in the project area are likely to be lower in the future in nearly all cases.
Climate Change

Climate change is analyzed in Section 2.6, Climate Change under CEQA. Neither the EPA nor FHWA has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. As stated on FHWA’s climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will aid decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because more requirements have been set forth in California legislation and executive orders on climate change, the issue is addressed in a separate California Environmental Quality Act (CEQA) discussion at the end of this chapter, and may be used to inform the National Environmental Policy Act (NEPA) decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours traveled.

Avoidance, Minimization, and/or Abatement Measures

No Build Alternative

No avoidance, minimization, and/or abatement measure would be required.

Build Alternative

No avoidance, minimization, and/or abatement measure would be required.
2.2.6 Noise

This section evaluates impacts of the proposed project on the noise environment. Construction noise impacts are presented in Section 2.4. The information on the fundamentals of noise can be found in the Noise Assessment Technical Memorandum, State Route 138 prepared for this project (October 2016).

Regulatory Setting

Federal Regulations

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

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA (and Caltrans, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 A-weighted decibels [dBA]) is lower than the NAC for commercial areas (72 dBA). The NAC for use in the NEPA 23 CFR 772 analysis are listed in Table 2.2.6-1.

<table>
<thead>
<tr>
<th>Activity Category</th>
<th>NAC, Hourly A-Weighted Noise Level, Leq(h)</th>
<th>Description of Activity Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>57 (Exterior)</td>
<td>Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.</td>
</tr>
<tr>
<td>B¹</td>
<td>67 (Exterior)</td>
<td>Residential.</td>
</tr>
<tr>
<td>C¹</td>
<td>67 (Exterior)</td>
<td>Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.</td>
</tr>
</tbody>
</table>
Chapter 2 • Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

Table 2.2.6-1: Noise Abatement Criteria

<table>
<thead>
<tr>
<th>Activity Category</th>
<th>NAC, Hourly A-Weighted Noise Level, $L_{\text{eq}(h)}$</th>
<th>Description of Activity Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>52 (Interior)</td>
<td>Auditoriums, daycare centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.</td>
</tr>
<tr>
<td>E</td>
<td>72 (Exterior)</td>
<td>Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.</td>
</tr>
<tr>
<td>F</td>
<td>No NAC—reporting only</td>
<td>Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (e.g., water resources, water treatment, electrical), and warehousing.</td>
</tr>
<tr>
<td>G</td>
<td>No NAC—reporting only</td>
<td>Undeveloped lands that are not permitted.</td>
</tr>
</tbody>
</table>

1 Includes undeveloped lands permitted for this activity category.

The noise levels of common activities are listed in Figure 2.2.6-1 to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

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

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

Caltrans’ Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum of 7 dBA in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include residents’ acceptance and the cost per benefited residence.
Figure 2.2.6-1: Noise Levels of Common Activities

<table>
<thead>
<tr>
<th>Common Outdoor Activities</th>
<th>Noise Level (dBA)</th>
<th>Common Indoor Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jet Fly-over at 300m (1000 ft)</td>
<td>110</td>
<td>Rock Band</td>
</tr>
<tr>
<td>Gas Lawn Mower at 1 m (3 ft)</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Diesel Truck at 15 m (50 ft), at 80 km (50 mph)</td>
<td>90</td>
<td>Food Blender at 1 m (3 ft)</td>
</tr>
<tr>
<td>Noisy Urban Area, Daytime</td>
<td>80</td>
<td>Garbage Disposal at 1 m (3 ft)</td>
</tr>
<tr>
<td>Gas Lawn Mower, 30 m (100 ft)</td>
<td>70</td>
<td>Vacuum Cleaner at 3 m (10 ft)</td>
</tr>
<tr>
<td>Commercial Area</td>
<td>70</td>
<td>Normal Speech at 1 m (3 ft)</td>
</tr>
<tr>
<td>Heavy Traffic at 90 m (300 ft)</td>
<td>60</td>
<td>Large Business Office</td>
</tr>
<tr>
<td>Quiet Urban Daytime</td>
<td>50</td>
<td>Dishwasher Next Room</td>
</tr>
<tr>
<td>Quiet Urban Nighttime</td>
<td>40</td>
<td>Theater, Large Conference Room (Background)</td>
</tr>
<tr>
<td>Quiet Suburban Nighttime</td>
<td>40</td>
<td>Library</td>
</tr>
<tr>
<td>Quiet Rural Nighttime</td>
<td>30</td>
<td>Bedroom at Night, Concert Hall (Background)</td>
</tr>
<tr>
<td>Lowest Threshold of Human Hearing</td>
<td>10</td>
<td>Broadcast/Recording Studio</td>
</tr>
<tr>
<td>Lowest Threshold of Human Hearing</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**California Environmental Quality Act**

Under CEQA, a determination must be made as to whether the proposed project will result in significant adverse environmental effects (i.e., significant environmental impacts). A significant environmental effect under CEQA generally is defined as a substantial or potentially substantial adverse change in the physical environment.

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. Because CEQA focuses on comparisons to the existing baseline conditions, Caltrans determines the significance of noise impacts under CEQA based on a comparison of design-year with-project conditions to the existing conditions baseline.
Pursuant to Caltrans *Traffic Noise Analysis Protocol* (May 2011), Section 7, CEQA and NEPA Considerations, the Project Development Team (PDT) determined that a 12-dB increase between existing and design-year with-project conditions is considered to be a significant impact. If a proposed project is determined to have a significant noise impact under CEQA, then abatement measures must be incorporated into the project unless those measures are not feasible.

**City of Palmdale Municipal Codes**

Chapter 9.18 of the City of Palmdale Municipal Code has provisions to restrict and control excessively loud noise that would disturb peace and cause nuisance to residents; however, there are no specific prescribed limits or criteria stated, particularly those that pertain to vehicular traffic noise.

Provision 8-28.080 of Chapter 8-28 of the City of Palmdale Municipal Code prohibits construction activities in residential zones or within 500 feet of any residence on any Sunday or any other day after 8:00 p.m. or before 6:30 a.m.

**Affected Environment**

The information presented in this section is based on the *Noise Assessment Technical Memorandum, State Route 138* (October 2016) prepared for this project.

A field investigation was conducted on February 4, 2016 to identify frequent outdoor use areas that could be subject to construction or traffic noise impacts from the proposed project. Land uses along the project alignment were categorized as defined by Activity Category in Table 2.2.6-2. As stated in the Protocol, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at multi-family residences.

Short-term measurement locations were selected to represent each major developed area within the project area. Short-term measurements were conducted during morning (a.m.) and afternoon (p.m.) peak hours to assess the existing peak-hour traffic noise environment. Long-term measurements were not conducted because there were no locations where the meter could be securely installed for long-term measurements.
Table 2.2.6-2: Ambient Noise Measurements

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Street Address</th>
<th>Land Use¹</th>
<th>Activity Category and (NAC)</th>
<th>Meter Location</th>
<th>Date</th>
<th>Start Time</th>
<th>Duration (Min)</th>
<th>Measured $L_{eq}(h)$, dBA</th>
<th>Peak Hour $L_{eq}(h)$, dBA³</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>38110 5th Street East, Palmdale, CA</td>
<td>MFR</td>
<td>B (67)</td>
<td>Near Carport</td>
<td>2/4/2016</td>
<td>7:11 am</td>
<td>20</td>
<td>51.4</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3:40 pm</td>
<td>20</td>
<td>55.7</td>
<td></td>
</tr>
<tr>
<td>M2</td>
<td>520 E. Palmdale Boulevard, Palmdale, CA</td>
<td>COM</td>
<td>E (72)</td>
<td>Parking Lot</td>
<td>2/4/2016</td>
<td>8:08 am</td>
<td>20</td>
<td>65.3</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4:51 pm</td>
<td>20</td>
<td>65.6</td>
<td></td>
</tr>
<tr>
<td>M3²</td>
<td>Robert St. Clair Parkway, Palmdale, CA</td>
<td>REC</td>
<td>C (67)</td>
<td>Open Area</td>
<td>2/4/2016</td>
<td>8:36 am</td>
<td>20</td>
<td>62.7</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4:25 pm</td>
<td>20</td>
<td>63.4</td>
<td></td>
</tr>
<tr>
<td>M4</td>
<td>38300 Sierra Highway, Palmdale, CA</td>
<td>PIS</td>
<td>C (67)</td>
<td>Outdoor Use Area</td>
<td>2/4/2016</td>
<td>9:49 am</td>
<td>20</td>
<td>48.9</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5:10 pm</td>
<td>20</td>
<td>57.4</td>
<td></td>
</tr>
<tr>
<td>M5²</td>
<td>Robert St. Clair Parkway, Palmdale, CA</td>
<td>REC</td>
<td>C (67)</td>
<td>Open Area</td>
<td>2/4/2016</td>
<td>10:37 am</td>
<td>20</td>
<td>58.9</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1:51 pm</td>
<td>20</td>
<td>59</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1 Land Use: MFR – multi-family residence; REC – recreational; COM – commercial, PIS – Public Institutional Structure.
2 This receptor represents a bike path, which is a transient location where people would not be exposed to traffic noise for an extended period of time.
3 The highest measured $L_{eq}$ was used.

Source: Noise Assessment Technical Memorandum, 2016
Noise was measured at selected locations to evaluate the existing noise environment. Noise was measured in conformance with the guidelines outlined in FHWA’s *Measuring of Highway Related Noise*, FHWA-DP-96-046. The measurement procedures for this project were as follows:

- Microphones were primarily placed approximately 5 feet above the ground and were positioned more than 10 feet from any wall or building to prevent reflections or unrepresentative shielding of the noise.
- Sound level meters were calibrated before and after each set of measurements.
- Following the calibration of equipment, a windscreen was placed over the microphone.
- Frequency weighting was set on “A,” and the slow detector response was selected.
- Results of the short-term noise measurements were recorded on data sheets in the field.
- During the short-term noise measurements, any noise contaminations, such as train pass-bys, barking dogs, or local traffic, lawn mowers, were noted.

The instruments used for the noise measurements included the following:

- Larson Davis models 812, 820, and 870; Brüel & Kjær 2250.
- Microphone Systems: Larson Davis 820 Sound Level Meter, Larson Davis model PRM 828 microphone preamps; Larson Davis model 2560, ½-inch pressure microphone.
- Larson Davis model CA250 constant pressure microphone calibrator.

Noise was measured at five locations within the project area, as shown in Figure 2.2.6-2. Table 2.2.6-3 identifies the measurement locations and presents the measurement results. No land uses with frequent outdoor use are located adjacent to the project alignment. The nearest residential development is located on 5th Street, north of Avenue R. This residential area is approximately 800 feet west of Sierra Highway and is represented by measurement site M1. No noise-sensitive land uses are located along SR-138 (Palmdale Boulevard); measurement site M2 represents commercial land uses on SR-138 (Palmdale Boulevard).

A bike path runs north-south along the west side of Sierra Highway within the project alignment. Measurement sites M3 and M5 represent this bike path along segments north and south of SR-138 (Palmdale Boulevard), respectively. The path is a transient location where people would not be exposed to traffic noise levels for an extended period; thus, measured noise levels are for informational purposes only. Measurement site M4 represents the outdoor use areas of public institutional buildings (i.e., City Hall and City of Palmdale Public Library). These outdoor use areas are completely shielded from traffic noise by buildings. As shown in Table 2.2.6-3, measured peak-hour ambient noise levels ranged from 56 to 66 dBA, or from 4 to 11 dB below the NAC.
Figure 2.2.6-2: Ambient Noise Measurement Location
Table 2.2.6-3: Expected Project Noise Level Increases

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Increase over Existing Noise Level, dB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 2020</td>
</tr>
<tr>
<td></td>
<td>No Build/ Build</td>
</tr>
<tr>
<td>SR-138 (Palmdale Boulevard) – west of Sierra Highway</td>
<td>0.6 2.5</td>
</tr>
<tr>
<td>SR-138 (Palmdale Boulevard) – east of Sierra Highway</td>
<td>0.6 2.5</td>
</tr>
<tr>
<td>Sierra Highway – north of SR-138 (Palmdale Boulevard)</td>
<td>0.5 2.1</td>
</tr>
<tr>
<td>Sierra Highway – south of SR-138 (Palmdale Boulevard)</td>
<td>0.6 2.1</td>
</tr>
<tr>
<td>6th Street – south of SR-138 (Palmdale Boulevard)</td>
<td>0.5 2.2</td>
</tr>
<tr>
<td>5th Street – south of SR-138 (Palmdale Boulevard)</td>
<td>0.7 2.4</td>
</tr>
<tr>
<td>Avenue R – west of Sierra Highway</td>
<td>0.3 2.2</td>
</tr>
</tbody>
</table>

Note: dB – decibel.


Potential Impacts

This section describes potential impacts on the noise environment of proposed project operations. Under 23 CFR 772.7, this project has been deemed to be a Type I project.3

Based on the land uses adjacent to the project corridor, a qualitative analysis was deemed sufficient for evaluating the noise impacts of the proposed project. Existing noise levels and traffic projections were used to estimate future project noise levels and to assess noise impacts. By correlating measured noise levels at the various locations within the study area with the corresponding existing traffic volumes, the expected future traffic noise increases and levels were estimated and assessed.

Based on the existing and future predicted traffic volumes and the fundamental concept that traffic noise levels would increase by 3 decibels (dB) per doubling of traffic volumes (assuming that traffic speed and other factors remain unchanged), the increases in noise levels for future design-year project conditions relative to the existing condition were estimated (Table 2.2.6-3).

At the closest residential development represented by measurement site M1, traffic noise would increase by approximately 2.5 dB from the existing noise level of 56 dBA. The noise level at the outdoor use area of the public institutional buildings

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3 A Type I project is a project that involves construction of a highway on new location or the physical alteration of an existing highway, which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.
represented by measurement site M4 would increase by approximately 2.3 dB from its existing level of 57 dB. Along the bike path represented by measurement sites M3 and M5, future Year 2040 Build Alternative noise levels would increase by approximately 2.5 to 2.6 dB; however, the bike path is a transient location where people would not be exposed to traffic noise for an extended period of time. At the commercial area represented by M2 on SR-138 (Palmdale Boulevard), the future Build Alternative noise level is expected to increase by approximately 2.7 dB over the existing 66 dBA.

With the existing ambient noise levels measured at the identified locations within the project study area being 4 to 11 dB below the NAC and the anticipated increase of design year 2040 Build Alternative noise levels ranging from 2.2 to 2.7 dB, no project noise impact is expected. In addition, in accordance with CEQA guidelines, no significant impact is anticipated as a result of the project because the projected increase between the future design-year Build Alternative noise levels and the existing baseline noise levels is not expected to exceed the CEQA significance threshold of a 12-dB increase.

**Avoidance, Minimization, and/or Abatement Measures**

**No Build Alternative**

No abatement measures are required.

**Build Alternative**

No abatement measures are required.
2.3 Biological Environment

2.3.1 Natural Communities
This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act (FESA) are discussed below in Section 2.3.5, Threatened and Endangered Species. Wetlands and other waters are also discussed below in Section 2.3.2.

Affected Environment

The following information is presented in the Natural Environmental Study (Minimal Impacts) (NES-MI), (ECORP Consulting, August 2016).

The Biological Study Area (BSA) consists of SR-138 (Palmdale Boulevard), between PM 44.2 and PM 44.7 and Sierra Highway between Avenue R and 500 feet south of Avenue Q. A buffer zone of 500 feet surrounding the project area was also examined during the biological reconnaissance survey (Figure 2.3.1-1). The BSA was intended to encompass the area within which all project activities would occur, plus a buffer around the project site containing biological resources that may be indirectly affected by project activities.

The BSA mainly consists of a highly developed urban landscape consisting of roads, parking lots, houses, apartments, community parks, commercial buildings, restaurants, and businesses. Areas of the project site that were not developed mainly consist of small, isolated plots of land that were substantially disturbed from previous agricultural use, development, unauthorized off-highway vehicle (OHV) use, trash dumping, and foot traffic.

Two land cover types and one natural vegetation community were present within the BSA and are displayed in Figure 2.3.1-1. The BSA contains mostly Disturbed/Developed land, with the remaining areas consisting mainly of non-native grasses, forbs, ornamental trees, and a few small patches of red willow thickets north of SR-138 (Palmdale Boulevard) and west of Sierra Highway. For the most part, these communities offer limited resources for regional wildlife.
Figure 2.3.1-1: Vegetation Map

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SR-138 (5th Street East to 10th Street East) Improvements Project  •  2-140
Red willow thickets is typically characterized as a dense riparian thickets dominated by red willow (*Salix laevigata*), but occasionally also include mulefat (*Baccharis salicifolia*) and other willow species (*Salix* spp.). Scattered emergent Fremont cottonwood (*Populus fremontii*) and California sycamore (*Platanus racemose*) can also be associated with this community. Typically, most stands are too dense to allow much of an herbaceous layer, but when an herbaceous layer is present, it is typically dominated by non-native grasses, including red brome (*Bromus rubens*). The red willow thickets on the project site can be characterized as a small patch of willows just north of the concrete box culvert. The red willow thickets contain an herbaceous understory of non-native grasses and forbs, including red brome, Russian thistle (*Salsola tragus*), and black mustard (*Brassica nigra*).

The red willow thickets on the project site exhibited signs of disturbance, including large amounts of trash, likely due to its close proximity to SR-138 (Palmdale Boulevard) and the concrete box culvert. Although the habitat is disturbed, the red willow thickets in the channel is considered an associated riparian habitat; therefore, it would be regulated under the State of California Fish and Game Code Sections 1600-1616, which states that if (construction) activities will result in the diversion or obstruction of the natural flow of a stream; substantially alter its bed, channel, or bank; impact riparian vegetation; or adversely affect existing fish and wildlife resources, then a Streambed Alteration Agreement is required.

Disturbed/developed is not a vegetation classification, but rather a land cover type. Approximately 174.03 acres of this land cover were mapped within the BSA. This cover type includes roads, buildings, and other disturbed areas that are largely devoid of vegetation cover. The limited plants that do occur are generally non-native invasive species such as red brome, filaree (*Erodium cicutarium*), Russian thistle, and black mustard.

Ornamental plant species occur in areas where they were specifically planted to provide aesthetic or border plantings. Approximately 12.21 acres of this land cover were mapped within the BSA. Ornamental trees and shrubs are present within Dr. Robert C. St. Clair Parkway and the bike path. Additional ornamental trees were identified in low densities in association with the many business complexes, housing complexes, shopping center buildings, and parking lots. Sycamores, palm trees, and other unidentified ornamental tree and shrub species were present within the BSA in addition to the plantings associated with the parkway and bike path.

Habitat connectivity is established when a wildlife movement corridor connects two blocks of undeveloped wildlife habitat. The habitat areas connected can be either native or non-native areas, as long as they support wildlife values. A wildlife corridor is defined as a linear path between such habitats that functions to allow for genetic interchange between wildlife populations. Wildlife corridors provide genetic interchange between otherwise separate wildlife populations and effectively increase the wildlife population viability within each connected block of habitat. They are also useful for dispersal of young animals and are a means for escape and survival during stochastic disturbances such as fire, flood, or other large-scale disturbance.
Chapter 2 • Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

The BSA contains one potential wildlife corridor, an unnamed drainage channel that runs along the UPRR/Metrolink tracks. This corridor is highly disturbed, relatively narrow, and traverses highly urbanized areas. The distance along the drainage channel between the project site and the nearest substantial (> 100 acres) native area of undeveloped land is approximately 1.7 mi to the south and approximately 1.6 mi to the north. No substantial wildlife movement along the unnamed drainage channel between these large blocks of open lands is expected due to the disturbances present.

Most of the species expected to use this feature are expected to be well-adapted to urban environments, and include common species, such as coyotes (Canis latrans) and Virginia opossum (Didelphis virginiana). Although the amount of urban development along most of the unnamed drainage channel severely limits its functionality as a regional wildlife movement corridor, it undoubtedly provides a local movement corridor for these species throughout the project site and between urban habitat patches. The drainage channel also likely represents a water source during and immediately following local rain events and provides some vegetative cover as well.

**Potential Impacts**

This section discusses permanent impacts of the proposed project on natural communities. Construction impacts are discussed in Section 2.4 of this chapter.

**No Build Alternative**

Because no ground disturbance would occur under the No Build Alternative, there would be no impacts on natural communities of special concern.

**Build Alternative**

No impacts on sensitive habitats or natural communities of special concern are expected. A drainage channel that is likely jurisdictional as a Water of the State and as a streambed would be affected during construction. The drainage channel is regulated by RWQCB and by California Department of Fish and Wildlife (CDFW), and would require compliance with permitting through those respective state agencies.

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

**No Build Alternative**

No mitigation would be required under the No Build Alternative.

**Build Alternative**

No long-term permanent impacts to natural community were identified, therefore, no mitigation measure is required. Measures to minimize impact during project construction is are discussed in Section 2.4, Construction Impacts.
2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under several laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the CWA (33 U.S.C. 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation’s waters would be significantly degraded. The Section 404 permit program is run by USACE with oversight by EPA.

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

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

The EO for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this EO states that a federal agency, such as FHWA and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction, and (2) the proposed project includes all practicable measures to minimize harm.
At the state level, wetlands and waters are regulated primarily by SWRCB, the RWQCBs, and CDFW. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by WDRs and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities that may result in a discharge to waters of the United States. This is most frequently required in tandem with a Section 404 permit request. See Section 2.2.2, Water Quality, for more details.

**Affected Environment**

The following information is presented in the NES-MI, (ECORP Consulting, August 2016).

One unnamed drainage channel, located immediately to the west of the UPRR/Metrolink tracks was identified within the BSA (see Figure 2.3.1-1). The channel is man-made and crosses underneath SR-138 (Palmdale Boulevard) via a 6- by 10-foot double reinforced concrete box culvert built in 1960. The stream has an unvegetated streambed, with vegetation along the channel sides. The vegetation present within the drainage channel consists of a combination of grasses, forbs, shrubs, and trees, including a small patch of red willow thickets just north of the concrete box culvert. The channel mainly consists of an earthen bottom and earthen banks, with only a small area of concrete and rip-rap reinforcement on either side of the concrete box culvert. Although a formal jurisdictional delineation was not performed, no wetland characteristics or wetland vegetation were observed within the channel.

As stated in the *Preliminary Drainage Study*, the unnamed drainage channel flows north along Sierra Highway through Palmdale and Lancaster, connecting to a series of earthen ditches and ultimately discharging into Piute Ponds (CDM, 2010). It is believed that the unnamed drainage channel is a downstream reach of the Anaverde Creek. Upstream of the project site, the concentrated flows of the Anaverde Creek split just east of SR-14 and become sheet flow; therefore, the unnamed earthen channel is considered independent (CDM, 2010).

The BSA, and the unnamed drainage channel, is located in the Lake Palmdale-Piute Ponds Watershed. All of the drainage features located in the Lake Palmdale-Piute Ponds Watershed are classified as ephemeral streams. An ephemeral stream has flowing water only during, and for a short period after, precipitation events in a
typical year. Groundwater is not a source of water for the stream, but rather they are primarily supported by runoff from rainfall. All of the drainages within the BSA in the Lake Palmdale-Piute Ponds Watershed are considered isolated from interstate waters and, as such, have no federal nexus and are not subject to USACE jurisdiction. CDFW and RWQCB, however, maintain jurisdiction over the wetland and non-wetland waters identified within this watershed. The characteristics observed during the biological reconnaissance survey within the drainage feature suggested that it conveys surface water, and although a formal jurisdictional delineation was not conducted as part of this study, the drainage channel is likely jurisdictional as a Water of the State and regulated by the RWQCB and CDFW as a streambed.

**Potential Impacts**

**No Build Alternative**

Because no ground disturbance or construction would occur under the No Build Alternative, there would be no impacts to wetlands and Waters of the State.

**Build Alternative**

An analysis of the preliminary design plans of the project indicates permanent impacts and temporary impacts to the jurisdictional feature are unavoidable. The impacts to the unnamed drainage channel would be associated with lengthening the 6- by 10-foot concrete box culvert that currently conveys flows of the unnamed drainage channel beneath SR-138 (Palmdale Boulevard). The culvert is located where the street widening is proposed and, to accommodate widening of the street, both sides of the culvert would need to be extended.

Although the drainage channel is man-made, the impacts described in the preliminary design plans would reduce the amount of open channel along the ditch, and for that reason, this portion of the impact to the jurisdictional feature is considered permanent. Based on the preliminary design plans, permanent impacts to the channel include lengthening the existing 98-linear foot (LF) concrete box culvert by 45 LF. Lengthening of the box culvert would convert approximately 45 LF of existing open channel to concrete box culvert (Figure 2.3.2-1). The design plans also include permanent impacts to an additional approximately 40 LF (20 LF on each side) of the channel beyond the end of the new culvert, which would potentially include headwalls, wing walls, concrete paving/apron, rip-rap, or channel conforming. Permanent direct impacts to the regulated streambed and waters of the State are approximately 0.08 acre (85 LF) (Figure 2.3.2-1). The permanent impacts described above also include removal of approximately 0.02 acre of associated riparian habitat (red willow thickets) (Figure 2.3.2-1). Temporary impacts to regulated streambed and waters of the State are approximately 0.02 acre (20 LF [10 LF on each side]) (Figure 2.3.2-1). These temporary impacts could also include equipment maneuvering and material staging.
Figure 2.3.2-1: Impacts to Jurisdictional Areas
Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

No mitigation would be required under the No Build Alternative.

Build Alternative

Compensatory mitigation may be required for the proposed permanent impacts on 0.02 acre of riparian habitat (removal of red willow thicket) from lengthening the concrete box culvert beneath SR-138 (Palmdale Boulevard). The permitting process for the project is ongoing. Mitigation for these impacts may require the acquisition or enhancement of compensatory habitat at a ratio of at least 1:1.
2.3.3 Plant Species

Regulatory Setting

The United States Fish and Wildlife Service (USFWS) and CDFW 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 FESA and/or the California Endangered Species Act (CESA). Please see Section 2.3.5, Threatened and Endangered Species, for detailed information about these species.

This section discusses all other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 U.S.C., Section 1531, et seq. (see also 50 CFR Part 402). The regulatory requirements for CESA 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 CEQA, California PRC, Sections 2100-21177.

Affected Environment

The following information is presented in the NES-MI, (ECORP Consulting, August 2016).

A search of the California Natural Diversity Database (CNDDB) and the California Native Plant Society Electronic Inventory (CNPSEI) was conducted for the USGS 7.5-minute Palmdale topographic quadrangle on which the project is situated, plus the surrounding topographic quadrangles, including Acton, Alpine Butte, Juniper Hills, Lancaster East, Lancaster West, Littlerock, Pacifico Mountain, Pacifico Mountain, and Ritter Ridge. A total of 30 plant species appeared in the literature search, but due to the highly developed/disturbed nature of the project area and the absence of suitable habitat, these species are all presumed absent, as shown in Table 2.3.3-1. Additionally, a plant species compendium of all plant species identified during the survey is included in Appendix A of the NES-MI. For this study, plants with CNPS designation of 4.3 were not included in this analysis, because they are defined as “not very endangered in California (less than 20 percent of occurrences threatened or no current threats known) (CNPS, 2016).
### Table 2.3.3-1: Sensitive Plant Species Documented within the Project Region

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/ Absent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Acanthoscyphus parishii var. parishii</em> Parish’s oxytheca</td>
<td>US:-- CA:-- CNPS: 4.2</td>
<td>Occurs in chaparral and lower montane coniferous forests with sandy or gravelly soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Androsace elongata ssp. Acuta</em> California Androsace</td>
<td>US:-- CA:-- CNPS: 4.2</td>
<td>Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grasslands.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Arctostaphylos glandulosa ssp. Gabriensis San Gabriel Manzanita</em></td>
<td>US:-- CA:-- CNPS: 1B.2</td>
<td>Occurs in chaparral with rocky soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Astragalus preussii var. Laxiflorus Lancaster Milkvetch</em></td>
<td>US:-- CA:-- CNPS: 1B.1</td>
<td>Occurs in chenopod scrub.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Calochortus clavatus var. gracilis</em> Slender Mariposa Lily</td>
<td>US:-- CA:-- CNPS: 1B.2</td>
<td>Occurs in chaparral, coastal scrub, valley and foothill grassland.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Calochortus palmeri var. palmeri</em> Palmer's Mariposa Lily</td>
<td>US:-- CA:-- CNPS: 1B.2</td>
<td>Occurs in meadows and seeps, chaparral, lower montane coniferous forest.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Calochortus striatus</em> Alkali Mariposa Lily</td>
<td>US:-- CA:-- CNPS: 1B.2</td>
<td>Occurs in chaparral, chenopod scrub, Mojavean desert scrub, meadows and seeps with alkaline and mesic soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Calystegia peirsonii</em> Peirson's Morning Glory</td>
<td>US:-- CA:-- CNPS: 4.2</td>
<td>Occurs in chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Canbya candida</em> White Pygmy Poppy</td>
<td>US:-- CA:-- CNPS: 4.2</td>
<td>Occurs in Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland with gravelly, sandy, or granitic soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
</tbody>
</table>
## Table 2.3.3-1: Sensitive Plant Species Documented within the Project Region

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<th>Species</th>
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<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Castilleja gleasoni</strong>&lt;br&gt;Mount Gleason Indian Paintbrush</td>
<td>US:—&lt;br&gt;CA: SR&lt;br&gt;CNPS: 1B.2</td>
<td>Occurs in chaparral, lower montane coniferous forest, pinyon and juniper woodland with granitic soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><strong>Cercocarpus betuloides var. blancheae</strong>&lt;br&gt;Island Mountain-Mahogany</td>
<td>US:—&lt;br&gt;CA:—&lt;br&gt;CNPS: 4.3</td>
<td>Occurs in closed cone coniferous forests and chaparral habitats.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><strong>Chorizanthe parryi var. fernandina</strong>&lt;br&gt;San Fernando Valley Spineflower</td>
<td>US: FC&lt;br&gt;CA: SE&lt;br&gt;CNPS: 1B.1</td>
<td>Occurs in coastal scrub (sandy), valley and foothill grassland.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><strong>Chorizanthe parryi var. parryi</strong>&lt;br&gt;Parry's Spineflower</td>
<td>US:—&lt;br&gt;CA:—&lt;br&gt;CNPS: 1B.1</td>
<td>Occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands with sandy soils or rocky soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><strong>Chorizanthe spinosa</strong>&lt;br&gt;Mojave Spineflower</td>
<td>US:—&lt;br&gt;CA:—&lt;br&gt;CNPS: 4.2</td>
<td>Occurs in chenopod scrub, Joshua tree woodland, Mojavean desert scrub habitats and playas in sometimes alkaline soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><strong>Clinopodium mimuloides</strong>&lt;br&gt;Monkey-flower Savory</td>
<td>US:—&lt;br&gt;CA:—&lt;br&gt;CNPS: 4.2</td>
<td>Occurs in mesic streambanks in chaparral and north coast coniferous forests.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><strong>Eriastrum rosamondense</strong>&lt;br&gt;Rosamond Eriastrum</td>
<td>US:—&lt;br&gt;CA:—&lt;br&gt;CNPS: 1B.1</td>
<td>Occurs in alkaline hummocks, often sandy areas, chenopod scrub, and vernal pools. Known only from the Rosamond and Rogers Dry Lake areas.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><strong>Goodmania luteola</strong>&lt;br&gt;Golden Goodmania</td>
<td>US:—&lt;br&gt;CA:—&lt;br&gt;CNPS: 4.2</td>
<td>Occurs in alkaline or clay soils in Mojave Desert scrub, meadows and seeps, playas, and valley and foothill grasslands.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><strong>Juglans californica</strong>&lt;br&gt;Southern California Black Walnut</td>
<td>US:—&lt;br&gt;CA:—&lt;br&gt;CNPS: 4.2</td>
<td>Occurs in alluvial soils in chaparral, cismontane woodland, coastal scrub, and riparian woodland.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td>Species</td>
<td>Status</td>
<td>General Habitat Description</td>
<td>Habitat Present/Absent</td>
<td>Rationale</td>
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<tr>
<td>-------------------------</td>
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<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td><em>Layia heterotricha</em></td>
<td>US:-- CA:--</td>
<td>Occurs in cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland with alkaline or clay soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Lilium parryi</em></td>
<td>US:-- CA:--</td>
<td>Occurs in lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest with mesic soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Linanthus concinnus</em></td>
<td>US:-- CA:--</td>
<td>Occurs in chaparral, lower and upper montane coniferous forests with rocky soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Loeflingia squarrosa</em></td>
<td>US:-- CA:--</td>
<td>Occurs in desert dunes, Great Basin scrub, and Sonoran desert scrub.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Lupinus peirsonii</em></td>
<td>US:-- CA:--</td>
<td>Occurs in Joshua tree woodland, lower montane coniferous forest, pinyon-juniper woodland, and upper montane coniferous forest.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Nemacladus secundiflorus</em></td>
<td>US:-- CA:--</td>
<td>Occurs in chaparral and valley and foothill grassland.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Navarretia ojaiensis</em></td>
<td>US:-- CA:--</td>
<td>Vernal pools, chenopod scrub, marshes and swamps. San Diego hardpan and San Diego claypan vernal pools; in swales and vernal pools, often surrounded by other habitat types.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Opuntia basilaris</em></td>
<td>US:-- CA:--</td>
<td>Occurs in chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon-juniper woodland.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
</tbody>
</table>
### Table 2.3.3-1: Sensitive Plant Species Documented within the Project Region

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<th>Species</th>
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<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oreonana vestita</td>
<td>US:-- CA:-- CNPS: 1B.3</td>
<td>Subalpine coniferous forest, upper montane coniferous forest, Lower montane coniferous forest on gravel or talus slopes.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td>Woolly Mountain-parsley</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quercus durata var. gabrielensis</td>
<td>US:-- CA:-- CNPS: 4.2</td>
<td>Chaparral and cismontane woodland.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td>San Gabriel Oak</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stylocline masonii</td>
<td>US:-- CA:-- CNPS: 1B.1</td>
<td>Occurs in chenopod scrub, pinyon and juniper woodland with sandy soils.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td>Mason's Neststraw</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symphyotrichum greatae</td>
<td>US:-- CA:-- CNPS: 1B.3</td>
<td>Occurs in broadleaf upland forest, chaparral, cismontane woodland, and lower montane coniferous forest riparian woodland.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td>Greata's Aster</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**US: Federal Classifications**
- FE Federal Endangered
- FT Federal Threatened
- PE Proposed Endangered
- PT Proposed Threatened
- FC Federal Candidate
- BCC Bird of Conservation Concern

**CA: State Classifications**
- SE State Endangered
- ST State Threatened
- SR State Rare
- SCAN State Candidate
- SFP State Fully Protected
- SSC California Species of Special Concern

**CNPS: California Native Plant Society Classifications**
- 1A Plants presumed extinct in California
- 1B Plants considered by CNPS to be rare, threatened, or endangered in California and elsewhere
- 2 Plants considered by CNPS to be rare, threatened, or endangered in California, but more common elsewhere
- 3 Plants considered by CNPS to require more information
- 4: Plants of limited distribution
  - 1 Seriously endangered in CA (over 80 percent of occurrences threatened/high degree and immediacy of threat)
  - 2 Fairly endangered in CA (20 to 80 percent occurrences threatened)

**Habitat Present/Absent within the BSA**
- P Present
- A Absent
- CH Critical Habitat
Special-status plant species reported near the project site include alkali mariposa lily (*Calochortus striatus*), golden goodmania (*Goodmania luteola*), Lancaster milkvetch (*Astragalus preussii var. laxiflorus*), Mojave spineflower (*Chorizanthe spinosa*), and sagebrush loeflingia (*Loeflingia squarrosa var. artemisiarum*); however, all of the species identified near the project site are presumed absent due to lack of suitable habitat within the BSA. No special-status plant species or suitable habitat for special-status plant species were identified within the BSA during the biological reconnaissance survey. Focused special-status plant surveys were not conducted due to lack of suitable habitat within the BSA.

**Potential Impacts**

All sensitive plant species identified in the literature search are presumed absent due to lack of suitable habitat within the BSA. No impacts are anticipated for sensitive plant species.

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

**No Build Alternative**

Avoidance, minimization, and/or mitigation measures are not required.

**Build Alternative**

All sensitive plant species identified in the literature search are presumed absent due to lack of suitable habitat within the BSA. No avoidance measures for sensitive plant species are necessary.
2.3.4 Animal Species

**Regulatory Setting**

Many state and federal laws regulate impacts to wildlife. USFWS, the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries), and CDFW are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under FESA or CESA. Species listed or proposed for listing as threatened or endangered are discussed in Section 3.3.5. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations relevant to wildlife include the following:

- NEPA
- Migratory Bird Treaty Act (MBTA)
- Fish and Wildlife Coordination Act
- FESA
- Bald and Golden Eagle Protection Act

State laws and regulations relevant to wildlife include the following:

- CEQA
- CESA
- Title 14, California Code of Regulations (CCR), Section 460
- Title 14, CCR, Section 670.7
- Sections 4150 and 4152 of the California Fish and Game Code
- Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code
- Section 3503 of the California Fish and Game Code
- Section 3503.5 of the California Fish and Game Code
- Section 3513 of the California Fish and Game Code

**Affected Environment**

The following information is presented in the NES-MI, (ECORP Consulting, August 2016).

A review of CDFW’s CNDDB was performed before a survey was conducted to determine whether special-status species were previously reported in the area. The database search was conducted for the USGS 7.5-minute Palmdale topographic quadrangle on which the project is situated, plus the surrounding topographic quadrangles, including Acton, Alpine Butte, Juniper Hills, Lancaster East, Lancaster West, Littlerock, Pacifico Mountain, Pacifico Mountain, and Ritter Ridge (CNDDB, 2016; CNPS, 2016).

A total of 23 animal species appeared in the literature search, and based on the available suitable habitat on the site, 7 of these species were determined to have
potential to occur within the BSA (Table 2.3.4-1). The species with potential to occur within the BSA are described below. Additionally, a wildlife species compendium of all wildlife species identified during the survey is included in Appendix B of the NES-MI. For this study CDFW–Watch List, United States Forest Service–Sensitive, and Bureau of Land Management–Sensitive wildlife species were not analyzed.

**Table 2.3.4-1: Sensitive Animal Species Documented within the Project Region**

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Agelaius tricolor</em></td>
<td>US: --</td>
<td>Highly colonial species, most numerous in Central Valley and</td>
<td>A</td>
<td>Presumed Absent. No suitable nesting habitat within the BSA.</td>
</tr>
<tr>
<td>tri-colored blackbird (nesting</td>
<td>CA: SE</td>
<td>vicinity. Requires open water, protected nesting substrate, and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>colony)</td>
<td></td>
<td>foraging area with insect prey within a few kilometers of the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>colony.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Aquila chrysaetos</em></td>
<td>US: --</td>
<td>Rolling foothills, mountain areas, sage-juniper flats, and</td>
<td>P</td>
<td>Low potential to occur. No suitable nesting or foraging habitat was</td>
</tr>
<tr>
<td>golden eagle (nesting and</td>
<td>CA:SFP</td>
<td>desert with sufficient mammalian prey base. Nests are most</td>
<td></td>
<td>present within the BSA; however, this species could fly over the project</td>
</tr>
<tr>
<td>wintering)</td>
<td></td>
<td>often on rock ledges and cliffs.</td>
<td></td>
<td>site while accessing foraging habitat in the surrounding area. Nearest</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>documented occurrence was recorded approximately 9.5 miles south of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>the BSA.</td>
</tr>
<tr>
<td><em>Athene cunicularia</em></td>
<td>US: --</td>
<td>Associated with low-lying vegetation, open scrub, grassland,</td>
<td>P</td>
<td>Moderate potential to occur. Low quality, highly disturbed, isolated</td>
</tr>
<tr>
<td>burrowing owl (burrow sites)</td>
<td>CA: SSC</td>
<td>and agricultural habitats.</td>
<td></td>
<td>patches of habitat were present within the BSA. No occupied burrowing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>owl burrows were identified during the biological reconnaissance survey.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nearest documented occurrence was recorded approximately 1.7 miles</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>northwest of the BSA.</td>
</tr>
</tbody>
</table>

SR-138 (5th Street East to 10th Street East) Improvements Project • 2-155
## Table 2.3.4-1: Sensitive Animal Species Documented within the Project Region

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Buteo swainsoni</em> (Swainson's hawk)</td>
<td>US: --</td>
<td>Nests in stands with few trees in juniper-sage flats, riparian areas and in oak savanna.</td>
<td>P</td>
<td>Low potential to occur. No suitable foraging habitat was present within the BSA, but this species could fly over the project site while accessing foraging habitat in the surrounding areas. Marginally suitable nesting habitat was present within some of the larger ornamental trees within the BSA, but due to the urban nature of the project site, nesting onsite is highly unlikely. Two documented occurrences were recorded within 10 miles of the BSA.</td>
</tr>
<tr>
<td></td>
<td>CA: ST</td>
<td>Forages in grassland, or cultivated field areas supporting rodent populations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Charadrius montanus</em> (mountain plover)</td>
<td>US:--</td>
<td>Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometime sod farms.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td></td>
<td>CA: SSC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Gymnogyps californianus</em> (California condor)</td>
<td>US: FE</td>
<td>Usual habitat is mountainous country at low and moderate elevations, especially rocky and brushy areas with cliffs available for nest sites, with foraging habitat encompassing grasslands, oak savannas, mountain plateaus, ridges, and canyons</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td></td>
<td>CA: SE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Lanius ludovicianus</em> (loggerhead shrike)</td>
<td>US: --</td>
<td>Inhabits large, open areas conducive to hunting. Nests in dense brush and shrubs.</td>
<td>P</td>
<td>High potential to occur. Not observed during surveys, but known to inhabit areas close to the BSA. Suitable nesting and foraging habitat was present within the BSA. Nearest documented occurrence was recorded approximately 2.3 miles northwest of the BSA.</td>
</tr>
<tr>
<td></td>
<td>CA: SSC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Vireo bellii pusillus</em> (least Bell’s vireo)</td>
<td>US: FE</td>
<td>Nests in low riparian habitat near water or dry river bottoms below 2,000 feet above msl.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td></td>
<td>CA: SE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2.3.4-1: Sensitive Animal Species Documented within the Project Region

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<tr>
<th>Species</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reptiles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Anniella pulchra</em> silvery legless lizard</td>
<td><strong>US:</strong>-- <strong>CA:</strong> SSC</td>
<td>Found in moist, sandy or loamy soils with sparse vegetation. Often associated with leaf litter.</td>
<td><strong>P</strong></td>
<td>Moderate potential to occur. Marginally suitable, isolated patches of habitat are present within the BSA. Nearest documented occurrence was recorded approximately 1 mile southwest of the BSA.</td>
</tr>
<tr>
<td><em>Emys marmorata</em> western pond turtle</td>
<td><strong>US:</strong>-- <strong>CA:</strong> SSC</td>
<td>Inhabits deep pools in permanent or nearly permanent bodies of water below 6,000 feet with basking sites.</td>
<td><strong>A</strong></td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Gopherus agassizii</em> Agassiz’s desert tortoise</td>
<td><strong>US:</strong> FT <strong>CA:</strong> ST</td>
<td>Prefers desert scrub habitats, arid sandy washes, and canyon bottoms</td>
<td><strong>A</strong></td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Phrynosoma blainvillii</em> coast horned lizard</td>
<td><strong>US:</strong>-- <strong>CA:</strong> SSC</td>
<td>Occurs in a variety of habitats, including scrubland and grassland; typically found in areas with sandy soil, scattered shrubs, and ant colonies.</td>
<td><strong>A</strong></td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Thamnophis hammondi</em> two-striped garter snake</td>
<td><strong>US:</strong>-- <strong>CA:</strong> SSC</td>
<td>Occurs in or near permanent water sources.</td>
<td><strong>A</strong></td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><strong>Amphibians</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Anaxyrus californicus</em> arroyo toad</td>
<td><strong>US:</strong> FE <strong>CA:</strong> SSC</td>
<td>Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, and desert washes with sandy bottoms.</td>
<td><strong>A</strong></td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Rana aurora draytonii</em> California red-legged frog</td>
<td><strong>US:</strong> FT <strong>CA:</strong> SSC</td>
<td>Found in lowlands and foothills in or near deep permanent water sources with dense or shrubby or emergent riparian vegetation.</td>
<td><strong>A</strong></td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
</tbody>
</table>
Table 2.3.4-1: Sensitive Animal Species Documented within the Project Region

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Rana muscosa</em> mountain yellow-legged frog</td>
<td>US: FE CA: SE/SSC</td>
<td>Occurs at elevations between 1,200 and 7,500 feet above msl. Requires permanent water sources including streams, rivers, perennial creeks, pools, or other forms of aquatic habitat.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Antrozous pallidus</em> pallid bat</td>
<td>US: -- CA: SSC</td>
<td>Roosts in dry, open habitats. Occurs in desert, grasslands, shrublands, woodlands, and forests.</td>
<td>A</td>
<td>Moderate potential to occur. Marginally suitable foraging habitat was present within the study area and adjacent to the study area. Additionally, some of the buildings and trees onsite could provide roosting habitat. This species could also roost nearby and forage onsite or travel through the site while accessing adjacent areas. The nearest documented occurrence was recorded over 10 miles south of the study area.</td>
</tr>
<tr>
<td><em>Chaetodipus fallax pallid</em> San Diego pocket mouse</td>
<td>US:-- CA: SSC</td>
<td>Desert washes, pinyon/juniper woodlands, Sonoran desert scrub. Associated with sandy herbaceous areas, usually with rocks or coarse gravel. Marginally suitable, isolated patches of habitat are present within the study area.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Corynorhinus townsendii</em> Townsend’s big-eared bat</td>
<td>US:-- CA: SCAN</td>
<td>Occurs in a variety of habitats throughout California. Roosts in caves, mines, open areas, and buildings. Forages along the edges of woodland and riparian areas.</td>
<td>P</td>
<td>Moderate potential to occur. Marginally suitable foraging habitat was present within the study area and adjacent to the study area. Additionally, some of the buildings and trees onsite could provide roosting habitat. This species could also roost nearby and forage onsite or travel through the site while accessing adjacent areas. The nearest documented occurrence was recorded approximately 8.5 miles south of the study area.</td>
</tr>
</tbody>
</table>
### Table 2.3.4-1: Sensitive Animal Species Documented within the Project Region

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Dipodomys merriami parvus</em> San Bernardino kangaroo rat</td>
<td>US: FE CA: SSC</td>
<td>Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and floodplains.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Xerospermophilus mohavensis</em> Mohave ground squirrel</td>
<td>US:-- CA: THR</td>
<td>Drier open stages of shrub, forest, and herbaceous habitats, with friable soils; needs sufficient food and open, uncultivated ground; digs burrows.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Catostomus santaanae</em> Santa Ana sucker</td>
<td>US: FT CA: SE</td>
<td>Habitat generalists, but prefers streams with sand-rubble-boulder bottoms, cool, clear water, and algae.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
<tr>
<td><em>Gasterosteus aculeatus williamsoni</em> unarmored threespine stickleback</td>
<td>US: FE CA:SE/SFP</td>
<td>Prefers slow-moving reaches or quiet-water microhabitats in streams and rivers. Favorable habitats are usually shaded by dense and abundant vegetation.</td>
<td>A</td>
<td>Presumed Absent. No suitable habitat within the BSA.</td>
</tr>
</tbody>
</table>

**US: Federal Classifications**
- FE Federal Endangered
- FT Federal Threatened
- PE Proposed Endangered
- PT Proposed Threatened
- FC Federal Candidate
- BCC Bird of Conservation Concern

**CA: State Classifications**
- SE State Endangered
- ST State Threatened
- SR State Rare
- SCAN State Candidate
- SFP State Fully Protected
- SSC California Species of Special Concern

Special-status animal species reported near the project site with potential to occur included the state-listed threatened Swainson’s hawk (*Buteo swainsoni*), the CDFW fully protected golden eagle (*Aquila chrysaetos*), and the Townsend’s big-eared bat (*Corynorhinus townsendii*), which is a candidate for state listing as threatened. Additionally, there were six other CDFW species of special concern (SSC) that have potential to occur within the BSA. A description of each species and their potential for occurrence is presented below.

No special-status animal species were identified during the survey, and no focused wildlife surveys were conducted as part of this study.
Silvery Legless Lizard

The silvery legless lizard (*Anniella pulchra*) is a CDFW SSC (CDFW, 2016b). Marginally suitable, isolated patches of habitat were present within the BSA, including undeveloped areas that contained sandy soils and sufficient leaf litter. The nearest documented occurrence was recorded approximately 1 mile southwest of the BSA; therefore, this species has a moderate potential to occur within the BSA.

Golden Eagle

The golden eagle is federally protected by the Bald and Golden Eagle Protection Act and is designated by the state as a fully-protected species (CDFW, 2016b). No suitable nesting or foraging habitat was present within the BSA; however, this species could fly over the project site while accessing foraging habitat in the surrounding area. The nearest documented occurrence was recorded approximately 9.5 miles south of the BSA; therefore, this species has a low potential to occur within the BSA.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a CDFW SSC (CDFW, 2016b). It is typically found in dry open areas with few trees and short grasses; it is also found in vacant lots near human habitation. The burrowing owl uses uninhabited mammal burrows for roosts and nests. It primarily feeds on large insects and small mammals, but it will also eat birds and amphibians. No occupied burrowing owl burrows were identified during the biological reconnaissance survey. The nearest documented occurrence was recorded approximately 1.7 miles northwest of the BSA; therefore, this species has a moderate potential to occur within the BSA. Due to the highly urbanized nature of the BSA and the absence of suitable habitat within the project impact area, focused surveys designed to assess whether the project would have a significant impact on the species are likely not necessary; however, preconstruction surveys would be conducted to minimize temporary direct impacts to any burrowing owl that could occur within the BSA.

Swainson’s Hawk

The Swainson’s hawk is a state-listed threatened species (CDFW, 2016b). No suitable foraging habitat was present within the BSA, but this species could fly over the project site while accessing foraging habitat in the surrounding areas. Marginally suitable nesting habitat was present within some of the larger ornamental trees within the BSA, but due to the urban nature of the site, nesting onsite is highly unlikely. Two documented occurrences were recorded within 10 miles of the BSA. This species has a low potential to occur within the BSA.

Loggerhead Shrike

The loggerhead shrike is a CDFW SSC (CDFW, 2016b). It prefers open areas with scattered trees and shrubs, including savanna, desert scrub, and open woodland habitats. Its diet includes large insects and other invertebrates, but it will also prey on small mammals, lizards, and snakes. Suitable nesting and foraging habitat is present
within the BSA. The nearest documented occurrence was recorded approximately 2.3 miles northwest of the BSA; therefore, this species has a high potential to occur within the BSA.

**Pallid Bat**

The pallid bat (*Antrozous pallidus*) is a CDFW SSC (CDFW, 2016b). This species is most common in open, dry habitats and is usually associated with water. It can be found occupying a variety of habitats, including grasslands, scrublands, woodlands, and forests. This species roosts in rock outcrops, caves, mines, hollow trees, and buildings (NatureServe, 2016). Marginally suitable foraging habitat was present within and adjacent to the BSA. Additionally, some of the buildings and trees onsite could provide roosting habitat. This species could also roost nearby and forage onsite or travel through the site while accessing adjacent areas. The nearest documented occurrence was recorded more than 10 miles south of the BSA. This species has a moderate potential to occur within the BSA.

**Townsend’s Big-Eared Bat**

The Townsend’s big-eared bat is a CDFW SSC. It can be found in many different habitats, including pine forests and desert scrub. This bat species roosts in caves, mines, open areas, and buildings, and it forages along the edges of woodland and riparian areas. Its diet consists primarily of flying insects, particularly moths. Marginally suitable foraging habitat was present within the BSA and adjacent to the BSA. Additionally, some of the buildings and trees onsite could provide roosting habitat. This species could also roost nearby and forage onsite or travel through the site while accessing adjacent areas. The nearest documented occurrence was recorded approximately 8.3 miles south of the BSA. This species has a moderate potential to occur within the BSA.

**Migratory Birds and Raptors**

Numerous species of migratory birds and raptors protected under the MBTA and CDFG code are expected to occur within the BSA. The habitat located within the BSA provides suitable nesting and foraging habitat for a wide variety of migratory bird species. Nesting birds are anticipated to occur onsite in conjunction with the nesting bird season (typically February 1 through August 31).

**Potential Impacts**

**No Build Alternative**

Because no ground disturbance or construction would occur under the No Build Alternative, there would be no impacts to plant species.

**Build Alternative**

Impacts to animal species could occur during project construction. These impacts are discussed in Section 2.4, Construction Impacts.
Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

No mitigation would be required under the No Build Alternative.

Build Alternative

Seven sensitive wildlife species, including silvery legless lizard, golden eagle, burrowing owl, Swainson’s hawk, loggerhead shrike, pallid bat, and Townsend’s big-eared bat, have been determined to have varying levels of potential for occurrence within the BSA. Although most of the species are not expected to occur within the project impact area due to lack of quality suitable habitat, implementation of minimization measures CI-BIO-1 to CI-BIO-8 listed in Section 2.4, Construction Impacts would prevent the direct take or disturbance of active bird nests and/or sensitive wildlife species within the BSA.
2.3.5 Threatened and Endangered Species

Regulatory Setting

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

California has enacted a similar law at the state level, the CESA, California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. CDFW is the agency responsible for implementing the CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by CDFW. For species listed under both the FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Affected Environment

The following information is presented in the NES-MI, (ECORP Consulting, August 2016).
ECORP biologists performed a search within the USFWS IPaC to determine which endangered species, migratory birds, wetlands, or Critical Habitats managed by USFWS have potential to occur in the vicinity of the BSA (USFWS, 2016). The report was generated February 18, 2016, and is included in Appendix D of the NES-MI. The search revealed three federally listed species that may occur within the BSA or could be affected by project activities, including California condor (*Gymnogyps californianus*), least Bell’s vireo (*Vireo bellii pusillus*), and desert tortoise (*Gopherus agassizii*).

**Potential Impacts**

**No Build Alternative**

Because no ground disturbance or construction would occur under the No Build Alternative, there would be no impacts to threatened and endangered species.

**Build Alternative**

The BSA was evaluated for California condor, least Bell’s vireo, and desert tortoise, and it was determined that no suitable habitat was present within the BSA; therefore, it can be concluded that the proposed project would have no effect on these species.

Furthermore, the search determined that there were no critical habitats in this location, and there are no refuges in this location. The search also identified a suite of migratory birds that could be affected by the project activities.

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

**No Build Alternative**

No mitigation would be required under the No Build Alternative.

**Build Alternative**

Although there is no suitable habitat present in the BSA, the avoidance and/or minimization measures listed in Section 2.3.4 would prevent the direct take or disturbance of active bird nests and/or sensitive species within the BSA.
2.3.6 Invasive Species

Regulatory Setting

On February 3, 1999, President William J. Clinton signed EO 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." FHWA guidance issued August 10, 1999, directs the use of the State’s invasive species list maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the NEPA analysis for a proposed project.

Affected Environment

The following information is presented in the NES-MI, (ECORP Consulting, August 2016).

Due to the location of the project site in an urbanized area and the anthropogenically modified environments within the BSA, there are numerous non-native, invasive species of plants and wildlife present. Three invasive plant species were especially prevalent within the BSA, including Russian thistle, filaree, and black mustard. All three of these species are considered exotic and invasive by the California Invasive Plant Council (Cal-IPC). Other invasive plant species identified within the BSA are listed in Appendix A of the NES-MI.

No substantial populations of invasive wildlife have been documented within BSA. House sparrows (Passer domesticus), rock pigeons (Columba livia), and European starlings (Sturnus vulgaris), as well as Virginia opossums (Didelphis virginiana) and feral dogs and cats, are known to occur and are common in urban areas throughout southern California.

Potential Impacts

No Build Alternative

There would be no change from existing conditions with the No Build Alternative.

Build Alternative

None of the species on the California list of invasive species is used by Caltrans for erosion control or landscaping. All equipment and materials would be inspected for the presence of invasive species.

Due to their prevalence within urban habitats, eradication of invasive wildlife species within the BSA would have no effect on local or regional populations.
Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

No mitigation would be required under the No Build Alternative.

Build Alternative

In compliance with EO 13112, and subsequent guidance from FHWA, the following minimization measures will be implemented:

**BIO-1:** Landscaping and erosion control included in the project will not include species listed on either the federal or the State of California Noxious Weed List.

**BIO-2:** In areas of particular sensitivity (i.e., near or adjacent to drainages), extra precautions will be taken if invasive species are found in or adjacent to these areas. This will include inspection and cleaning of construction equipment and eradication strategies, as needed, should an invasion occur.
2.4 Construction Impacts

This section discusses impacts on various environmental resources from construction of the Build Alternative of the proposed project.

Construction Sequence

To understand the temporary construction impacts associated with the proposed project, a typical construction sequence is provided.

Project construction would commence after all ROW has been acquired by the City. The construction sequence would begin with site clearing of all improvements, which would include demolition of buildings and structures, followed by utility relocation, facility construction, and landscaping/finishing work. Construction of the Build Alternative is estimated to take approximately 15 months.

A generic construction sequence for a project of this type and scale is described below for purposes of impact assessment. The actual construction process would be determined by the contractor.

Temporary laydown and staging areas would be required for field trailers, storage and equipment, and construction activities near the project site.

Step 1: Mobilization and Staging

The first step is preparing the site for construction. The project site would be surveyed, and various permits required for construction would be obtained. Mobilization and staging would occur after all required preconstruction surveys were conducted and the required permits were obtained.

Step 2: Site Clearing and Demolition

Following mobilization and staging, the site would be cleared of conflicting structures and vegetation to prepare for construction. Asphalt and concrete from roads, parking lots, and sidewalks would be removed and disposed.

Step 3: Utility Relocation

Utilities that would interfere with construction would be relocated or encased for continuing service by the utility provider. This work would involve coordinating with several utility companies, including those for electric and gas power, water and wastewater distribution, stormwater, and cable. Each utility would be restored or replaced near its former location in accordance with design plans.

Step 4: Road Improvements

Road construction would involve site excavation, grading, and pavement installation.
Excavation and Grading

Construction of the Build Alternative would require excavation and grading. Approximately 15,000 cubic yards of excess earthwork would be excavated and disposed of offsite. An estimated 638 truck trips would be required to remove these excess materials. The offsite disposal site is assumed to be a maximum of 18 miles from the construction area for an estimated 36-mile round-trip per truckload; therefore, disposal of excess fill would require approximately 23,000 truck miles of travel.

Traffic Management

A Traffic Management Plan (TMP) would be developed to reduce the impacts of traffic congestion and detours during construction. Except for short-term closures, the secondary streets crossing the construction corridor would remain open during construction. The project would be designed so that existing passenger and freight railway operations would not be interrupted during construction. Some construction work would be done at night to minimize traffic disruption, especially when temporary lane or road closures are required.

Potential Impacts

No Build Alternative

There would be no construction with the No Build Alternative; therefore, no construction impacts would occur.

Build Alternative

Construction of the Build Alternative would not affect land use or growth.

Community Impacts

During construction of the Build Alternative, delays would be experienced by local residents, particularly those living in neighborhoods next to the project site. At times, local traffic detours would be required, requiring residents and business patrons to use slightly longer alternate routes to avoid construction zones on the way to their preferred destinations. Detours and delays could also adversely affect delivery of emergency services (e.g., fire, police, or ambulance). Access to residential and business properties near the Build Alternative alignment would be maintained throughout construction. Appropriate signage would be required to alert drivers about detours and that businesses are open.

Construction impacts would include temporary increases in noise and dust, visual changes, and traffic congestion related to temporary road closures or detours. These impacts would be temporary and would not disproportionately affect a low-income or minority population because everyone in the project area would experience these impacts.
The Build Alternative would require temporary acquisition of property for construction activities such as equipment storage and access of approximately 0.66 acre. Because this property acquisition under the proposed Build Alternative would be temporary, no impacts would result. With implementation of the measures CI-COM-1 and CI-COM-2 identified under Avoidance, Minimization, and Mitigation Measures below, adverse impacts would be minimized.

Construction of the Build Alternative would require the partial, temporary acquisition of 0.34 acre of land from Dr. Robert D. St. Clair Parkway for construction activities such as staging and equipment storage. Construction activities could cause temporary visual, air quality, and noise impacts on Dr. Robert C. St. Clair Parkway. All other parks and recreational facilities are sufficiently distant from the construction footprint that no impacts from construction activities would result. Measures would be implemented to avoid or minimize visual, air quality, and noise impacts on Dr. Robert C. St. Clair Parkway. These measures are discussed in Sections 2.2.6 and 2.2.7. Access to the parkway would be maintained during construction as outlined in Avoidance, Minimization, and Mitigation Measures (CI-PAR-1) below.

**Utilities**

Utility facilities and lines would be removed and relocated during construction of the Build Alternative. Of these utilities, a 16-inch Palmdale Water District line would be the most substantial individual utility relocated. Additionally, a 4-inch Southern California Gas line and an underground Southern California Edison electrical line would require relocation. Existing fire hydrants, electrical, gas, and water meters, pedestals, and vaults would also be relocated as necessary. Existing manholes would be relocated or adjusted to grade. This work would adhere to standard engineering practices to minimize disruptions of the services those utilities provide. Caltrans has agreements covering utility relocations with all affected utilities except Palmdale Water and Sewer and Time Warner Cable.

To reduce the need for potable water during construction, the City would require the contractor to use soil binders or a dust palliative to control dust. Dust control binders and dust palliative materials would be directly applied to the surface without mixing with water, minimizing the use of potable water during construction. Potable water resources would be protected by using reclaimed water for dust suppression and, if necessary, landscape irrigation.

Implementation of the standard measure (SC-UT-1) outlined in Section 2.1.4, Utilities/Emergency Services, and measures CI-UT-1 and CI-UT-2, listed in this section, would minimize adverse impacts.

**Emergency Services**

While emergency vehicle access for emergency services would be maintained at all times during construction, occasional travel delays would occur due to traffic detours, off-peak lane closures, shoulder closures, and lane shifts. These delays could slightly increase response times for police, fire, and other emergency service providers in the short term. In addition to increased congestion from construction vehicles,
construction activities would require detours and some road closures that would adversely affect emergency response times. Streets that cross the project alignment may be partially or fully closed for specific construction activities. To the extent feasible, half the road would be open to traffic in most cases or closed for very short durations. These intermittent traffic disruptions would be temporary and should not substantially affect emergency response times with implementation of the TMP. Implementation of the measures CI-ES-1 and CI-ES-2 identified under Avoidance, Minimization, and Mitigation Measures, listed in this section, would minimize adverse impacts.

Traffic and Transportation/Pedestrian and Bicycle Facilities

Construction of the Build Alternative would intermittently affect automobile, bicycle, and pedestrian traffic. The duration of travel-time delays could be expected to last from a few hours to a few days and could require motorists to adjust their schedules to accommodate longer travel times. Based on the temporary nature of the road closures, implementation of a TMP and a public outreach program would minimize increases in travel time or distance.

Construction within the public ROW could also temporarily cause transit service delays due to traffic detours and work zone operations. Some bus routes could be affected, and coordination would be necessary to arrange temporary nearby route and stop relocations.

Temporary easements would be required along the Build Alternative alignment to accommodate construction activities. Access routes to businesses would not be blocked, and obstructions would be minimized to the extent possible. Areas required for temporary easements would be restored during construction to pre-project conditions. On-street parking could be restricted in or adjacent to work areas during construction to accommodate construction equipment and materials.

Short-term bicycle and pedestrian detours could be required during construction. Implementing a TMP and a public outreach program throughout the construction period would minimize impacts on pedestrians and bicyclists.

With implementation of the measures CI-T-1, CI-T-2, and CI-T-3 identified under Avoidance, Minimization, and Mitigation Measures below, construction impacts of the Build Alternative would be minimized and would not be considered adverse.

Visual/Aesthetics

Temporary or short-term impacts are of relatively short duration (e.g., the visual presence of construction equipment or the time for establishment of new plants). The presence of construction equipment and vegetation removal would likely have the greatest impact on visual quality during construction; however, this would be temporary in most areas because as replacement vegetation grows over the years, the overall impact would be expected to diminish. In the key viewpoint view, only shrubs would be removed, which would not require more than a year to establish. However,
for the overall project area, it is anticipated that it would take 15 to 25 years for any replacement trees to reach maturity, depending on the species selected.

No walls that could harbor graffiti are proposed as part of the project; however, as with any project within an urban setting, graffiti could be an issue during construction of the Build Alternative because all construction, staging, and equipment storage areas would be fenced, providing a surface for graffiti. Any temporary graffiti impacts would be removed at the end of construction.

With implementation of the measures V-1 to V-10 identified under Avoidance, Minimization, and Mitigation Measures – Visual/Aesthetics Impacts in Section 2.1.6, no additional measures would be required.

**Cultural Resources**

No prehistoric or historic archaeological resources have been previously recorded or were observed within the APE during the pedestrian survey. Considering the results of the literature search and geomorphology analysis, as well as disturbances of the APE from construction of existing roadways, underground utilities, and commercial development and landscaping, the potential for discovery of archaeological deposits in the very low probability zone is considered low.

Prior disturbances of the project footprint at similar depths as the proposed ground disturbances for the project have occurred during construction of the existing roadways, railroad, sidewalks, underground utilities, commercial development, and landscaping, so implementation of this project would have a low potential to affect cultural resources.

As part of the Native American Consultation process, the Fernandeño Tataviam Band of Mission Indians responded to the City’s request for consultation under AB 52 (see details in Section 2.1.7). The Tribe requested that Native American monitoring be conducted for all ground-disturbing activities associated with this project and requested that they be involved with any artistic opportunities that might arise with the project, such as freeway wall design (see Appendix D of the ASR). While Caltrans PQS archaeological staff determined that the conditions for monitoring had not been met because no archaeological sites were identified in the APE, as well as possessing a low potential for encountering buried resources because of the nature of the proposed work and the area’s geomorphology and its highly disturbed nature, the City agreed to incorporate the measures requested by the Fernandeño Tataviam Band of Mission Indians in the environmental document as part of its consultation efforts under AB 52.

With implementation of minimization measures CI-CUL-1, CI-CUL-2, and CI-CUL-3 identified under Avoidance, Minimization, and Mitigation Measures below, construction impacts of the Build Alternative would be minimized and would not be considered adverse.
Hydrology and Floodplain

Construction of the Build Alternative would not adversely affect hydrology or floodplains. The Build Alternative would adhere to all federal, State, and local agencies policies for floodplain management. Compliance with existing regulations would apply to project design and construction. Compliance would minimize construction impacts on floodplains.

Special construction procedures are not required, and no special mitigation measures for restoration or preservation of natural or beneficial floodplain values would be required. Construction near the unnamed earthen channel would require installation of Temporary Construction Site BMPs to minimize the pollutants in stormwater and non-stormwater discharges throughout construction. Construction Site BMPs would provide temporary erosion and sediment control, as well as control for potential pollutants other than sediment. Construction staging areas would be located at least 50 feet away from the earthen channel to prevent runoff from entering the channel. If necessary, temporary drainage facilities would be implemented to manage onsite flows and stormwater runoff.

Water Quality and Stormwater Runoff

The greatest potential for water quality impacts from the Build Alternative would be during construction. Preliminary engineering estimates indicate that the total DSA anticipated for the Build Alternative is 4.55 acres. Construction of the Build Alternative may require use of temporary drainage conveyance systems to decrease the potential for erosion. Proposed construction activities would involve stockpiling, grading, excavating, paving, and other earth-disturbing activities that would temporarily alter existing drainage patterns. The project-specific SWPPP would minimize stormwater and erosion impacts during construction by implementing Construction Site BMPs, such as temporary silt fencing, temporary fiber rolls, soil binders, street sweeping, and temporary cover. Compliance with the CGP pursuant to NPDES requirements would minimize the potential for construction activities to alter natural drainages via deposition of sediments; therefore, compliance with the CGP would reduce the risk of short-term erosion resulting from drainage alterations during construction.

Erosion and siltation in the Build Alternative area would increase during construction due to activities such as clearing, grubbing, and excavation. Detailed construction plans for the proposed roadway improvements have not been completed; therefore, the exact amounts of increased erosion and siltation cannot be estimated. Permanent erosion and sedimentation control BMPs could include, but would not be limited to, hydroseeding of steeper cut slopes, permanent fiber rolls, erosion control blankets, rip-rap, and improvement of drainage facilities to handle excess runoff.

Several engineering features of the Build Alternative could degrade water quality. Examples of these features include removing curb and gutter, paving and striping of existing and new roadbed, lengthening a box culvert, and relocating utilities. Because the Build Alternative would disturb more than 1 acre of soil during construction, the
Build Alternative would need to comply with the CGP, which would require preparing and implementing an SWPPP that identifies Construction Site BMPs. These BMPs would be implemented to avoid adverse water quality impacts during construction. The Build Alternative would comply with the requirements of any other related permits from the RWQCB and provisions of the CGP.

The amount of sediment entering the Lancaster hydrologic area would be minimal with implementation of an SWPPP. The SWPPP would identify a combination of soil stabilization, sediment control, tracking control, wind erosion control, waste management, and material pollution control BMPs for implementation. Examples of Construction Site BMPs include temporary silt fencing, temporary fiber rolls, soil binders, street sweeping, and stabilized exits. A final Construction Site BMP strategy would be determined at a subsequent project phase. Preparing and implementing an SWPPP would assure that no water quality standards or WDRs were violated; therefore, construction of the Build Alternative is not expected to substantially degrade water quality within the Lancaster hydrologic area.

Although preliminary engineering indicates that dewatering would not be required, the construction and proposed culvert lengthening may require dewatering. Dewatering could also be required after a storm event if runoff becomes pooled in depressions on the construction site or if groundwater is encountered during excavation. Groundwater dewatering discharge could adversely affect surface water quality if effluent that is rich in sediment or contaminated with chemicals is not managed properly. Extracted groundwater may contain pollutants from decomposition of organic materials (e.g., hydrogen sulfide), surface spills, sewage, past land uses, or fertilizers (e.g., phosphorous and nitrogen compounds). Results from soil boring samples would determine if dewatering is required for areas within the Build Alternative footprint.

Discharges of groundwater to surface waters from construction and project dewatering must comply with WDRs issued by the Lahontan RWQCB for limited threat discharges to surface waters (Order No. R6T-2014-0049, NPDES No. CAG996001). Discharges covered by this permit include, but are not limited to, diverted stream flows, construction dewatering, and dredge spoils dewatering. Because dewatering operations necessary to implement the Build Alternative would comply with Order No. R6T-2014-0049 (NPDES No. CAG996001), no impacts on surface water quality from dewatering activities are expected. Furthermore, because the Build Alternative would not use groundwater, and no runoff would be infiltrated into groundwater basins, no impacts on groundwater quality are expected.

Compliance with the CGP (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ), would minimize construction water quality impacts. Compliance would include developing and applying construction site BMPs to be included in the SWPPP to minimize pollutants in stormwater and non-stormwater discharges during project construction. Given these considerations, and with implementation of the standard measures outlined in Section 2.2.2, Water Quality and Stormwater Runoff, water quality and stormwater runoff construction impacts would not be adverse.
Geology/Soils/Seismic/Topography
No adverse impacts on geology, soils, seismic, or topography are anticipated during construction.

Hazardous Waste or Materials
Demolition and construction activities under the Build Alternative would pose a limited risk of accidentally releasing hazardous materials such as gasoline, oil, or other fluids from operating and maintaining construction equipment. During construction, asbestos, LBP, or ADL may be encountered. The existing wooden utility posts have been treated with chemical preservatives. The wood posts when removed will generate treated wood waste that must be managed and disposed in a hazardous waste landfill or lined landfill permitted in California to accept treated wood waste. During construction, pesticides, treated wood waste, and contaminants from the UPRR and Metrolink tracks may be encountered, in addition to other contaminants already mentioned. With implementation of minimization measures CI-HAZ-1, CI-HAZ-2, and CI-HAZ-3 identified under Avoidance, Minimization, and Mitigation Measures below, construction impacts of the Build Alternative related to hazardous materials and wastes would be minimized and would not be considered adverse.

Air Quality
Criteria Pollutants
The Build Alternative could impact air quality through the use of heavy-duty equipment on the construction site and through vehicle trips by haul trucks and construction workers traveling to and from the project site. In addition, fugitive dust would be generated by ground-disturbing activities such as grading or excavation. Off-road (onsite) mobile source emissions, primarily NO\textsubscript{X} and CO, would be emitted by construction equipment such as excavators, bulldozers, and loaders. During the finishing phase, paving operations and application of architectural coatings would release reactive organic compounds and off-gassing products (e.g., paints and asphalt). Construction emissions could vary substantially from day to day, depending on the level of activity, the specific mix of construction equipment and, for dust, the prevailing weather conditions.

Construction emissions of criteria pollutants were estimated using the Road Construction Emissions Model, Version 7.1.5.1 developed for Sacramento Metropolitan Air Quality Management District and approved by ARB. Construction emissions estimated with this model are summarized in Table 2.4-1. Construction emissions would not exceed AVAQMD thresholds. In accordance with AVAQMD guidance (AVAQMD, 2011), compliance with these thresholds is sufficient to demonstrate that construction of the Build Alternative would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.
Table 2.4-1: Summary of Construction Emissions for Roadways

<table>
<thead>
<tr>
<th>Construction Phase</th>
<th>Air Pollutant Emissions by Construction Activity (lb/day)</th>
<th>CO</th>
<th>NOₓ</th>
<th>VOC</th>
<th>PM₁₀</th>
<th>PM₂.₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grubbing and Clearing</td>
<td></td>
<td>25</td>
<td>28</td>
<td>3</td>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>Grading and Excavation</td>
<td></td>
<td>50</td>
<td>61</td>
<td>6</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>Drainage, Utilities, and Subgrade</td>
<td></td>
<td>33</td>
<td>43</td>
<td>4</td>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>Paving</td>
<td></td>
<td>25</td>
<td>34</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Maximum</td>
<td></td>
<td>50</td>
<td>61</td>
<td>6</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>AVAQMD Threshold</td>
<td></td>
<td>548</td>
<td>137</td>
<td>137</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Exceed Threshold?</td>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Total Emissions (tons)

<table>
<thead>
<tr>
<th></th>
<th>Total Construction Emissions</th>
<th>CO</th>
<th>NOₓ</th>
<th>VOC</th>
<th>PM₁₀</th>
<th>PM₂.₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVAQMD Annual Threshold</td>
<td>100</td>
<td>25</td>
<td>25</td>
<td>15</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Exceed Threshold?</td>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>


Construction activities associated with the Build Alternative would be completed within 15 months; therefore, construction emissions are not considered for conformity purposes. The locations of construction equipment would vary substantially throughout the construction period. Because these emissions would be intermittent and would be spread over the entire 18.6-acre project site, pollutant concentrations would remain below levels that would cause or contribute to NAAQS or CAAQS violations. Based on the magnitude of daily emissions and the variability in the locations of powered construction equipment, sensitive receptors would not be exposed to substantial pollutant concentrations during construction of the Build Alternative.

Compliance with Caltrans’ Standard Specifications in Section 14 (2015) would be required. Section 14-9.01 specifically requires compliance with all applicable laws and regulations related to air quality, including AVAQMD rules and regulations and local ordinances. Given this compliance, no additional mitigation would be required.

Air Toxics

The amount of air toxics emitted during construction would be related to the amount of DPM emitted by heavy equipment. The effects of air toxics from project construction on the health of sensitive receptors would be negligible, however, because:
DPM would be emitted intermittently over the course of the construction day, and the sources of DPM would be spread out over the construction site, so air toxics concentrations would be substantially diluted before reaching offsite receptors; Ventilation at the project site is generally good, substantially diluting concentrations of project-related air toxics between their sources and the nearest receptors; and Indoor concentrations of project-generated air toxics, where most sensitive receptors would spend most of their day, would generally be lower during the day than outdoor concentrations, the degree depending on the ventilation rate of the building.

Potential impacts on sensitive receptors of air toxics emitted during construction would not be substantial, and no mitigation measures are required.

Please note that the health risk values assigned to air toxics are generally based on a 70-year lifetime exposure, while exposures from project construction would last 15 months.

**Naturally Occurring Asbestos**

According to the California Division of Mines and Geology (2011), the area in Los Angeles County where the project site is located is not listed as containing naturally occurring asbestos; therefore, the potential for construction to disturb naturally occurring asbestos is low, and mitigation measures are not required.

**Odors**

Construction of the Build Alternative would use a variety of gasoline and diesel-powered equipment that would emit exhaust fumes. These fumes would be emitted intermittently during the work day, and the associated odors would dissipate rapidly near the work area. Paving operations also would generate fumes from fresh asphalt, which has a distinctive odor during application. Individuals near work areas may be exposed to substantial levels of odor and may find these odors objectionable. The infrequency of the emissions, the rapid dissipation of the fumes in the air, and the short-term nature of the construction activities would result in less than significant impacts from construction odors.

AVAQMD Rule 401 and 402 (Visible Emissions and Nuisance, respectively) limit the amount of reactive organic gas (ROG) emissions from paving, asphalt, concrete curing, and cement coating operations. The Build Alternative would be constructed in compliance with AVAQMD’s rules. No mitigation measures would be required.

**Valley Fever**

The Centers for Disease Control and Prevention (CDC) indicates that *Coccidioides immitis* is a fungus found in the soil of dry, low rainfall areas and is native and common in many areas of the southwestern United States, Mexico, and Central and South America (see Figure 2.4-1). As shown, the project site is in an endemic area for *Coccidioides*. Coccidioidomycosis, also known as Valley Fever, is a common cause...
of pneumonia in the areas where \textit{Coccidioides} occurs. \textit{Coccidioides} spores circulate in the air after contaminated soil and dust are disturbed by human or natural activities such as winds, construction, farming, animal burrows, or burial. The spores are typically inhaled, although in rare cases spores can enter the skin through cuts or abrasions and cause infection. After the fungal spores settle in the lungs, they change into a multicellular structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

\textbf{Figure 2.4-1: Endemic Regions of \textit{Coccidioides immitis} in the United States and Northern Mexico}

![Map showing endemic regions of \textit{Coccidioides immitis} in the United States and Northern Mexico.](image)


At least 30 to 60 percent of people who live in endemic areas, such as the High Desert, where the fungus is present are exposed to the fungus at some point during their lives. In most people, the infection will go away on its own, but for a small segment of the population, including people of Asian descent (particularly those of Filipino descent), African-Americans, pregnant women, and people with weakened immune systems, the risk of disease is increased. It is difficult to avoid exposure to \textit{Coccidioides}, but people who are at higher risk should try to avoid breathing in large amounts of dust if they are in endemic areas.

Most people who are exposed to the fungus do not develop symptoms or have mild flu-like symptoms that go away on their own. In severe cases, patients develop pneumonia or meningitis, which can sometimes lead to death. Meningitis, the most lethal complication of disseminated Valley Fever, may cause a stiff neck, severe and persistent headache, nausea, vomiting, and various other central nervous system symptoms such as disorientation, loss of balance or equilibrium, inability to think clearly, and loss of consciousness. In addition to humans, Valley Fever affects many species of domestic and wild animals. Because the spores of \textit{Coccidioides immitis} can become airborne during soil disturbance, dust suppression is an important aspect of managing its spread.
Valley fever is not contagious; therefore, it cannot be passed on from person to person. Most of those who are infected will recover without treatment within 6 months and will have a life-long immunity to the fungal spores. In severe cases, such as patients with rapid and extensive primary illnesses, those who are at risk for dissemination of disease, and those who have disseminated disease, anti-fungal drug therapy is used. Only 1 to 2 percent of those exposed who seek medical attention will develop a disease that disseminates to other parts of the body than the lungs.

There are measures that can be implemented to lower the incidence of infection and reduce the number of spores inhaled, thereby decreasing the chances of developing a more serious form of the disease. These measures include dust control and prevention; use of dust masks with appropriate filters; use of construction equipment with enclosed, air-conditioned cabs; and positioning construction workers upwind when possible. Furthermore, infection risk can be lowered by conducting outdoor activities, such as field studies or construction activities, in the winter; avoiding sites favorable for Coccidioides immitis growth; seeking prompt medical treatment if flu-like or respiratory illness occurs during or within a few weeks following fieldwork or construction activities; getting a coccidioidin skin test to determine susceptibility to the disease; and educating all members of the field party and construction crew about the possibilities and consequences of infection.

Construction of the Build Alternative would occur in an endemic area where Coccidioides immitis naturally occurs. Temporary soil disturbance during construction activities could cause fungal spores (if present) to become airborne, potentially putting construction personnel, residents, and wildlife at risk of contracting Valley Fever. However, most Valley Fever cases are very mild, and more than half of infected people either have no symptoms or experience flu-like symptoms and never seek medical attention. Dust control measures are the main defense against infection, although all persons residing or traveling within the city area would be susceptible to the disease, regardless of whether the project is implemented.

No adverse air quality impacts related to Valley Fever are anticipated because the project would be constructed in accordance with Caltrans Standard Specifications and pertinent rules and regulations set forth by the AVAQMD.

Noise

During construction of the Build Alternative, noise from construction activities could intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans Standard Specifications, Section 7-1.01I, Sound Control Requirements. These requirements state that noise levels generated during construction shall comply with applicable local, State, and federal regulations.

Typical noise levels produced by construction equipment commonly used on roadway construction projects are summarized in Figure 2.4-2. As indicated, equipment involved in construction is expected to generate noise levels ranging from 80 to 89 dB, A-weighted (dBA) at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of approximately 6 dBA per
doubling of distance. Sound control shall conform to the provisions in Section 14-8.02, “Noise Control,” of the Standard Specifications and Section 14-8.02, “Noise Control,” of the Standard Special Provisions. According to requirements of these specifications, construction noise cannot exceed 86 dBA at 50 feet from the jobsite activities from 9:00 p.m. to 6:00 a.m.

**Figure 2.4-2: Construction Equipment Noise Levels**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>A-Weighted Sound Level (dBA) at 50 Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compactor (Rollers)</td>
<td></td>
</tr>
<tr>
<td>Front Loader</td>
<td></td>
</tr>
<tr>
<td>Backhoe</td>
<td></td>
</tr>
<tr>
<td>Tractor</td>
<td></td>
</tr>
<tr>
<td>Scraper, Grader</td>
<td></td>
</tr>
<tr>
<td>Paver</td>
<td></td>
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<td>Truck</td>
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<td>Concrete Mixer</td>
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<td>Concrete Pump</td>
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<td>Crane (Movable)</td>
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<td>Crane (Derrick)</td>
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<td>Pump</td>
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<td>Generator</td>
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<td>Compressor</td>
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<td>Pneumatic Wrench</td>
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<td>Jackhammer and Drill</td>
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<td>Pile Drivers (Peak Levels)</td>
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<tr>
<td>Vibrator</td>
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<tr>
<td>Saw</td>
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</tbody>
</table>

Source: “Handbook of Noise Control,” by Cyril Harris, 1979

Compliance with standard measures CI-NOI-1 to CI-NOI-4, listed under Avoidance, Minimization, and Mitigation Measures, below would control noise during project construction.

**Biological Resources**

Areas immediately adjacent to SR-138 (Palmdale Boulevard) and Sierra Highway (and within a 500-foot wide buffer on either side of it) would be temporarily affected by construction activities, including vehicle and equipment staging areas, and other construction-related activities. Temporary impacts associated with construction include increased noise, increased human activity, increased dust, ground disturbance
(vibrations), and light disturbance. These temporary impacts during construction could cause habitats within and adjacent to construction zones to be temporarily unattractive to wildlife species.

Removal of ornamental trees and bushes associated with construction would result in permanent loss of nesting and foraging habitat for some sensitive bird species in the area, including loggerhead shrike (*Lanius ludovicianus*). However, nesting bird surveys would be conducted to allow detection and protection of nests in or near the project site, and foraging would still be available to sensitive species outside of the project area. Therefore, direct impacts to sensitive bird species are not anticipated.

Construction within disturbed yet previously undeveloped areas of the project site could result in the direct loss of small mammals, reptiles, and other less mobile species. These impacts would result primarily from the use of construction vehicles and grading of the site. Small burrowing animals (lizards, snakes, and small mammals) may be harmed through the crushing of burrows, loss of refugia, and direct mortality from construction activities. Although one sensitive reptile (silvery legless lizard) and one sensitive ground-dwelling bird (burrowing owl) were determined to have potential to occur within the BSA, direct impacts to these sensitive species are not likely due to the lack of quality suitable habitat within the project impact area.

Construction and operation activities may also result in an increase in accidental death of wildlife species on the roads due to increased vehicle traffic from worker traffic. Diurnally active reptiles and mammals are the most likely to be subject to mortality from worker vehicles. If construction occurs at night, then large and small mammals that are typically active at night would also be subject to mortality from construction traffic.

With implementation of mitigation and minimization measures CI-BIO-1 to CI-BIO-8 listed under Avoidance, Minimization, and Mitigation Measures, below, impacts to biological resources during construction would be minimizes.

**Avoidance, Minimization, and Mitigation Measures**

**Community Impacts**

**CI-COM-1:** To the extent practical, street closures required during construction will be scheduled to occur at night. This requirement will be addressed in the TMP to be prepared during the final design phase of project development. Implementation of the TMP will avoid or minimize impacts on communities along the construction zones.

**CI-COM-2:** To the extent practical, the Contractor will avoid limiting access to businesses during construction during normal business hours. Businesses will be contacted and advised of nearby construction activities before their commencement.
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CI-PAR-1: Access to Robert St. Clair Parkway shall be maintained at all times during construction.

Utilities/Emergency Services

CI-UT-1: In accordance with requirements in the CCR, prior to initiation of construction, the Contractor will coordinate and notify the operators of underground or overhead utility and service lines prior to any excavation activities. Surveyors will meet onsite with utility company workers to locate, mark, and identify conflicting utility lines to avoid damage and limit disruption to utility services.

CI-UT-2: During severe drought periods, the Contractor will be required to use soil binders or a dust palliative to control dust to minimize the use of potable water during construction. Severe drought conditions will exist whenever the State of California declares a drought emergency.

Emergency Services

Implementation of the TMP will avoid or minimize adverse effects of the project on emergency services.

CI-ES -1: Emergency service providers, such as fire, police, and ambulance services, will be notified in advance of construction of the timing, location, and duration of construction activities and the locations of detours and lane closures.

CI-ES -2: During the final design phase, in coordination with affected facility owners or operators, the City will develop and implement access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools.

Traffic and Transportation/Pedestrian and Bicycle Facilities

CI-T-1: Develop a TMP to offset the effects of access restrictions and traffic congestion during construction. The TMP will consider methods, such as adjustment of signal timing or signal coordination to increase roadway efficiency; turn restrictions at intersections and roadways necessary to reduce congestion and improve safety; and parking restrictions on detour routes during work hours, to increase capacity, reduce traffic conflicts, and improve access. The TMP will include a traffic contingency plan with procedures to be implemented for possible unforeseen circumstances and emergencies.

CI-T-2: The Contractor will be required to provide motorist alert and awareness information during construction, as appropriate for the conditions, to include the following options: changeable message
signs, stationary ground-mounted signs, traffic radio announcements, and the Caltrans Highway Information Network.

**CI-T-3:** The AVTA will be coordinated to request and comply with applicable procedures for any required temporary bus stop relocations or other disruptions to transit service during construction.

### Cultural Resources

**CI-CUL-1:** In accordance with Caltrans Standard Specifications, if cultural materials are discovered during construction, all earth-moving activities 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, Section 7050.5 of the State Health and Safety Code states that further disturbances and activities will stop in any area or nearby area suspected to overlie remains, and the county coroner will be contacted. Pursuant to Section 5097.98 of the PRC, if the remains are thought to be Native American, the coroner will notify the Resident Engineer and the NAHC, who will then notify the MLD. At this time, the Resident Engineer will contact the District 7 Environmental Branch so that staff may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of Section 5097.98 of the PRC are to be followed as applicable.

**CI-CUL-2:** It is Caltrans’ policy to avoid cultural resources whenever possible. Further investigation may be needed if resources cannot be avoided by the project. 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.

**CI-CUL-3:** Per the request of the Fernandeño Tataviam Band of Mission Indians, the City will implement the following mitigation measures to minimize any potential impacts to cultural resources during project construction:
- All ground-disturbing activities performed on the project property shall be monitored by professional Native American monitors.
- The applicant shall retain one professional Native American monitor per excavation team to monitor all ground-disturbing activities performed on the project property.
- The Fernandeño Tataviam Band of Mission Indians will be provided the opportunity to review any artistic design, such as freeway wall designs, associated with the project.
**Water Quality and Stormwater Runoff**

**CI-WQ-1:** During construction, implement waste management BMPs, which would consist of procedural and structural BMPs for handling, storing, and disposing of wastes generated by a construction project.

**CI-WQ-2:** During construction, consider using soil stabilization BMPs, which consist of preparing the soil surface and applying soil stabilizing media, such as soil binders and geotextile mats.

**CI-WQ-3:** During construction, implement non-stormwater BMPs, such as vehicle and equipment maintenance, to limit the potential for pollutants to impact surface waters.

**CI-WQ-4:** Prepare a SWPPP prior to commencement of any soil-disturbing activities. The SWPPP shall address all State and federal stormwater control requirements and regulations. The SWPPP shall address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP shall include BMPs to control pollutants, sediment from erosion, stormwater runoff, and other construction-related impacts.

**CI-WQ-5:** All work will conform to NPDES requirements as described in *NPDES Permit for General Construction Activities* (Order No. 2009-0009-DWQ, NPDES No. CAS000002). These include, but are not limited to, temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-stormwater BMPs.

**CI-WQ-6:** If dewatering is required for the project, the requirements specified in the Lahontan RWQCB’s dewatering permit Order R6T-2014-0049 shall be conformed to.

**Hazardous Waste or Materials**

**CI-HAZ-1:** A Health and Safety Plan for the protection of construction workers will be prepared and implemented during construction. Asbestos survey results, lead-based paint and soil test results will be the basis for developing health and safety plans for the protection of construction workers. Other avoidance and minimization measures that will be considered include excavation of impacted soils.

**CI-HAZ-2:** The Construction Contingency Plan prepared during the final design phase will be implemented during all construction phases.

**CI-HAZ-3:** If there is an unexpected release of hazardous substances that exceeds reportable quantities during the construction phase, work will cease immediately at the general location of the release, and the release will
be reported to the National Response Center at 1-800-424-8802. The Contractor will be responsible for cleanup of all unexpected releases under the appropriate federal, State, or local agency oversight and in accordance with federal, State, and local regulations.

**Air Quality**

The following minimization measures will be implemented as applicable.

**CI-AQ-1:** Compliance with Caltrans’ Standard Specifications in Section 14 (2015) will be required.

- Section 14-9.01 specifically requires compliance with all applicable laws and regulations related to air quality, including AVAQMD rules and regulations and local ordinances.
- Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.

**CI-AQ-2:** Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a “no visible dust” criterion either at the point of emission or at the right of way line as required by the AVAQMD.

**CI-AQ-3:** Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas.

**CI-AQ-4:** Wash off all trucks as they leave the right of way as necessary to control fugitive dust emissions.

**CI-AQ-5:** Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.

**CI-AQ-6:** Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited re-vegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

**CI-AQ-7:** Locate equipment and materials storage sites at least 500 feet from the sensitive receptors. Keep construction areas clean and orderly.

**CI-AQ-8:** Establish environmentally sensitive areas or their equivalent at least 500 feet away from sensitive air receptors within which construction activities such as extended idling, material storage, and equipment maintenance, would be prohibited, to the extent feasible.
CI-AQ-9: Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.

CI-AQ-10: Cover all transported loads of soil and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.

CI-AQ-11: Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.

CI-AQ-12: Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

CI-AQ-13: Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulates 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.

CI-AQ-14: While unlikely, if naturally occurring asbestos, serpentine, or ultramafic rock is discovered during grading operations Section 93105, Title 17 of the California Code of Regulations requires notification to the AVAQMD by the next business day and implementation of the following measures within 24 hours:

- Unpaved areas subject to vehicle traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 percent asbestos.

- The speed of any vehicles and equipment traveling across unpaved areas must be no more than fifteen (15) miles per hour unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust that is visible crossing the project boundaries.

- Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 percent asbestos.
• Activities must be conducted so that no track-out from any road construction project is visible on any paved roadway open to the public.

Noise

CI-NOI-1: Equipment noise control shall be applied to revising old equipment and designing new equipment to meet specified noise levels.

CI-NOI-2: In-use noise control shall be used where existing equipment is not permitted to produce noise levels in excess of specified limits.

CI-NOI-3: Site restrictions shall be used in an attempt to achieve noise reduction through modifying the time, place, or method of operation of a particular source.

CI-NOI-4: Personal training of operators and supervisors is needed to become more aware of the construction site noise problems.

Biology

CI-BIO-1: Prior to commencement of the construction activities, the project boundary will be staked to ensure construction activities only occur within the proposed construction footprint. Any sensitive areas outside the construction zone within the project limits will be designated as Environmental Sensitive Areas (ESAs) to be avoided to minimize potential impacts to nearby habitat. These areas will be fenced off by the use of obvious exclusion fencing throughout the duration of the project.

CI-BIO-2: Vegetation will only be removed after preconstruction biological survey has been completed or when sensitive birds and other species are not breeding within the project’s area of impact.

CI-BIO-3: Two preconstruction surveys shall be conducted prior to the start of initial ground-disturbing construction activities. The first survey should be conducted between 30 and 14 days prior to initial ground-disturbing construction activities, and the second survey should be conducted within 24 hours prior to initial ground-disturbing construction activities. The preconstruction survey should include an analysis of the project impact areas and surrounding BSA. The survey will be designed for identifying and biological constraints to the project, including nesting birds, burrowing owls, sensitive reptiles, and sensitive mammals. If a nesting bird, burrowing owl, occupied burrowing owl burrow, or other sensitive biological resource is identified during the preconstruction survey, then appropriate avoidance and minimization measures will be determined as approved
by the City, CDFW, and/or USFWS to assure compliance with state and federal regulations.

**CI-BIO-4:** If an active nest or occupied burrowing owl burrow is found in the BSA, an appropriate buffer zone will be established around the nest/burrow and maintained by a qualified biologist until the nest/burrow is no longer active. The most appropriate buffer distance will be established through coordination with USFWS, CDFW, and the City. If it has been determined that a sensitive bird is nesting within 300 feet of the project area during active construction, a biological monitor will be present to monitor the nesting activities to ensure that construction noise and dust is not adversely affecting them.

**CI-BIO-5:** Throughout construction of the road expansion, BMPs shall be used to reduce noise pollution related to construction.

**CI-BIO-6:** All project personnel must be educated regarding wildlife species issues for the project area prior to onset of construction activities. Construction personnel are to be no closer than 300 feet of an observed migratory songbird nest or 500 feet of a raptor nest unless authorized to enter by the project biologist.

**CI-BIO-7:** Areas immediately adjacent to SR-138 (Palmdale Boulevard) and Sierra Highway (and within a 300-foot buffer on either side of it) will be temporarily affected by construction activities, including vehicle and equipment staging areas, and other construction-related activities. These activities will be restricted to the proposed project area footprint and areas identified as “disturbed/developed” on the vegetation map (Figure 2.3.1-1).

**CI-BIO-8:** Sensitive areas outside the proposed project zone, including the potentially jurisdictional area, will be designated as ESAs to be avoided to minimize potential impacts to nearby habitat. These areas will be fenced off or flagged appropriately throughout the duration of the project to prevent accidental impacts from construction personnel.
2.5 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effects assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts occurring over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The CEQA Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under NEPA can be found in 40 CFR Section 1508.7 of the CEQ Regulations.

Methods

The cumulative impacts analysis for the project was developed by following the process set in Caltrans’ SER. The first step in the analysis is to determine whether cumulative development (including the proposed project) would result in a significant impact on an environmental resource. The second step in the analysis is to determine whether the project would make a “considerable” contribution to that impact. As specified in Caltrans guidance, if the proposed project would not by itself result in a substantial direct or indirect impact on a resource, it would not make a considerable contribution to a cumulative impact on that resource. A significant cumulative project impact would occur only where the cumulative impact on the resource was significant and the project substantially contributed to that impact. This cumulative impact analysis includes resources that are substantially affected by the proposed project.

Affected Environment

Cumulative impacts identified for the proposed project result from past, present, and reasonably foreseeable future actions within Palmdale, as well as in the High Desert region of unincorporated Los Angeles County. The affected environment for each of these resources has been previously discussed in their respective portions of Chapter 2.
Long-term growth projections are also considered because they help identify a myriad of individually insignificant future actions that could contribute to potential cumulative impacts but that are not represented in agency project lists. The project design year (2040) is used as the planning horizon for considering future projects and actions. The reasonably foreseeable projects considered in the cumulative impact analysis of this project are summarized in Table 2.5-1. The table identifies regionally relevant projects, such as transportation projects, and substantial local projects. Recently completed projects, as well as projects in the planning or construction phases, are included in this list. In addition to the projects listed in Table 2.5-1, several small commercial projects within Palmdale would contribute incrementally to future traffic volumes on Sierra Highway and SR-138 (Palmdale Boulevard).

**Potential Impacts**

This section discusses potential impacts on various environmental resources that would result from the proposed project, together with the other projects listed.

Two major transportation projects are proposed in the project area: the California High-Speed Train System and High Desert Corridor. Other regional transportation projects include a combined High-Speed Train/MetroLink rail station in Palmdale. A development project geared toward TOD, the Palmdale Transit Village, would create new multi-family residential opportunities. The Palmdale Station Area Plan would assure appropriate transit-related development in the surrounding community. Commuters and increased economic activity in the area surrounding the new station would increase motor vehicle traffic, air pollutant emissions, and traffic noise.

According to SCAG, the greater Antelope Valley area has grown substantially in the last 20 years and is projected to continue to grow in the future. In the larger community, urban development continues. Recently completed projects that are expected to generate additional vehicle trips include a 420,000-square-foot commercial center, a 60,000-square-foot retail/office development, and 2 residential projects: a 164-unit housing development and a 57,935-square-foot assisted living facility. Other minor developments in Palmdale that will affect motor vehicle volumes include daycare and charter school facilities; assisted living facilities; office, retail, medical, restaurant, single- and multi-family residential, and hotel developments; mini-storage facilities; convenience stores; church facilities; a car wash and other auto-related facilities; telecommunications facilities; and gas stations.

The construction schedules for some of the development that has been approved or is under consideration may overlap, likely resulting in increased local construction traffic congestion and construction air emissions and noise impacts. The High Desert Corridor, the High-Speed Train, and development associated with the rail station in Palmdale are examples of actions that could contribute to cumulative construction impacts. The timing of the High-Speed Train and High Desert Corridor projects is uncertain. Caltrans would work with other lead agencies to ensure overlapping construction from multiple projects in the same area would be managed to avoid or lessen cumulative impacts.
### Table 2.5-1: Cumulative Projects

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Description</th>
<th>Lead Agency</th>
<th>Project Status</th>
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<tr>
<td>Transportation Projects</td>
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<tr>
<td>1 California High Speed Train System</td>
<td>California High-Speed Rail Authority proposes a train system capable of operating at speeds in excess of 200 mph on a fully grade-separated track serving the major metropolitan centers of California. Project segments relevant to the proposed project include Bakersfield to Palmdale and Palmdale to Los Angeles.</td>
<td>California High-Speed Rail Authority and Federal Railroad Administration</td>
<td>The Bakersfield to Palmdale and Palmdale to Los Angeles segments are in environmental review. The statewide EIR/EIS was finalized and the Record of Decision was signed in November 2005.</td>
</tr>
<tr>
<td>2 High Desert Corridor</td>
<td>The proposed 63-mile-long west-east facility would provide route continuity and relieve traffic congestion between SR-14 in Los Angeles County and SR-18 and I-15 in San Bernardino County.</td>
<td>Caltrans</td>
<td>The Final EIR/EIS was certified in June 2016.</td>
</tr>
<tr>
<td>3 Transit Oriented Development Land Use Framework Plan</td>
<td>The project will evaluate a variety of land uses and modes of transportation, and prepare a plan to provide multimodal connectivity near the Palmdale Transportation Center and future California High-Speed Rail Station. The project area boundaries include Rancho Vista Boulevard (north), SR-138 (Palmdale Boulevard) (south), SR-14 (west), and 10th Street East (east). The project area also includes Palmdale Regional Airport, located approximately 1 mile northeast of the Palmdale Transportation Center.</td>
<td>City of Palmdale</td>
<td>The project is in the Final Adoption process. The EIR is being prepared and is scheduled to be completed by late 2017.</td>
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<tr>
<td>4 Palmdale Station Area Plan</td>
<td>In partnership with California High-Speed Rail Authority, the City will undertake station area planning around the planned high-speed rail multimodal station near downtown Palmdale. This planning effort will guide design of the station and station area, and enable the City to promote economic development, encourage station area development, and enhance multimodal connections to the future station. Working with the California High-Speed Rail Authority, regional partners, stakeholders, community, and developers, station area planning will complement the planning and design of the high-speed rail system and transportation planning efforts underway by the City and regional agencies. Related planning efforts include the Metro-led TOD, Mobility Matrix, North County Multimodal Integrated Transportation Study, High Desert Corridor Project, and SCAG-led Avenue Q Feasibility Study.</td>
<td>City of Palmdale</td>
<td>The project is undergoing environmental review.</td>
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</table>
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### Table 2.5-1: Cumulative Projects

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Description</th>
<th>Lead Agency</th>
<th>Project Status</th>
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<tr>
<td><strong>Other Development Projects</strong></td>
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<td>5 Palmdale Energy Project (formerly Palmdale Hybrid Power Project)</td>
<td>The 700–megawatt Palmdale Energy Project electric generating facility is located near Palmdale Regional Airport, 0.33 mile south of Avenue M, east of Sierra Highway, adjacent to Air Force Plant 42. This hybrid facility would combine ultra-high efficiency clean-burning natural gas technology with renewable solar equipment.</td>
<td>City of Palmdale</td>
<td>Awaiting Power Purchase Agreement with Southern California Edison before beginning construction.</td>
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<tr>
<td>6 Commercial Center</td>
<td>420,000-square-foot commercial center on 12 acres on the southeastern corner of SR-138 (Palmdale Boulevard) and 10th Street West.</td>
<td>City of Palmdale</td>
<td>Project completed July 2015.</td>
</tr>
<tr>
<td>7 Retail/Office</td>
<td>60,000-square-foot retail/office development on 4.28 acres on 10th Street East.</td>
<td>City of Palmdale</td>
<td>Project completed November 2015.</td>
</tr>
<tr>
<td>8 Residential</td>
<td>164-unit housing development on 5.83 acres at the southwestern corner of Avenue Q-11, west of 10th Street East.</td>
<td>City of Palmdale</td>
<td>Site Plan approved June 2015.</td>
</tr>
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Sources: City of Palmdale, 2016; and High Desert Corridor EIR/EIS, 2016.
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The analysis for this project concludes that cumulative impacts for the following resources could be considerable:

- Community Impacts, including relocation and property acquisition
- Visual/Aesthetics
- Hydrology and Water Quality
- Noise
- Biological Resources

Analyses of cumulative impacts for these resources are presented below. The affected environment for each of these resources has been described in previous subsections. These analyses focus on the cumulative impacts of the Build Alternative.

**Community Resources**

Implementation of the Build Alternative would require two full and two partial property acquisitions, as well as an easement. The High Desert Corridor would require numerous full and partial acquisitions, as well as easements, and other projects (e.g., the High-Speed Train Station) could require some full or partial acquisitions or easements. The scale of the High Desert Corridor acquisitions alone along its alignment through the western portion of Palmdale is such that the character of the local community could be substantially affected. The project’s contribution to this cumulative impact, however, would be inconsequential. Thus, the proposed project would not make a considerable contribution to cumulative impacts on community resources.

**Visual/Aesthetics**

Major new developments in the western portion of Palmdale include the High-Speed Train alignment, the High Desert Corridor alignment, and the High-Speed Train/Metrolink station, as well as new commercial development in the station area and along SR-138 (Palmdale Boulevard) through the commercial core of Palmdale. Together, these developments will increase the number of structures, increase the amount of paved surfaces, and result in an overall increase in the density of development. Increased motor vehicle volumes on SR-138 (Palmdale Boulevard), Sierra Highway, and adjacent thoroughfares will add to the perception of a higher-density urban environment.

The Build Alternative would result in expanded ROW, which would add additional hardscape. To the extent feasible, existing landscaping would be preserved during construction, and any temporary disturbance to vegetation would be replaced. The Build Alternative would not substantially change the existing views of the project area, and none of the related projects would be visible from the project area. Because the corridor is already urbanized, the added pavement would not cause a substantial impact on a cumulative basis. Based on the information and analysis above, direct or indirect cumulative impacts related to visual and aesthetic resources are not anticipated to result, and no additional measures are required; therefore, impacts
associated with implementation of the proposed Project, combined with the related projects, would not have a cumulatively considerable contribution to the cumulative effects on visual or aesthetic resources.

**Hydrology and Water Quality**

**Hydrology**

The project area is substantially developed, with large paved areas and a well-developed drainage system. Existing facilities can be assumed to capture most of the runoff from rain storms and to convey that runoff to existing drainage channels. An unlined drainage channel that runs along Sierra Highway and crosses under SR-138 (Palmdale Boulevard) conveys local runoff to concrete and earthen ditches that ultimately convey runoff to Piute Ponds. Planned, approved, and reasonably foreseeable development in the project area would incrementally increase the expanse of impervious surfaces and incrementally decrease the amount of rainfall infiltrating into local groundwater aquifers. The impacts of this cumulative development on the local surface and subsurface hydrology would not be significant.

Build Alternative drainage facilities would be consistent with existing drainage facilities and systems. The post-construction surface hydrology of the project alignment would be similar to the existing hydrology. The Build Alternative would increase the area of impervious surfaces in the project area by less than 2 acres, or by less than 1 percent, resulting in negligible changes in volumes of storm runoff and infiltration of rainfall into local groundwater aquifers; therefore, the project would not make a considerable contribution to any cumulative impacts on local or regional surface or subsurface hydrology.

Cumulative development in the HSA would not expose people or structures to a significant risk of loss, injury, or death involving flooding or inundation. Although cumulative development could increase the number of people living in potential dam, levee, and mudflow inundation areas, the occurrence of these events at a catastrophic level in Antelope Valley is considered remote. In addition, applicable policies related to inundation hazards from each jurisdiction in the HSA would ensure that development would be protected against potential structural failures and severe weather conditions. Thus, this cumulative impact would be less than significant. Therefore, the Build Alternative’s contribution to cumulative impacts associated with the potential failure of a dam or levee and subsequent mudflow inundation would not be considerable.

**Water Quality**

The cumulative projects listed in Table 2.5-1 would increase impervious areas in the Lancaster HSA. The increase in impervious surface area and more intensive land uses within the HSA resulting from future development could adversely affect water quality by increasing the amount of stormwater runoff, transportation-related pollutants, and associated TDCs entering the storm drain system. The cumulative projects would be required to provide control and treatment of stormwater and other runoff on those project sites prior to discharge of the water offsite. Those controls
could include a wide range of BMPs. Among the various regulations are the applicable provisions of County and municipal codes related to control of stormwater quality for new development and significant redevelopment.

The Build Alternative and the cumulative projects combined would result in a cumulative increase in impervious surfaces in the HSA and in the amount of stormwater and added runoff from other projects. All of the projects would be required to implement Treatment BMPs, such as vegetated swales and infiltration devices, which augment groundwater by retaining stormwater runoff and increasing infiltration into the groundwater regime. Therefore, direct and indirect impacts on groundwater from cumulative development would be less than significant, and the Build Alternative would not make a considerable contribution to cumulative impacts on groundwater. Based on the information and analysis above, direct and indirect cumulative impacts on groundwater recharge would not be significant. No further analysis is necessary, and no additional measures are required.

Noise

Motor vehicle traffic on major thoroughfares, such as SR-138 (Palmdale Boulevard) and Sierra Highway, is the dominant source of ambient noise in the project area. Based on cumulative traffic volumes anticipated in the Year 2040, including the contribution of the proposed project, outdoor noise levels are expected to increase by approximately 2.2 to 2.7 dB (see Table 2.2.7-3). Traffic from future projects, such as the High Desert Corridor, High-Speed Train, and Palmdale multimodal transportation station, are accounted for in those estimates. These cumulative increases in ambient noise levels would not exceed the relevant CEQA significance threshold, nor would they cause federal NAC to be exceeded; therefore, noise impacts from cumulative development would be less than significant.

The Build Alternative would contribute approximately 0.1 to 0.2 dB to the cumulative Year 2040 ambient noise levels expected in the project area. This incremental change in noise level would be imperceptible; therefore, the Build Alternative would not make a considerable contribution to cumulative noise impacts.

Biological Resources

Impacts on sensitive animals in the project area include loss of habitat from increased urban development, utility construction, road and highway improvements, and other activities associated with human disturbance. Existing wildlife resources along the project alignment are minimal and are expected to continue to diminish in the future with completion of the planned and approved development identified above. Cumulative impacts on wildlife resources in the project area are expected to be less than significant because no substantial wildlife resources now exist in this area.

The level of disturbance in the project area would not change substantially over the long term due to the proposed project, because the small amount of wildlife habitat near the road that would be removed under the Build Alternative is low-quality habitat for the sensitive species that could inhabit the project area. The incremental
contribution of the proposed project to cumulative effects on wildlife, and to sensitive species in particular, would not be considerable with implementation of the proposed avoidance and minimization measures listed in Section 2.3.

Resources not Substantially Affected by Cumulative Impacts

The following resources and issues would not contribute to cumulatively considerable impacts:

**Land Use and Planning:** The Build Alternative is consistent with local and regional land use and transportation plans. The Build Alternative would involve very minor conversions of adjacent land uses to transportation. The Build Alternative would not contribute substantially to any known cumulative land use concerns.

**Growth:** The Build Alternative would serve existing traffic volumes and traffic generated by future growth that has already been accounted for in adopted local and regional land use and transportation plans. The project area is substantially built out, and the potential for large new developments near the project alignments is limited. Sierra Highway and SR-138 (Palmdale Boulevard) are existing transportation facilities, and the proposed improvements to these facilities are consistent with approved local and regional land use and transportation plans. The project itself would not generate additional vehicle trips.

**Environmental Justice:** Implementation of the Build Alternative would not disproportionally affect any minority or low-income populations; therefore, the project would not substantially contribute to cumulative impacts on environmental justice.

**Cultural Resources:** Construction of the Build Alternative could result in the discovery of previously unknown cultural resources. Once construction is complete, the Build Alternative would have no effects on subsurface cultural resources; therefore, the project would not contribute to cumulative impacts on cultural resources.

**Geology/Soils/Seismicity/Topography:** Implementation of Caltrans’ SDC would reduce potential impacts on project infrastructure from seismic events. The Build Alternative would not contribute substantially to any known cumulative geologic or topographic conditions.

**Utilities and Emergency Services:** Utilities and emergency services would be affected temporarily during construction of the Build Alternative. Coordinating with utility owners and emergency service providers before construction and implementing a TMP during construction would minimize temporary construction impacts. The Build Alternative would have no permanent impacts on utilities and – by reducing vehicle queuing and traffic congestion – would have a beneficial impact on emergency services.
Traffic and Transportation/Pedestrian and Bicycle Facilities: The Build Alternative would have beneficial impacts on traffic and transportation and pedestrian and bicycle facilities along the project alignments. The Build Alternative is intended and designed to enhance the existing transportation system; therefore, the Build Alternative would not contribute to cumulative impacts on these resources.

Hazardous Wastes or Materials: The project would generate hazardous materials and wastes for disposal at local and regional waste disposal facilities only during construction. Following completion of the project, this transportation improvement project would not contribute further to hazardous waste streams; therefore, the proposed project would not have long-term impact on regional hazardous waste management resources and would not contribute to cumulative impacts.

Air Quality: The project would not affect the volume of average daily vehicle trips, alter the vehicle mix, or otherwise create new sources of air pollutant emissions. The project is intended to decrease future traffic congestion and to increase mobility. The Build Alternative would reduce future air pollutant emissions relative to the No Build Alternative scenario; therefore, the Build Alternative would not contribute to cumulative impacts on air quality.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance, minimization, and mitigation measures identified in each topical section in this document would serve to minimize cumulative impacts to the extent feasible. As each project is evaluated for environmental impacts, project-specific mitigation measures would apply, which would reduce the cumulative impact.
2.6 Climate Change under CEQA

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 GHG emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (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 United States, the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

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

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

Regulatory Setting

State

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

AB 1493, Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires ARB to develop and implement regulations to reduce automobile and light-truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.
EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California’s GHG emissions to (1) year 2000 levels by 2010, (2) year 1990 levels by the 2020, and (3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with passage of AB 32.

AB 32, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of GHGs.”

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

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

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

SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets from passenger vehicles. The MPO for each region must then develop an SCS that integrates transportation, land use, and housing policies to plan for achievement of the emissions target for their region.

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

Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither EPA nor FHWA has issued explicit guidance or methods to conduct project-level GHG analysis. FHWA supports the approach that climate change considerations should be integrated throughout the transportation decision-making process, from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision making and improve efficiency at the program level, and it will inform the analysis and stewardship needs of project-level decision making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.
The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the State is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

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

**EO 13514 (October 5, 2009):** This EO is focused on reducing GHGs internally in federal agency missions, programs, and operations, but it 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.

EPA’s authority to regulate GHG emissions stems from the United States Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing CAA and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court’s ruling, EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court’s interpretation of the existing Act and EPA’s assessment of the scientific evidence that form the basis for EPA’s regulatory actions. EPA, in conjunction with National Highway Traffic Safety Administration (NHTSA), issued the first of a series of GHG emission standards for new cars and light-duty vehicles (LDVs) in April 2010.

EPA and NHTSA are taking coordinated steps to enable production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional LDV GHG regulations.

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

On August 28, 2012, EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards, this program is projected to save approximately 4 billion barrels of oil and 2 billion metric tons of GHG emissions.
The complementary EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut GHG emissions and domestic oil use significantly. This program responds to President Barack Obama’s 2010 request to jointly establish GHG emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO₂ emissions by approximately 270 MMT and save approximately 530 million barrels of oil over the life of model year 2014 to 2018 heavy-duty vehicles.

**Affected Environment**

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California (forecast last updated October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008 (see Figure 2.6-1).

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4 This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).
Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California’s GHG emissions are from the burning of fossil fuels and 40 percent of all human-made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.5

One of the main strategies in Caltrans’ Climate Action Program to reduce GHG emissions is to make California’s transportation system more efficient. The highest levels of CO₂ from mobile sources, such as automobiles, occur at stop-and-go speeds (zero to 25 mph) and speeds over 55 mph; the most severe emissions occur from zero to 25 mph (see Figure 2.6-2). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, GHG emissions, particularly CO₂, may be reduced.

5 Caltrans Climate Action Program is located at the following Web address:
Chapter 2 • Affected Environment, Potential Impacts, and Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts

No Build Alternative

Under the No Build Alternative, there would be no project construction; therefore, there would be no impacts.

Build Alternative

Intersection delay data obtained from the Traffic Study Report were utilized to estimate existing and forecasted operational GHG emissions within the traffic study area. The analysis considered the total daily delay in the project area based on the sum of the morning peak-hour delay and the evening peak-hour delay measurements. Table 2.6-1 presents results of the operational GHG emissions analysis. The AVAQMD thresholds of significance are shown for informational purposes to put the emissions in a regional context.

Annual GHG emissions under 2014 existing conditions were approximately 421 tons of CO₂e. In 2020, annual GHG emissions under future conditions without and with the proposed project would be approximately 416 tons CO₂e and 310 tons CO₂e, respectively. The 2020 forecast suggests that the proposed project would reduce regional GHG emissions by approximately 26 percent compared to existing 2014 conditions and by approximately 25 percent compared to the future without project condition. The reduction in emissions in 2020 relative to the 2014 existing conditions can be attributed to the more stringent emissions standards and phase-out of older vehicles, as well as improvements in circulation throughout the corridor.
Table 2.6-1: GHG Emissions from Proposed Project Operation

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Operational CO₂e Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pounds per day</td>
</tr>
<tr>
<td><strong>Existing Operational Conditions</strong></td>
<td></td>
</tr>
<tr>
<td>2014 Existing</td>
<td>2,307</td>
</tr>
<tr>
<td>2020 Forecast Operations</td>
<td>2,280</td>
</tr>
<tr>
<td>2020 Future Without Project</td>
<td>1,700</td>
</tr>
<tr>
<td>% Change from 2020 Future Without Project</td>
<td>-25%</td>
</tr>
<tr>
<td>Net Change from 2020 Future Without Project</td>
<td>-580</td>
</tr>
<tr>
<td>% Change from 2014 Existing</td>
<td>-26%</td>
</tr>
<tr>
<td>Net Change from 2014 Existing</td>
<td>-607</td>
</tr>
<tr>
<td>AVAQMD CEQA Significance Thresholds</td>
<td>548,000</td>
</tr>
<tr>
<td><strong>2040 Forecast Operations</strong></td>
<td></td>
</tr>
<tr>
<td>2040 Future Without Project</td>
<td>3,434</td>
</tr>
<tr>
<td>2040 Proposed Project</td>
<td>2,489</td>
</tr>
<tr>
<td>% Change from 2040 Future Without Project</td>
<td>-28%</td>
</tr>
<tr>
<td>Net Change from 2040 Future Without Project</td>
<td>-946</td>
</tr>
<tr>
<td>% Change from 2014 Existing</td>
<td>8%</td>
</tr>
<tr>
<td>Net Change from 2014 Existing</td>
<td>182</td>
</tr>
<tr>
<td>AVAQMD CEQA Significance Thresholds</td>
<td>548,000</td>
</tr>
</tbody>
</table>


The 2040 forecast demonstrates that the proposed project would increase regional GHG emissions by approximately 8 percent compared to existing conditions and decrease regional GHG emissions by 28 percent compared to emissions under the 2040 future without project condition. The proposed project would result in a net decrease in operational GHG emissions relative to the future without project condition.

**Greenhouse Gas Reduction Strategies**

Caltrans continues to be involved on the Governor’s Climate Action Team as ARB works to implement EOs 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 former Governor Arnold Schwarzenegger’s Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in GHG emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO₂ reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements, as shown in Figure 2.6-3.
Caltrans is supporting efforts to reduce VMT by planning and implementing smart land use strategies: job/housing proximity and 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 also assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars and light- and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, supporting legislative efforts to increase fuel economy, and participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by EPA and ARB.

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

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California’s future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 (June 2016) will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State’s transportation needs.
Table 2.6-2 summarizes Caltrans and statewide efforts that it is implementing to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

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

Caltrans Activities to Address Climate Change (April 2013)\(^6\) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce GHG emissions resulting from agency operations.

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

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the CEQ, the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011,\(^7\) 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. 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.

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\(^7\) [http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation](http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation).
### Table 2.6-2: Climate Change/CO₂ Reduction Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Program</th>
<th>Partnership</th>
<th>Method/Process</th>
<th>Estimated CO₂ Savings Million Metric Tons (MMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Smart Land Use</strong></td>
<td>Intergovernmental Review (IGR) Caltrans</td>
<td>Local governments</td>
<td>Review and seek to mitigate development proposals</td>
<td>Not Estimated No Estimated</td>
</tr>
<tr>
<td></td>
<td>Planning Grants Caltrans</td>
<td>Local and regional agencies and other stakeholders</td>
<td>Competitive selection process</td>
<td>Not Estimated No Estimated</td>
</tr>
<tr>
<td></td>
<td>Regional Plans and Blueprint Planning Regional Agencies Caltrans</td>
<td>Regional plans and application process</td>
<td></td>
<td>0.975 7.8</td>
</tr>
<tr>
<td><strong>Operational Improvements &amp; Intelligent Transportation System (ITS) Deployment</strong></td>
<td>Strategic Growth Plan Caltrans Regions</td>
<td>State ITS; Congestion Management Plan</td>
<td>Policy establishment, guidelines, technical assistance</td>
<td>0.07 2.17</td>
</tr>
<tr>
<td><strong>Mainstream Energy &amp; GHG into Plans and Projects</strong></td>
<td>Office of Policy Analysis &amp; Research; Division of Environmental Analysis Interdepartmental effort</td>
<td>Interdepartmental, Cal/EPA, ARB, California Energy Commission (CEC) Analytical report, data collection, publication, workshops, outreach</td>
<td>Policy establishment, guidelines, technical assistance</td>
<td>Not Estimated No Estimated</td>
</tr>
<tr>
<td><strong>Educational &amp; Information Program</strong></td>
<td>Office of Policy Analysis &amp; Research</td>
<td>Interdepartmental, Cal/EPA, ARB, California Energy Commission (CEC) Analytical report, data collection, publication, workshops, outreach</td>
<td>Policy establishment, guidelines, technical assistance</td>
<td>Not Estimated No Estimated</td>
</tr>
<tr>
<td><strong>Fleet Greening &amp; Fuel Diversification</strong></td>
<td>Division of Equipment Department of General Services</td>
<td>Fleet Replacement B20 B100</td>
<td></td>
<td>.0045 0.0065 0.045 0.0225</td>
</tr>
<tr>
<td><strong>Nonvehicular Conservation Measures</strong></td>
<td>Energy Conservation Program Green Action Team</td>
<td>Energy Conservation Opportunities</td>
<td></td>
<td>0.117 0.34</td>
</tr>
<tr>
<td><strong>Portland Cement</strong></td>
<td>Office of Rigid Pavement Cement and Construction Industries</td>
<td>2.5 % limestone cement mix 25% fly ash cement mix &gt; 50% fly ash/slag mix</td>
<td></td>
<td>1.2 4.2 0.36 3.6</td>
</tr>
<tr>
<td><strong>Goods Movement</strong></td>
<td>Office of Goods Movement Cal/EPA; ARB; Business, Transportation and Housing Agency (BT&amp;H); MPOs</td>
<td>Goods Movement Action Plan Not Estimated</td>
<td></td>
<td>Not Estimated Not Estimated</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>2.72 18.18</td>
<td></td>
</tr>
</tbody>
</table>
On November 14, 2008, former Governor Arnold Schwarzenegger signed EO S-13-08, which directed many state agencies to address California’s vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea-level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, State, and federal public and private entities to develop The California Climate Adaptation Strategy (December 2009), which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across State agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08, which 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 Cal/EPA; Business, Transportation and Housing Agency (BT&H); Health and Human Services; and Department of Agriculture. The document is broken down into strategies for different sectors that include Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the State's adaptation strategy will be updated to reflect current findings.

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

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

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT), as well as Caltrans, as a method to initiate action and discussion of potential risks to the 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 of Science study.

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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 (NOP) as of the date of EO S-13-08, and/or are programmed for construction funding 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.

EO S-13-08 also directed BT&H to prepare a report to assess vulnerability of transportation systems to sea-level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea-level rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects; however, without statewide planning scenarios for relative sea-level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea-level rise.

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

**Avoidance, Minimization, and/or Abatement Measures**

**No Build Alternative**

No avoidance, minimization, and/or abatement measures would be required.

**Build Alternative**

Caltrans is committed to implement the adaptive strategies outlined above; no project-specific avoidance, minimization, and/or abatement measure would be required.
Chapter 3  Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an important part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and it assists in identifying potential impacts, 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 (PDT) meetings, interagency coordination meetings, and a public outreach program. This process, known as scoping, allows public agencies and the general public to learn about the project and to provide suggestions on alternatives and the types of impacts to be evaluated.

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

3.1 Scoping Process

Scoping is a process designed to examine a proposed project early in the environmental impact analysis and review process. Scoping is intended to identify the range of issues raised by the proposed project and to outline feasible alternatives or mitigation measures to avoid potentially significant environmental effects. The scoping process inherently stresses early consultation with local agencies, responsible agencies, review agencies, trustee agencies, tribal governments, and any federal agency whose approval or funding will be required for completion of the project.

Scoping is considered an effective way to bring together and resolve the concerns of other agencies and individuals who may potentially be affected by the proposed action, as well as other interested persons, such as the general public, who might not be in accord with the action on environmental grounds.

The environmental document for this project is an Initial Study/Environmental Assessment (IS/EA). NEPA and CEQA regulations do not require an IS/EA to undergo formal scoping procedures; however, in lieu of a scoping meeting Caltrans held a Public Information Meeting. An open house style public information meeting was conducted on June 7, 2016 from 6:00 to 8:00 p.m. at the Chimbole Cultural Center in Palmdale.

A Public Notice and Project Information Sheet was mailed to government agencies, interested parties, elected officials, community stakeholders and organizations, and residents within a 0.25-mile radius of the project area.

At the open house, Caltrans, the City, and project consultant team members presented information about the proposed project and the environmental process to the participants. The public was invited to submit written comments, questions, and concerns to:
3.2 Consultation and Coordination with Public Agencies

A summary of public agency consultation and coordination throughout the environmental review process of this project is provided below.

- As described in Section 3.1, a Public Notice and Project Information Sheet was mailed to government agencies, interested parties, elected officials, community stakeholders and organizations, and residents within a 0.25-mile radius of the project area. No representatives from any public agency other than Caltrans and City staff attended the Project Information Meeting. Nine letters of comment were received from the following agencies/individuals:
  - Sanitation District of Los Angeles County expressed the concern of project impacts on sewer locations. Project coordination with utility and public services providers has been undertaken to ensure impacts would be avoided or minimized.
  - County of Los Angeles Department of Parks and Recreation, stating that the project will not affect the Department’s facilities.
  - United States Department of Homeland Security, stating that any changes to buildings in the floodplain will have to meet the floodplain requirements. This comment does not apply to this project.
  - San Manuel Band of Mission Indians expressed concern on impacts to archaeological deposits and asked for participation in the project. Based on the results of the archaeological and historic architectural studies, Caltrans has determined that the undertaking (the project) would have no effect on historic properties. No archaeological sites were identified as a result of the survey, and the potential for subsurface archaeological resources appears to be low.
  - CPUC stated that the Commission has jurisdiction over the safety of highway-rail crossings in California. The comment is acknowledged.
  - Metrolink indicated that close cooperation with Southern California Regional Rail Authority (SCRRRA) and UPRR, as well as Metro and CPUC, will be required. The PDT members have initiated coordination with all railroad agencies.
  - Farmers Insurance Company’s representative expressed concern about the impacts to businesses as a result of the project. The project will be designed to
minimize impacts to area residents and businesses. Mitigation measures will be implemented to further minimize any identified impacts.

- Mr. Mynor Guillen, with a local trucking company, offered trucking services to the project.
- Mr. Jason Zink, an area resident, commented on landscape improvements. The comment is acknowledged.

- A monthly PDT meeting has been arranged to discuss project progress, project issues, and obtain consensus on key decisions. The PDT members include representatives from Caltrans, the City, Metro, and the consultant team.

- Coordination with UPRR has been initiated to obtain preliminary concurrence on the widening of SR-138 (Palmdale Boulevard) near the existing at-grade crossing. Coordinating with UPRR on the ROW requirements at the Avenue R/Sierra Highway intersection is ongoing.

- Coordination with utility companies to obtain existing as-built mapping and identify potential utility conflicts has been initiated.

- During the course of the cultural resources study, the following activities have occurred:
  - A letter soliciting input on historical resources was sent to the West Antelope Valley Historical Society on April 26, 2016. No responses were received.
  - In accordance with Section 106 of the NHPA, on April 5, 2016, a request was made to the NAHC for a review of the Sacred Lands File to determine if any known cultural resources are present within or adjacent to the project’s APE. The NAHC responded on April 6, 2016, stating that the Sacred Lands File did not indicate the presence of Native American cultural resources within the project vicinity. The NAHC also requested that four Native American individuals and/or Tribal organizations be contacted to solicit any information or concerns regarding cultural resources issues related to the proposed project.
  - Letters requesting information about the project area and comments about the project were sent to the following Native American contacts on April 1, 2016: Dennis Patch, Chairman, Colorado River Indian Tribe; John Valenzuela Chairperson San Fernando Band of Mission Indians; Daniel McCarthy, Director, Cultural Resources, San Manuel Band of Mission Indians; and Lynn Valbuena, Chairwoman, San Manuel Band of Mission Indians. Follow-up e-mails and phone calls were made on April 19 and May 11, 2016. With the exception of the San Manuel Band of Mission Indians, as discussed below, no comments were received from any other contacts whom the NAHC recommended be consulted for purposes of this project.
  - Leslie Mouriquand, on behalf of Daniel McCarthy of the San Manuel Band of Mission Indians, indicated in an e-mail that the project is located in the San Manuel's tribal territory and requested a copy of the record search results, site records, and any reports prepared for this project. Additionally, she requested
information regarding the depths of the proposed ground disturbances and the depth of previous ground disturbance. A summary of the records search results was sent via e-mail on April 19, 2016, and a compact disc with the site records was mailed out on April 20, 2016. Ms. Mouriquand confirmed receipt on May 20, 2016. Following receipt of a project Public Information Meeting letter dated June 1, 2016, Ms. Mouriquand responded via e-mail on August 18, 2016, to state they did not have any specific information about tribal cultural resources at the project location but asked to be consulted if such resources are discovered during project construction. No subsequent comments have been received.

- In addition to consultations conducted to meet the requirements of Section 106 of the NHPA, consultations were conducted by the City under CEQA, AB 52, “Tribal Cultural Resources”. The Fernandeño Tataviam Band of Mission Indians responded to a request on September 26, 2016. On October 6, 2016, representatives from the City met with Ms. Kimia Fatehi of the Tribe’s Historic and Cultural Preservation Department to discuss the project and any concerns. A letter sent by e-mail from Ms. Fatehi to the City on October 7, 2016, requested that the project incorporate Native American monitors for all ground-disturbing activities and also involve the Tribe with any artistic opportunities, such as freeway wall design, that might arise with the project. While Caltrans staff determined that the conditions for archaeological and Native American monitoring had not been met because no archaeological sites had been identified in the APE and there appeared to be low sensitivity for encountering buried resources, the City agreed to incorporate these measures in the environmental document as part of its consultation efforts under AB 52.

- Based on the results of the archaeological and historic architectural studies, Caltrans has determined that the undertaking (the project) would have no effect on historic properties. No archaeological sites were identified as a result of the survey, and the potential for subsurface archaeological resources appears to be low. A built environment study identified and evaluated 14 historic NRHP and Caltrans has determined that all these built environmental were not eligible for NRHP. Under the Section 106 PA, Stipulation VIII.C.6, in November 2016, Caltrans requested SHPO’s concurrence in this determination. On December 22, 2016, the SHPO concurred with the finding that 13 resources were determined not eligible for the NRHP. The SHPO did not have sufficient information to concur with Caltrans finding of ineligibility for one resource, the Union Pacific Railroad (UPRR)/Southern Pacific Railroad (SPRR) (P-19-180638) and as a result recommended that Caltrans assume eligibility of the railroad pursuant to Stipulation VIII.C(4) of the Section 106 PA because special circumstances precluded the railroad’s complete evaluation, including restricted access, its large property size, and a limited potential for effects from this project only. On January 3, 2017, Caltrans notified FHWA that Caltrans will assume eligibility for the NRHP for the UPRR/SPRR (P-19-180638).
During the course of the project development, the City of Palmdale Department of Public Works staff has coordinated with the City of Palmdale Parks and Cultural Department to discuss the need to acquire a small portion of Robert St. Clair Parkway to accommodate the proposed project construction. The Parks Director has acknowledged this and would concur with the Section 4(f) de minimis finding to be made by Caltrans (Email communication with Carlene Saxton, Senior Environmental Planner, City of Palmdale Department of Economic and Community Development Planning Division, February 12, 2017).

3.3 Public Participation

3.3.1 Public Information Meeting

A Public Information Meeting was held on June 7, 2016, from 6:00 to 8:00 p.m. at the Chimbole Cultural Center in Palmdale. The purpose of the meeting was to provide early consultation with the public and project stakeholders. Display advertisements and legal notices were placed in two local newspapers, the Antelope Valley Press on May 31, 2016 and La Prensa on June 6, 2016, to notify the public about the Public Information Meeting. A Public Notice and Project Information Sheet was mailed to government agencies, interested parties, elected officials, community stakeholders and organizations, and residents within a 0.25-mile radius of the project area. The mailing included approximately 90 community stakeholders, 54 agencies, 10 elected officials, and 3,600 residents in the project area.

A total of 20 people signed in at the meeting, including City and agency staff, representatives from the City, consultant team, a representative from Assembly member Tom Lackey’s office, and local residents.

The meeting format was an open house, followed by a presentation. The open house allowed community members to view informational boards and speak directly with project staff. The community was provided with a presentation that included an overview of the project, project alternatives, the environmental review process, project schedule, next steps, and ways to submit comments.

During the Public Information Meeting, six community members provided input on two design options for Sierra Highway and 10th Street East. Option 1 kept the sidewalks a priority and had bicycles share the outside travel lane with motor vehicles. Option 2 narrowed the sidewalks and created an exclusive bike lane. Five people supported Option 1, and one person supported Option 2. An additional three comments were received during the public meeting in support of having the crosswalk on the west side of Sirra Highway.

3.3.2 Public Review of the Draft Environmental Document

This draft environmental document is being circulated for public review and comments. A Notice of Availability (NOA) and Notice of Public Hearing of this draft environmental document has been sent to area residents living within ¼ mile radius of the project site, and project distribution list, which consists of federal, state, and local agencies with jurisdiction over the project; elected officials; neighborhood and
community groups; civic organizations; utilities; businesses; and, employment centers. The NOA and Notice of Public Hearing have also been published in local newspapers, including Antelope Valley Press and La Plensa.

The draft environmental document is available at the following locations:

- Palmdale Public Works Department, 38250 Sierra Highway, Palmdale, CA 93550
- Palmdale Public Library, 700 East Palmdale Boulevard, Palmdale, CA 93550
- Caltrans District 7 Office, 100 South Main Street, Los Angeles, CA 90012
- City of Palmdale website: [http://www.cityofpalmdale.org/](http://www.cityofpalmdale.org/)

Comments received during the public review period will be responded to and presented in the final environmental document.
Chapter 4 List of Preparers

California Department of Transportation

Tania Asef, District Biologist. B.S. Biological Sciences, University of California Irvine and M.S. Biology, California State University, Long Beach; 8 years of experience in biological surveys, restoration, and technical reports. Contribution: Review of biological technical report.

Paul Caron, Senior District Biologist. B.S. Environmental & Systematic Biology, California Polytechnic State University, San Luis Obispo; 23 years of experience in biological surveys, biological technical reports, and ecological restoration; 11 of those years as a supervisor of biologists. Contribution: Review of biological technical report.

Kelly Ewing-Toledo, Senior District Environmental Planner, Cultural Resources Unit. B.A. History, California State University Sacramento, M.A. History/Public History, California State University Fullerton; 16 years of experience in cultural resources management with focus on the built environment; PQS- Principal Architectural Historian; District Heritage Resources Coordinator; 3 years as Supervising Environmental Planner of archaeologist and historians. Contribution: Oversight and review of APE Maps, HPSR, HRER, ASR, FOE, and Programmatic Agreement.

Caprice “Kip” Harper, Associate Environmental Planner. B.A. and M.A. Anthropology, California State University, Los Angeles and Graduate Certificate in Heritage Resource Planning, University of Victoria, B.C.; 18 years of experience in cultural resources management/historic preservation planning; PQS Principal Investigator-Prehistoric Archaeology and PQS Architectural History. Contribution: Reviewed APE Map, HPSR, HRER, and ASR.


Dawn Kukla, Senior Environmental Planner. B.A. Environmental Studies and B.A. Geography, University of California, Santa Barbara; 17 years of CEQA/NEPA Compliance. Contribution: Environmental project manager and supervisory environmental review of the document.

Jin S. Lee, Senior Transportation Engineer. B.S. Civil Engineering, University of Washington. 28 years of experience in civil and environmental engineering

Sheik Moinuddin, Senior Transportation Engineer. B.S. in Civil Engineering, University of Louisiana and M.S. in Environmental Engineering, California State University Long Beach; 25 years of experience in civil engineering for infrastructure and development projects. Contribution: Project Management.

Penny Nakashima, Senior Geologist Engineer. B.S. Geology, California State University Los Angeles; 34 years of experience in hazardous waste assessment and investigation of air pollution control. Contribution: Oversight and review of Hazardous Waste Assessment

Dahlia Persoff, Landscape Associate. B.S. Landscape Architecture, California Polytechnic State University, San Luis Obispo; 18 years of experience in landscape design, visual impact assessment and technical reports for infrastructure and development projects. Contribution: Review of Visual Impact Assessment.

Kathy D Pham, Transportation Engineer. B.S & M.S Civil, Cal State Fullerton, CA. 14 years of civil engineering experience with OCTA and Caltrans. Contribution: Review all the design documents, oversight project engineer


Vanessa Velasco, Environmental Planner. B.S. Environmental Biology, California State University, Northridge and M.S. Environmental Science, Loyola Marymount University; 1 year of experience organizing community outreach efforts and preparing environmental documents for Caltrans and local agencies transportation project proposals. Contribution: Environmental project management, environmental document preparation, and oversight.

Andrew Yoon, Senior Transportation Engineer. B.S. Civil and Environmental Engineering, University of California, Los Angeles; 17 years of experience in civil and environmental engineering for infrastructure and development projects. Contribution: Review of Air Quality Impacts Assessment.

City of Palmdale

Mike Behen, Transportation/Special Projects Manager (Project Manager)

Rob Bruce, Planning Manager

Carlene Saxton, Senior Planner
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Consultant Staff

Parsons

Bruce Campbell, Environmental Project Manager. M.S. Environmental Management, AICP; more than 40 years of experience in project management, environmental studies, impact assessment, and site investigations. Contribution: Contributing author of the environmental document.

Nicole DeLuca, Project Engineer. B.S. Civil Engineering, Lehigh University; 9 years of experience in planning and design of roadway projects. Contribution: Design, engineering technical studies, and Draft Project Report.

Daniel Kachi, Civil Engineer. B.S. Civil and Environmental Engineering, San Diego State University; 3 years of experience in road and highway design. Contribution: Lead Roadway Designer.

Greg King, Principal Environmental Planner. M.A. Public Historical Studies, University of California, Santa Barbara; 30 years of environmental planning experience. Contribution: Contributing author of the paleontology section; provide quality assurance (QA)/quality control (QC) technical reviews of the cultural resources background studies, community impacts, and land use sections of the environmental document, and Section 4(f) analysis.

Anne Kochaon, Qualified Environmental Professional, Principal Project Manager. M.S. Environmental Engineering, Asian Institute of Technology, Bangkok, Thailand; 33 years of experience in environmental planning and impact assessment. Contribution: Technical studies and environmental document task management, draft environmental document preparation manager.

Nak Kim, Principal Engineer. B.S. Civil Engineering, Arizona State University; 17 years of experience in transportation/traffic engineering. Contribution: Traffic lead for traffic study technical report.

Liz Koos, Senior Technical Editor. 29 years of editing experience. Contribution: Environmental document technical editor.


Jeff Lormand, Senior Landscape Architect. B.S. Landscape Horticulture, Concentration Design, Colorado State University and MLA Master of Landscape Architecture, University of Arizona; 32 years of experience. Contribution: Reviewed visual section.

SR-138 (5th Street East to 10th Street East) Improvements Project • 4-3
Thanh Luc, Technical Staff Manager, Noise and Vibration. B.S. Mechanical Engineering, California State Polytechnic University, Pomona; 24 years of experience in noise and vibration analysis. Contribution: Noise and vibration section.

Glen Parker, Civil Engineer, Project Manager. B.S. Civil Engineering, Gonzaga University, Spokane, Washington; 16 years of experience in transportation engineering. Contribution: Technical studies and project report review.

Leslie Provenzano, Environmental Planner. Master of Planning, University of Southern California; 7 years of environmental planning experience. Contribution: Author of the visual/aesthetics section.

Andrea Reeves Engelman, Senior Environmental Planner. B.S. Arizona State University; 16 years of environmental planning experience. Contribution: Contributing author of the environmental document and Section 4(f) Evaluation.

Kami Sangha, Senior Proposal Coordinator. 29 years of word processing experience. Contribution: Document formatting/layout.

Robert Scales, Senior Program Director, Transportation Planning and Traffic Engineering. Master of Engineering (Transportation), University of South Carolina; 45 years of experience in transportation/traffic engineering. Contribution: Traffic Study technical report lead and principal author.

Veronica Seyde, Water Quality Manager. Master of Environmental Studies, California State University Fullerton; more than 25 years of experience in water quality sciences, with more than 10 years of experience providing environmental documentation for water resource sections and analyzing the implications of stormwater and dry weather urban runoff. Contribution: Contributing author of the environmental document.

_Terry A. Hayes Associates, Inc. (TAHA)_

Sam Silverman, Senior Associate. M.S. Environmental Health, University of California, Los Angeles; 15 years of experience in environmental planning and impact assessments related to air quality and GHG emissions. Contribution: Air quality and GHG task management, Air Quality Study oversight.

Anders Sutherland, Environmental Scientist. B.S. Atmospheric, Oceanic, & Environmental Sciences, University of California, Los Angeles; 6 years of experience in impact assessments related to air quality and GHG emissions. Contribution: Primary author of Air Quality Study, including estimation of emissions.

_ECORP Consulting_

Jeremy Adams, Architectural Historian. M.A. History, California State University, Sacramento; 7 years of experience in evaluation of built environment resources. Contribution: Author of HRER.
Kristina Lindgren, Historic Resources Specialist. M.A. Anthropology and Heritage, University of Leicester, England; 12 years of experience in cultural resources management. Contribution: Author of HRER.

Roger Mason, Cultural Resources Manager. Ph.D. Anthropology, University of Texas, Austin; 33 years of experience in cultural resources management. Contribution: Supervised HRER.

Donald R. Mitchell, Principal Biologist. M.S. Zoology, Northwestern State University of Louisiana, Natchitoches; 29 years of experience in biology and impact assessment. QA/QC manager for biology and NES.

Scott Taylor, Senior Biologist/Wetlands Specialist. B.A. Biology, Point Loma Nazarene University, San Diego, California; more than 25 years of experience conducting biological studies, wetlands studies, and endangered species surveys. Contribution: Wetlands analysis and impact assessment and author of NES.

Phillip Wasz, Senior Wildlife Biologist. B.S. Wildlife Biology, Colorado State University, Fort Collins, Colorado; 7 years of experience conducting biologist surveys and habitat assessments for special-status species. Contribution: Biological surveyor and author of NES.

The Robert Group

Randal Curtis, Project Manager. M.A. Political Science, California State University, Northridge; 8 years of public engagement experience. Contribution: Public outreach.

Clarissa Filgioun, Senior Vice President. MBA, Haas School of Business, University of California at Berkeley; 30 years of public engagement experience. Contribution: Public outreach lead.

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Sherri Gust, Program Manager. M.S. Anatomy, University of Southern California; 35 years of experience. Contribution: Project Manager and editor of the ASR.

André Simmons, Archaeologist, GIS Manager. M.A. Anthropology, California State University, Fullerton; 6 years of experience. Contribution: Author of APE map and ASR.

Molly Valasik, Principal Investigator for Archaeology. M.A. Anthropology, Kent State University; 7 years of experience. Contribution: Author of ASR.

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Meredith Church, P.G. Associate Geologist. M.S. Geology, Loma Linda University; 13 years of experience. Contribution: Author of ISA; Co-author of ADL Survey and Site Investigation Workplan.


Renee Morales, P.E. Project Engineer. M.S. Civil Engineering, San Jose State University; 5 years of experience. Contribution: Co-author of Geotechnical Impact Evaluation Study.

Mark Withrow, P.E. Project Engineer. B.S. Chemical Engineering, University of California, Santa Barbara; 9 years of experience. Contribution: Co-author of ADL Survey and Site Investigation Workplan.
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819 East Avenue Q-9
Palmdale, CA 93550

Chuck Church Vice-Chair,
Governmental Affairs
Palmdale Chamber of Commerce
817 East Avenue Q-9
Palmdale, CA 93550

Caroline Roderiguez, Board Chair
Palmdale Chamber of Commerce
817 East Avenue Q-9
Palmdale, CA 93550

Community-Based Organizations

Anne Ambrose, Chair
American Red Cross
2751 East Avenue P
Palmdale, CA 93550
Antelope Valley
Joint Legislative Committee of the
Greater Antelope Valley Association
of Realtors
1112 W Ave M-4, MS-20
Palmdale, CA 93551

Judy Hoppe
Antelope Valley Archaeological Society
P.O. Box 4233
Lancaster, CA 93539

Michelle Keifer Executive Director
Antelope Valley Partners for Health
45104 10th Street
West Lancaster, CA 93534

Building Industry Association of
Southern California
350 S. Bixel Street
Suite 100
Los Angeles, CA 90017

Xilian Stammer, Director
Early Childhood Education
975 East Avenue P-8
Palmdale, CA 93550

Greater Antelope Valley Association
of Realtors
1112 W Avenue M-4
Palmdale, CA 93551

Greater Antelope Valley Economic
Alliance
P.O. Box 5477
Lancaster, CA 93539

Dan Knapp, Deputy Director
LA Conservation Corps
P.O. Box 15868
Los Angeles, CA 90015

Bo Savage, Division Director
LA Conservation Corps
P.O. Box 15868
Los Angeles, CA 90015

United Way of Greater Los Angeles,
Antelope Valley
44907 10th Street West
Lancaster, CA 93534
Homeowners Associations

Mary Spive
Old Town Homeowners
P.O. Box 900724
Palmdale, CA 93590

Marta Williamson
Old Town Homeowners
P.O. Box 900724
Palmdale, CA 93590

Native American Representatives

Randy Guzman-Folkes
Chumash, Fernandeno Tataviam, Shoshone Paiute, Yaqui Tribes
4676 Walnut Avenue
Simi Valley, CA 93063

Daniel McCarthy, M.S., Director-CRM Department
San Manuel Band of Mission Indians (Serrano Tribe)
26569 Community Center Drive
Highland, CA 92346

Larry Ortega, Chairperson
Fernandeno Tataviam Band of Mission Indians
1019 2nd Street, Suite #1
San Fernando, CA 91240

Beverly Salazar Folkes
Chumash, Tataviam, Fernandeno Tribes
1931 Shadybrook Drive
Thousand Oaks, CA 91362

Robert F. Dorame
Gabrieleno-Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Andy Salas
Gabrieleno Band of Mission Indians-Kizh Nation
P.O. Box 393
Covina, CA 91723

Anthony Morales,
Gabrieleno-Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Sam Dunlap,
Gabrieleno-Tongva Nation
P.O. Box 86908
Los Angeles, CA 90086

Linda Candelaria
Gabrieleno-Tongva Tribe
1999 Avenue of the Stars
Suite 1100
Los Angeles, CA 90067

Conrad Acuna,
Gabrieleno-Tongva Tribe
1999 Avenue of the Stars
Suite 1100
Los Angeles, CA 90067

Delia Dominguez, Chairperson
Kitanemuk & Yowlumne Tejon Indians
115 Radio Street
Bakersfield, CA 93305

Robert Robinson, Co-Chairperson
Kern Valley Indian Council (Tubatulabal, Kawaiisu, Koso, Yokuts Tribes)
P.O. Box 401
Weldon, CA 93283
Chapter 5 • Distribution List

John Valenzuela, Chairperson  
San Fernando Band of Mission Indians  
P.O. Box 221838  
Newhall, CA 91322

Carla Rodriguez, Chairwoman  
Serrano & San Manuel Band of Mission Indians  
26569 Community Center Drive  
Highland, CA 92346

Service Clubs

Elks Lodge  
2705 E. Avenue Q  
Palmdale, CA 93550

Kimberly Dwight  
Equestrian Trails International  
2650 East Rushing Creek Trail  
Palmdale, CA 93550

Family History Center  
2120 E. Avenue R  
Palmdale, CA 93550

Kathy Falcon  
Girl Scout Desert Center  
40015 Sierra Highway, Suite B-100  
Palmdale, CA 93550

Elizabeth Brown  
High Desert Rotary Club  
2162 E. Palmdale Boulevard  
Palmdale, CA 93551

Masonic Lodge  
9845 E. Palmdale Boulevard  
Palmdale, CA 93551

Palmdale Masonic Lodge 769  
2231 E. Avenue Q  
Palmdale, CA 93550

Utilities

Antelope Valley- East Kern Water Agency  
6500 W. Avenue N  
Palmdale, CA 93551

Palmdale Water District  
2029 E. Avenue Q  
Palmdale, CA 93550

Affected Property Owners, Interested Parties Commenting at Project Information Meeting

Soya Restaurant  
38404 6th St East  
Palmdale, CA 93550

Jim Ledrobo  
40042 Bluebird Lane  
Palmdale, CA 93550

Domino Pizza Restaurant  
602 E. Palmdale Boulevard  
Palmdale, CA 93550

Guillermo Padilla  
540 Fairway Drive  
Palmdale, CA 93550
### Appendix A  CEQA Environmental Checklist

<table>
<thead>
<tr>
<th>07-LA-138</th>
<th>44.2/44.7</th>
<th>23620</th>
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</thead>
<tbody>
<tr>
<td>Dist.-Co.-Rte.</td>
<td>P.M/P.M.</td>
<td>E.A.</td>
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</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
</table>

### I. AESTHETICS: Would the project:

a) Have a substantial adverse effect on a scenic vista? [ ] [ ] [x] [ ]

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? [ ] [x] [ ] [ ]

c) Substantially degrade the existing visual character or quality of the site and its surroundings? [ ] [x] [ ] [ ]

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? [ ] [ ] [x] [ ]

### 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:
### Appendix A • CEQA Environmental Checklist

<table>
<thead>
<tr>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>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))?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>d) Result in the loss of forest land or conversion of forest land to non-forest use?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>

### 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:

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>a) Conflict with or obstruct implementation of the applicable air quality plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>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)?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>d) Expose sensitive receptors to substantial pollutant concentrations?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>e) Create objectionable odors affecting a substantial number of people?</td>
<td>☐</td>
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</tbody>
</table>

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

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
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</table>
### Appendix A • CEQA Environmental Checklist

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<th>No Impact</th>
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</thead>
<tbody>
<tr>
<td>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?</td>
<td>✗</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>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?</td>
<td></td>
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<tr>
<td>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?</td>
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<tr>
<td>e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?</td>
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<tr>
<td>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?</td>
<td></td>
<td></td>
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<td>✗</td>
</tr>
</tbody>
</table>

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

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | ✗ |                                       |                               |           |

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | ✗ |                                       |                               |           |

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

d) Disturb any human remains, including those interred outside of dedicated cemeteries? |                                       |                                       |                               | ✗         |

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

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

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

ii) Strong seismic ground shaking? |                                       |                                       |                               |           |
### Appendix A • CEQA Environmental Checklist

<table>
<thead>
<tr>
<th>Event Description</th>
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</thead>
<tbody>
<tr>
<td>iii) Seismic-related ground failure, including liquefaction?</td>
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<tr>
<td>iv) Landslides?</td>
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<tr>
<td>b) Result in substantial soil erosion or the loss of topsoil?</td>
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<tr>
<td>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?</td>
<td></td>
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<tr>
<td>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?</td>
<td></td>
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<tr>
<td>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?</td>
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</table>

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

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

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

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
Appendix A • CEQA Environmental Checklist

<table>
<thead>
<tr>
<th>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?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than Significant Impact</td>
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</table>

<table>
<thead>
<tr>
<th>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?</th>
</tr>
</thead>
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<tr>
<td>Less Than Significant Impact</td>
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</table>

<table>
<thead>
<tr>
<th>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?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than Significant Impact</td>
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<table>
<thead>
<tr>
<th>g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</th>
</tr>
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<tr>
<td>Less Than Significant Impact</td>
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</table>

<table>
<thead>
<tr>
<th>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?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than Significant Impact</td>
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</tbody>
</table>

IX. HYDROLOGY AND WATER QUALITY: Would the project:

<table>
<thead>
<tr>
<th>a) Violate any water quality standards or waste discharge requirements?</th>
</tr>
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<tbody>
<tr>
<td>Less Than Significant Impact</td>
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<td>□</td>
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</table>

<table>
<thead>
<tr>
<th>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)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than Significant Impact</td>
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<tr>
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<table>
<thead>
<tr>
<th>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?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than Significant Impact</td>
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<tr>
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</table>

<table>
<thead>
<tr>
<th>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?</th>
</tr>
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<tr>
<td>Less Than Significant Impact</td>
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<tr>
<th>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?</th>
</tr>
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<td>Less Than Significant Impact</td>
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<table>
<thead>
<tr>
<th>f) Otherwise substantially degrade water quality?</th>
</tr>
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<tbody>
<tr>
<td>Less Than Significant Impact</td>
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<tr>
<td>☒</td>
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</tbody>
</table>
### Appendix A • CEQA Environmental Checklist

<table>
<thead>
<tr>
<th>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?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>j) Inundation by seiche, tsunami, or mudflow</td>
<td></td>
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</tbody>
</table>

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

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

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

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

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

| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? |                               |                                       |                             |          |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? |                               |                                       |                             |          |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? |                               |                                       |                             |          |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? |                               |                                       |                             |          |
Appendix A • CEQA Environmental Checklist

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</table>

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

| ☐ | ☐ | ☐ | ☒ |

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

| ☐ | ☐ | ☐ | ☒ |

XIII. POPULATION AND HOUSING: Would the project:

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

| ☐ | ☐ | ☐ | ☒ |

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

| ☐ | ☐ | ☐ | ☒ |

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

| ☐ | ☐ | ☐ | ☒ |

XIV. PUBLIC SERVICES:

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

- Fire protection?:  

| ☐ | ☐ | ☐ | ☒ |

- Police protection?:  

| ☐ | ☐ | ☐ | ☒ |

- Schools?:  

| ☐ | ☐ | ☐ | ☒ |

- Parks?:  

| ☐ | ☐ | ☒ | ☐ |

- Other public facilities?:  

| ☐ | ☐ | ☐ | ☒ |

XV. RECREATION:

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

| ☐ | ☐ | ☒ | ☐ |
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<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

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

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | ☐ | ☐ | ☐ | ☒ |

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | ☐ | ☐ | ☐ | ☒ |

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | ☐ | ☐ | ☐ | ☒ |

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☐ | ☐ | ☐ | ☒ |

e) Result in inadequate emergency access? | ☐ | ☒ | ☐ | ☐ |

f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | ☐ | ☐ | ☐ | ☒ |

### XVII. TRIBAL CULTURAL RESOURCES: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | ☐ | ☐ | ☐ | ☒ |
### Appendix A • CEQA Environmental Checklist

#### XVIII. UTILITIES AND SERVICE SYSTEMS: Would the project:

<table>
<thead>
<tr>
<th></th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b)</td>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c)</td>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>d)</td>
<td>Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e)</td>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f)</td>
<td>Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g)</td>
<td>Comply with federal, state, and local statutes and regulations related to solid waste?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

#### XIX. 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?

<table>
<thead>
<tr>
<th></th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Does the project have impacts that are individually limited, but cumulatively considerable? (&quot;Cumulatively considerable&quot; 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)?</td>
<td></td>
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<tr>
<td>---------------------------------------------</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potentially Significant Impact</td>
<td>Less Than Significant with Mitigation</td>
<td>Less Than Significant Impact</td>
<td>No Impact</td>
<td></td>
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<tr>
<td>☐</td>
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<td>☒</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentially Significant Impact</td>
</tr>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>
Appendix B  Section 4(f) *de minimis* Finding
Draft Section 4(f) *de minimis* Finding

State Route 138 (5th Street East to 10th Street East) Improvements Project

City of Palmdale, Los Angeles County, CA

District 07 - LA – 138 - PM 44.2 TO PM 44.7
Sierra Highway – Avenue Q to Avenue R

Project EFIS: 0713000032
Project EA: 23620

May 2017

Prepared By: Andrea Reeves Engelmann Date: 5/5/2017
Andrea Reeves Engelmann, Senior Environmental Planner
Parsons

Reviewed By: Gregory King Date: 5/5/2017
Gregory King, Senior Project Planner
Parsons

Approved By: Dawn Kukla Date: 5/5/2017
Dawn Kukla, Office Chief
Division of Environmental Planning
Caltrans, District 7
Los Angeles, California

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 United States Code (U.S.C.) 327.
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## Acronyms and Abbreviations

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<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>APE</td>
<td>Area of Potential Effects</td>
</tr>
<tr>
<td>ASR</td>
<td>Archaeological Survey Report</td>
</tr>
<tr>
<td>AVTA</td>
<td>Antelope Valley Transit Authority</td>
</tr>
<tr>
<td>Caltrans</td>
<td>California Department of Transportation</td>
</tr>
<tr>
<td>CCP</td>
<td>Code of Civil Procedure</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>City</td>
<td>City of Palmdale</td>
</tr>
<tr>
<td>CPUC</td>
<td>California Public Utilities Commission</td>
</tr>
<tr>
<td>DOI</td>
<td>U.S. Department of the Interior</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>FTIP</td>
<td>Federal Transportation Improvement Program</td>
</tr>
<tr>
<td>HPSR</td>
<td>Historic Property Survey Report</td>
</tr>
<tr>
<td>HRER</td>
<td>Historical Resources Evaluation Report</td>
</tr>
<tr>
<td>I-5</td>
<td>Interstate 5</td>
</tr>
<tr>
<td>I-15</td>
<td>Interstate 15</td>
</tr>
<tr>
<td>LOS</td>
<td>Level of Service</td>
</tr>
<tr>
<td>LWCF</td>
<td>Land and Water Conservation Fund</td>
</tr>
<tr>
<td>mph</td>
<td>miles per hour</td>
</tr>
<tr>
<td>MUTCD</td>
<td>Manual on Uniform Traffic Control Devices</td>
</tr>
<tr>
<td>NHPA</td>
<td>National Historic Preservation Act</td>
</tr>
<tr>
<td>NPDES</td>
<td>National Pollutant Discharge Elimination System</td>
</tr>
<tr>
<td>NRHP</td>
<td>National Register of Historic Places</td>
</tr>
<tr>
<td>PA</td>
<td>Programmatic Agreement</td>
</tr>
<tr>
<td>ROW</td>
<td>right-of-way</td>
</tr>
<tr>
<td>RTP</td>
<td>Regional Transportation Plan</td>
</tr>
<tr>
<td>SER</td>
<td>Standard Environmental Reference</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
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</tr>
<tr>
<td>SHPO</td>
<td>State Historic Preservation Officer</td>
</tr>
<tr>
<td>SR</td>
<td>State Route</td>
</tr>
<tr>
<td>TASAS</td>
<td>Traffic Accident Surveillance and Analysis System</td>
</tr>
<tr>
<td>TCE</td>
<td>temporary construction easement</td>
</tr>
<tr>
<td>UPRR</td>
<td>Union Pacific Railroad</td>
</tr>
<tr>
<td>USDOT</td>
<td>United States Department of Transportation</td>
</tr>
</tbody>
</table>
Chapter 1  Introduction

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (U.S.C.) 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 recreational lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation project requiring the use of publicly owned land of a public park, recreational 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, refuge, or site) only if:

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

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

The proposed project is a transportation project that may receive federal funding and/or discretionary approvals through the U.S. Department of Transportation (USDOT) (i.e., Federal Highway Administration [FHWA]); therefore, documentation of compliance with Section 4(f) is required.

The FHWA Section 4(f) Policy Paper dated July 20, 2012 and the California Department of Transportation’s (Caltrans) Standard Environmental Reference (SER) guidance documents were utilized in preparation of this analysis.

This Section 4(f) analysis provides an overview of parks, recreational facilities, wildlife refuges, and historic properties found within 0.5 mile of the proposed project in accordance with the requirements of Section 4(f).
To determine whether Section 4(f) applies to a federal transportation project, two prerequisites are considered: (1) the project must involve a resource that is protected under the provisions of Section 4(f), and (2) there must be a use of that resource.

1.1 Project Description

The proposed project is located within the City of Palmdale (City) in the Antelope Valley on the southwestern border of the Mojave Desert, just north of the San Gabriel Mountains in northeastern Los Angeles County (Figure 1).

Caltrans District 7, in cooperation with the City as the sponsoring agency, proposes to widen State Route (SR) 138 (Palmdale Boulevard) between 5th Street East and 10th Street East in downtown Palmdale from two lanes three lanes in each direction, a distance of approximately 0.5 mile. Additionally, the project proposes to widen Sierra Highway between Avenue R and a point 500 feet south of Avenue Q from two lanes to three lanes in each direction, a distance of approximately 0.9 mile.

SR-138 is a conventional highway that functions as an east-west urban bypass north of the Los Angeles Basin that connects Interstate 5 (I-5) with Interstate 15 (I-15). Within the Palmdale City limits, SR-138 (Palmdale Boulevard) is functionally classified as an Urban Principal Arterial. SR-138 (Palmdale Boulevard) is the main east-west thoroughfare in Palmdale and a designated truck route, with a posted speed limit of 40 miles per hour (mph).

Between 5th Street East and 6th Street East, SR-138 (Palmdale Boulevard) is a six-lane divided highway with 12-foot-wide outside lanes, 11-foot-wide first and second through lanes, 10-foot-wide left turn lanes, and nonstandard 2-foot-wide right shoulders. Between 6th Street East and Sierra Highway, SR-138 (Palmdale Boulevard) is a four-lane divided highway with standard 12-foot-wide lanes and nonstandard 5-foot-wide right shoulders. Class II bicycle lanes exist along SR-138 (Palmdale Boulevard) between 6th Street East and Sierra Highway.

Between Sierra Highway and 10th Street East, SR-138 (Palmdale Boulevard) is a four-lane divided highway with standard 12-foot-wide through lanes, nonstandard 11-foot-wide left turn lanes, and standard 8-foot-wide right shoulders that are used for on-street parking. On-street parking is allowed on both sides of SR-138 (Palmdale Boulevard) east of Sierra Highway. There are no left shoulders provided along SR-138 (Palmdale Boulevard) within the project limits. East of Sierra Highway, SR-138 (Palmdale Boulevard) serves a highly concentrated general commercial area.
Sierra Highway is a major regional north-south transportation corridor that serves as a principal north-south arterial in Palmdale, with a posted speed limit of 55 mph. The existing highway consists of two lanes in each direction with a center median. In some locations, the center median has raised curbs; however, the center median is striped within the project limits. Sierra Highway is designated as a Los Angeles County Class I Bikeway and as a Palmdale Adopted Master Plan Bike Route.

A two-track Union Pacific Railroad (UPRR) and Metrolink rail line crosses SR-138 (Palmdale Boulevard) between 6th Street East and Sierra Highway (approximately 180 feet east of 6th Street East and 200 feet west of Sierra Highway). The rail crossing is equipped with an automatic gate arm, two curb-mounted flashing light signals, two median-mounted flashing light signals, railroad advanced warning signage, and pavement markings.

Three Antelope Valley Transit Authority (AVTA) bus routes pass through the project area – Routes 1, 2, and 10. Route 1 connects Palmdale Transportation Center with eastern Palmdale via SR-138 (Palmdale Boulevard), with buses running every 30 minutes on weekdays and every hour during the evening and on weekends. Route 2 runs from Antelope Valley Mall to southeastern Palmdale, via the section of SR-138 (Palmdale Boulevard) between 6th Street East and 10th Street East, also running every 30 minutes on weekdays and every hour during evening and weekend hours. Route 10 also runs between Palmdale Transportation Center and southeastern Palmdale via Palmdale Boulevard (SR 138), with buses every hour during morning and afternoon peak periods.

The project is included in the Draft Fiscal Year 2017 Federal Transportation Improvement Program (FTIP) (ID LA0G894) and in the 2016-2040 Regional Transportation Plan (RTP) (ID 1AL04). The project cost is estimated at $18.8 million, which includes $12.2 million for construction, $3 million for improvements associated with the railroad crossings, and $3.6 million for right-of-way (ROW) acquisition and utilities. Project construction is expected to start in early 2019 and be completed in 2020.
Figure 1. Project Vicinity Map
1.2 Purpose and Need

1.2.1 Need for the Project

The proposed project is needed because the SR-138 (Palmdale Boulevard)/Sierra Highway intersection presently experiences heavy congestion during both the AM and PM peak periods due to conflicting traffic movements, inadequate signal queue capacity, and railroad pre-emption. Without the proposed project, congestion at this intersection would continue to increase.

1.2.2 Purpose of Project

The primary purpose of the proposed project is to relieve traffic congestion and improve traffic operations at the SR-138 (Palmdale Boulevard)/Sierra Highway intersection by increasing the traffic capacities along adjacent segments of these two roadways and by improving railroad preemption. Improving railroad preemption would reduce vehicle queuing and improve traffic safety at the SR-138 (Palmdale Boulevard) at-grade UP RR and Metrolink crossing between 6th Street East and Sierra Highway. The project also would improve safety along SR-138 (Palmdale Boulevard) and Sierra Highway by increasing the number of travel lanes, adding left-turn and right-turn pockets where needed, widening the shoulders, and adding bicycle lanes. The project would be designed to implement the principles of “Complete Streets.” The project would better accommodate anticipated traffic increases, thereby minimizing delays and potential safety hazards. The project is being proposed in the context of several other improvements to local roads and highways that, together, are intended to substantially improve local traffic conditions.

1.3 Project Alternatives

Two project alternatives are being analyzed under this technical study, including the No Build Alternative and one Build Alternative.

1.3.1 No Build Alternative

Under the No Build Alternative, roadway improvements associated with the proposed project would not be constructed. There would be no change in existing traffic facilities along SR-138 (Palmdale Boulevard) or Sierra Highway. Over time, traffic volumes would continue to increase, resulting in more traffic congestion and delay. The No Build Alternative does not meet the purpose of or need for the project. There would be no cost associated with this alternative.
1.3.2 Build Alternative

The Build Alternative proposes to widen SR-138 (Palmdale Boulevard) between 5th Street East and 10th Street East from two lanes to three lanes in each direction and widen Sierra Highway from two lanes to three lanes in each direction between Avenue R and a point 500 feet south of Avenue Q.

Between 5th Street East and 6th Street East, the design proposes three lanes in each direction along SR-138 (Palmdale Boulevard). Roadway widening is proposed to provide 5-foot-wide right shoulders, which would be used as Class II bicycle lanes. Six-foot-wide sidewalks are proposed on both sides of SR-138 (Palmdale Boulevard) between 5th Street East and 6th Street East. Additionally, the westbound and eastbound left-turn pockets would be maintained.

Between 6th Street East and Sierra Highway, roadway widening is proposed to provide three standard 12-foot-wide lanes in each direction, 8-foot-wide right shoulders, 2-foot-wide left shoulders, and 10-foot-wide sidewalks. The right shoulders would be used as Class II bicycle lanes. The design proposes to add a right-turn pocket along westbound SR-138 (Palmdale Boulevard) at the 6th Street East intersection, as well as double left-turn pockets along eastbound SR-138 (Palmdale Boulevard) at the Sierra Highway intersection. The right-turn pocket along eastbound SR-138 (Palmdale Boulevard) at the Sierra Highway intersection would be maintained.

Between Sierra Highway and 10th Street East, roadway widening is proposed to provide two nonstandard 11-foot-wide lanes and a standard 12-foot-wide outside lane in each direction with nonstandard 2-foot-wide right shoulders. Seven-foot-wide sidewalks are proposed on both sides of SR-138 (Palmdale Boulevard) between Sierra Highway and 10th Street East. Additionally, the westbound and eastbound left-turn pockets would be maintained.

Sierra Highway would be widened to three lanes in each direction between Avenue R and a point 500 feet south of Avenue Q. Double left-turn lanes and a right-turn lane are proposed in the northbound and southbound direction at the Sierra Highway and SR-138 (Palmdale Boulevard) intersection. The existing on-street parking along northbound Sierra Highway between SR-138 (Palmdale Boulevard) and Avenue Q6 would be maintained. Additionally, the project proposes to extend the existing Class I bicycle path, which runs along the west side of Sierra Highway, southerly to provide connectivity to Avenue R.
To improve safety for pedestrians and bicycles and eliminate traffic queuing on the railroad tracks, the traffic and railroad signal controllers would be upgraded and interconnected to provide an advanced pre-emption and special sequential signal phasing. The advanced pre-emption would allow a greater amount of time for traffic to clear the crossing in advance of an approaching train. The special sequential signal phasing would allow northbound and southbound through movements during pre-emption. The project would also install four-quadrant flashing lights and pedestrian gates on the approaches to each of the sidewalks that cross the railroad track to improve the safety of pedestrian pathways.

The project would enhance safety by providing improvements to the following existing features:

- Traffic signal operations at the railroad crossing would be upgraded from the existing condition of “all red flash” operation to “special sequential signal phasing.” This upgrade would reduce vehicle queuing for signal phases that do not conflict with the railroad crossing and eliminate the potential for accidents to occur due to conflicting vehicular movements during all red flash.
- Four-quadrant flashing lights and pedestrian gates would be installed on each approach of the sidewalks crossing the railroad to improve the safety of the pedestrian pathways.
- The median islands at the railroad crossing approaches would be widened and heightened to provide safe channelization to be consistent with the Manual on Uniform Traffic Control Devices (MUTCD) and California Public Utilities Commission’s (CPUC) General Order 75-D.

Implementation of the Build Alternative would require two full parcel acquisitions. The two full parcel acquisitions are a Domino’s Pizza and Soya, a small ethnic restaurant; these buildings would be demolished. A roadway easement from UPRR would be required for widening SR-138 (Palmdale Boulevard) between 6th Street East and Sierra Highway and for widening Sierra Highway, just north of Avenue R. Several partial acquisitions and temporary construction easements (TCEs) would also be required along SR-138 (Palmdale Boulevard) and Sierra Highway.

The Build Alternative would alleviate traffic congestion by increasing roadway and intersection capacity. The project would substantially improve the 2040 intersection LOS at the SR-138 (Palmdale Boulevard) intersection with Sierra Highway during the evening peak hour from LOS F to B. The project also would improve the evening peak-hour LOS at the SR-138 (Palmdale Boulevard) intersection with 10th Street East from LOS F to D. The increased roadway and intersection capacity are also expected to reduce the accident
rate within the project area. The proposed improvements at the railroad crossing, as well as reduction in congestion at the SR-138 (Palmdale Boulevard) intersection with Sierra Highway, would reduce incidences of traffic queuing on the railroad tracks.
2.1 Overview

This evaluation identifies the Section 4(f) resources in the proposed project study area, describes the nature and extent of the potential effects on these properties, evaluates alternatives that would avoid the use of Section 4(f) resources, and describes measures to minimize harm to the affected resources.

2.2 Determining Section 4(f) Resources

There are two steps in determining whether Section 4(f) applies to a project:

1. The project must involve a resource that is protected by the provisions of Section 4(f).
2. There must be a “use” of that resource.

Protected resources include:

- Public parks
- Recreational areas of national, state, or local significance
- Wildlife or waterfowl refuges
- Historic sites of national, state, or local significance

2.3 Section 4(f) Use

As defined in 23 Code of Federal Regulations (CFR) 774.17, a “use” of a protected resource occurs when any of the following conditions are met:

- Direct Use: Land is permanently incorporated into a transportation facility.
- Temporary Use: There is a temporary occupancy of land that is adverse in terms of the statute’s preservation purpose as determined by the criteria in 23 CFR 774.13(d).
- Constructive Use: There is a constructive use of a Section 4(f) property as determined by the criteria in 23 CFR 774.15.

2.3.1 Direct Use

A direct use of a Section 4(f) resource takes place when part or all of the property designated for protection under Section 4(f) is permanently incorporated into a transportation project (23 CFR Section 774.17). This may occur as a result of partial or full...
acquisition of a fee simple interest, permanent easements, or temporary easements that exceed the regulatory limits noted below (23 CFR Section 771.135).

### 2.3.2 Temporary Use

A temporary use of a Section 4(f) property occurs when there is temporary occupancy of a protected property for construction-related activities and when that temporary occupancy is considered adverse in terms of the preservationist purposes of the Section 4(f) statute.

If the following five conditions set forth in 23 CFR Section 774.13(d) can be satisfied, Section 4(f) does not apply.

1. The duration of the occupancy must be temporary (i.e., shorter than the period of construction) and does not involve a change in ownership of the property.
2. The scope of the work must be minor, with only minimal changes to the protected resource.
3. There are no anticipated permanent adverse physical impacts on the protected resource and no temporary or permanent interference with the activities or purpose of the resource.
4. The land being used must be fully restored to a condition that at least equals the condition that existed prior to the proposed project.
5. There must be documented agreement by the appropriate officials having jurisdiction over the Section 4(f) resource regarding the above conditions.

### 2.3.3 Constructive Use

A constructive use of a Section 4(f) resource happens when a transportation project does not permanently incorporate land from the resource in the transportation facility, but the proximity of the project to the Section 4(f) property results in adverse proximity impacts (i.e., noise, vibration, visual, access, and/or ecological impacts) so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired (23 CFR Section 774.15). Substantial impairment occurs only if the protected activities, features, or attributes of the Section 4(f) property are substantially diminished by the indirect adverse impacts of the project (23 CFR Section 774.15(a)). This determination is made through the following process:

- Identification of the current activities, features, or attributes of the resource that may be sensitive to proximity impacts
- Analysis of the potential proximity impacts of the project on the resource
2.4  de minimis Impacts

2.4.1 Determining de minimis Impacts to Section 4(f) Resources

A de minimis impact to a Section 4(f) resource is a nominal impact that would not be adverse to the activities, features, or attributes of the Section 4(f) resource. A de minimis impact finding can be made for some direct uses and temporary uses; however, a de minimis impact finding cannot be made for constructive uses.

Under FHWA regulations (23 CFR Section 774.13(d)), temporary occupancy, including TCEs, and other temporary project activities are typically considered de minimis impacts if they do not exceed the five thresholds discussed above in Section 2.3.2.

Under Section 4(f), de minimis impacts to historic resources would be either no impact to the property or a finding of “no adverse effect” under 36 CFR Part 800. For other Section 4(f) protected resources, including publicly owned parks, recreational areas, and wildlife and waterfowl refuges, de minimis impacts would be defined as those impacts that do not adversely affect the activities, features, or attributes of the Section 4(f) resource.

The de minimis impact finding is based on the level of impact, including any avoidance, minimization, and mitigation or enhancement measures that are included in the project to address the Section 4(f) use. De minimis impact findings are expressly conditioned upon the implementation of measures that are relied on to reduce the impact to a de minimis level.

As discussed below in Sections 2.4.2 through 2.4.4, to reach a de minimis impact finding for properties where a use would occur, the official(s) with jurisdiction over the Section 4(f) resource must provide written concurrence to Caltrans that the project would not adversely affect the activities, features, or attributes that qualify the property for protection under Section 4(f). In addition, the public must be afforded the opportunity to review and comment on the effects of the project on the identified Section 4(f) resource(s).

2.4.2 Coordination and Concurrence on de minimis Findings

As discussed above, regulations require coordination with officials that have jurisdiction over park and historic resources that may be used by the project prior to approval of the project.
Section 4(f) impact findings. Regulations require written concurrence from these officials prior to:

- Making *de minimis* impact findings
- Applying an exception for temporary occupancies
- Applying an exception for transportation enhancement and mitigation activities

For parks, recreational areas, and wildlife and waterfowl refuges, the officials with jurisdiction over the property must be informed of the intent to make a *de minimis* impact determination, after which an opportunity for public review and comment must be provided. Information on coordination with each jurisdiction is provided in detail in Chapter 4.

### 2.4.3 Public Meeting to Disclose Section 4(f) *de minimis* Finding

After initial formal consultation is conducted with the official representing each potentially impacted resource, a meeting must be held to provide the public with an opportunity to review and comment on the draft environmental document. To facilitate public disclosure, notice of the public meeting must be circulated informing agencies and the general public of the time and place of the meeting, project description, and proposed *de minimis* findings. During the public meeting and circulation of the draft environmental document, the public must be afforded the opportunity to review the environmental document, as well as comment on the effects of the project on Section 4(f) resources along the project corridor.

### 2.4.4 Caltrans *de minimis* Impact Finding for the Proposed Project

When seeking a *de minimis* impact determination for a use of Section 4(f) resources, local agencies work with Caltrans to complete the analysis, but it is Caltrans that is ultimately responsible for making the *de minimis* impact finding.

After considering any comments received from the public during circulation, and whether the official concurs in writing that the project will not adversely affect the Section 4(f) activities, features, or attributes, then Caltrans finalizes the *de minimis* impact determination on behalf of FHWA.
2.5 Section 6(f) Resources

In addition to resources protected under Section 4(f), this project is also required to analyze potential impacts to properties protected or enhanced with Land and Water Conservation Fund (LWCF) grants. Section 6(f)(3) of the LWCF Act (16 U.S.C. Section 4601-4) contains provisions to protect federal investments in park and recreational resources and the quality of those resources. State and local governments often obtain grants through the LWCF Act to acquire or make improvements to parks and recreational areas. Section 6(f) of the LWCF Act prohibits the conversion of property acquired or developed with LWCF grants to a nonrecreational purpose without the approval of the DOI’s National Park Service. Section 6(f) further directs DOI to assure that replacement lands of equal value, location, and usefulness are provided as conditions to such conversions. Consequently, where conversion of Section 6(f) lands are proposed for roadway and highway projects, replacements will be necessary.

To determine whether LWCF funds were involved in the acquisition or improvement of Section 4(f) resources, database records of all LWCF-funded parks within Los Angeles County were consulted in November 2016 to determine properties pursuant to Section 6(f). This research revealed that no LWCF funds were utilized for improvements at any sites within 0.5 mile of the proposed project; therefore, there would be no effect on LWCF-funded parks or recreational resources.

2.6 Measures to Minimize Harm

As discussed above, there are no prudent and feasible alternatives that would avoid all Section 4(f) resources. The final environmental document must include sufficient supporting documentation for any measures to minimize harm that were applied to the project to make the *de minimis* finding (see 23 CFR 774.7(b)).

As stated in the 2012 FHWA Policy Paper, a *de minimis* finding does not require the traditional step of including all possible planning to minimize harm because avoidance, minimization mitigation, or enhancement measures have been included as part of the determination.
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Chapter 3  List and Description of Section 4(f) Properties

3.1 Identification of Section 4(f) Properties

As noted above, resources subject to Section 4(f) consideration include publicly owned lands such as public parks; recreational areas of national, state, or local significance; wildlife and waterfowl refuges; and historic sites of national, state, or local significance.

Resources in the project study area were identified if they were:

- Existing publicly owned recreational and park resources, including local, regional, and State resources;
- Publicly owned wildlife and waterfowl refuges and conservation areas;
- Existing public bicycle, pedestrian, and equestrian trails; or
- National Register of Historic Places (NRHP) listed or eligible historic sites.

Research was conducted to identify publicly owned parks, recreational areas, wildlife and waterfowl refuges, and land from a historic site within 0.5 mile of the project alternatives.

Based on this research, there are six publicly owned parks within 0.5 mile of the project corridor that qualify as Section 4(f) resources. There are no schools with publicly accessible facilities. As discussed below in Section 3.3, Historic and Archaeological Sites, there is one historic property and no archaeological sites within 0.5 miles of the project. As stated previously, no Section 6(f) resources exist within the project study area.

A summary of the number of identified resources is provided in Table 1. A map of public parks and public schools with recreational facilities is provided as Figure 2.

<table>
<thead>
<tr>
<th>Type of Property</th>
<th>Geographic Location to Project</th>
<th>Number of Properties Identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Parks</td>
<td>Within 0.5 mile</td>
<td>6</td>
</tr>
<tr>
<td>Public Schools with Recreational Areas</td>
<td>Within 0.5 mile</td>
<td>0</td>
</tr>
<tr>
<td>Trails</td>
<td>Within 0.5 mile</td>
<td>0</td>
</tr>
<tr>
<td>Wildlife and Waterfowl Refuges</td>
<td>Within 0.5 mile</td>
<td>0</td>
</tr>
<tr>
<td>NRHP-Eligible Historic Sites</td>
<td>Within 0.5 mile</td>
<td>1</td>
</tr>
<tr>
<td>NRHP-Eligible Archaeological Sites</td>
<td>Within 1 mile</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Parsons, 2016.
Chapter 3 List and Description of Section 4(f) Properties

Figure 2. Section 4(f) Public Parks and Recreation Lands

SR-138 (5th Street East to 10th Street East) Improvements Project Section 4(f) de minimis Finding
3.2 Public Parks and Recreational Facilities

Six publicly owned lands that contain parks and recreational areas are within 0.5 mile of the project corridor, as shown in Figure 2. Of these six properties, three are outdoor parks and three are recreational facilities. Table 2 provides a summary of all six properties by type, including information on location, ownership, facilities available at each property, and whether the property is subject to Section 4(f) protection. The locations of the schools and parks are shown in Figure 2.

Table 2. Parks and Recreational Facilities within the Study Area

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Location</th>
<th>Current Jurisdiction/Ownership</th>
<th>Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert St. Clair Parkway</td>
<td>Sierra Highway from Avenue Q to Avenue R</td>
<td>City of Palmdale</td>
<td>12-foot-wide trail, extending along the west side of Sierra Highway.</td>
</tr>
<tr>
<td>Courson Park</td>
<td>Northeast corner of 10th Street East and Avenue Q-12</td>
<td>City of Palmdale</td>
<td>Swimming pool, basketball courts, sand volleyball, play lots, spray pool, field house with restrooms and equipment checkout, gazebo, and picnic areas.</td>
</tr>
<tr>
<td>Poncitlan Square</td>
<td>38315 9th Street East</td>
<td>City of Palmdale</td>
<td>Native vegetation and landscaping, rose garden, and bandstand pavilion/gazebo.</td>
</tr>
<tr>
<td>Hammack Activity Center</td>
<td>815 East Avenue Q-6</td>
<td>City of Palmdale</td>
<td>30,000-square-foot indoor recreation facility containing a gymnasium area, lounge area, food court, and table games. Boys and Girls Club of America has developed an additional 4,000 square feet of this facility, leased to it by the City.</td>
</tr>
<tr>
<td>Larry Chimbole Cultural Center</td>
<td>704 E. Palmdale Boulevard</td>
<td>City of Palmdale</td>
<td>19,000-square-foot facility containing an auditorium with stage and kitchen, and three meeting rooms.</td>
</tr>
<tr>
<td>Palmdale Senior Center</td>
<td>1002 E. Avenue Q-12</td>
<td>City of Palmdale</td>
<td>Kitchen, multi-use hall, meeting room, and lounge.</td>
</tr>
</tbody>
</table>

Source: Parsons, 2016.
3.3 Historic and Archaeological Sites

Many efforts have been undertaken to identify historic properties, including preparation of a Historical Resources Evaluation Report (HRER) and an Archaeological Survey Report (ASR) to support the findings of the project’s Historic Property Survey Report (HPSR). These studies included a cultural resource records and literature search; Native American consultation; a reconnaissance survey and intensive pedestrian (Phase I) survey of the project Area of Potential Effects (APE); archival research; and outreach to historical societies and local government agencies.

The APE contains 13 historic-age built environment cultural resources that were evaluated and found not eligible for the NRHP; therefore, they are not considered Historic Properties under Section 106 of the National Historic Preservation Act (NHPA). The rest of the built environment resources within the APE do not meet the minimum requirements, as outlined in Attachment 4 of the Caltrans Section 106 Programmatic Agreement (PA), to warrant evaluation and are exempt properties.

There are no historic archaeological resources present within the project APE; therefore, no historic archaeological sites were found eligible for listing in the NRHP.

The California SHPO concurred with Caltrans identification and evaluation findings on December 22, 2016, that 13 resources were determined not eligible for the NRHP. The SHPO did not have sufficient information to concur with the Caltrans finding of ineligibility for one resource, the Union Pacific Railroad (UPRR)/Southern Pacific Railroad (SPRR) (P-19-180638) and as a result recommended that Caltrans assume eligibility of the railroad pursuant to Stipulation VIII.C(4) of the Section 106 PA because special circumstances preclude the railroad’s complete evaluation, including restricted access, its large property size, and a limited potential for effects from this project only. On January 3, 2017, Caltrans notified FHWA that Caltrans will assume NRHP eligibility for the UPRR/SPRR (P-19-180638). Although the historic railroad line is adjacent to the roadway and near the proposed sidewalk/bike path, nearby culvert replacement, and signal/gate improvements, these improvements would not affect the historic railroad, nor any part of what would be considered to be character-defining features associated with the railroad. Therefore, there would be No Historic Properties Affected as a result of this project. The Build Alternative would not use any of Section 4(f) historic properties.
Chapter 4  Impacts on Section 4(f) Properties

This section describes which Section 4(f) resources may be affected if the proposed project is implemented.

Although not discussed in detail in this chapter, every Section 4(f) resource within the study area was analyzed for potential direct and indirect impacts under the Build Alternative. Of the six public parks and recreational facilities discussed in Chapter 3, only one park or recreational facility would have direct impacts under the Build Alternative.

A summary of potential effects to Section 4(f) properties is provided in Table 3. Additional analysis follows for the resource with the potential to be impacted by the Build Alternative. An assessment has been made as to whether any permanent or temporary occupation of the property would occur, and whether the proximity of the project would cause any access, visual, air quality, noise, vibration, biological, or water quality effects that would substantially impair the features or attributes that qualify the resource for protection under Section 4(f).

Table 3. Section 4(f) Impact Summary for Build Alternative

<table>
<thead>
<tr>
<th>Property</th>
<th>Direct Use?</th>
<th>Temporary Use?</th>
<th>Constructive Use?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert St. Clair Parkway</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>0.83 acre of permanent impact (direct use); 0.23 acre of temporary impact</td>
</tr>
<tr>
<td>Courson Park</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Poncitlan Square</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Hammack Activity Center</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Larry Chimbole Cultural Center</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Palmdale Senior Center</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Total Temporary Impact Area</td>
<td></td>
<td></td>
<td></td>
<td>0.23 acre</td>
</tr>
<tr>
<td>Total Permanent Impact Area</td>
<td></td>
<td></td>
<td></td>
<td>0.83 acre</td>
</tr>
</tbody>
</table>

Source: Parsons, 2016.

The analysis of potential effects on Section 4(f) resources that follows includes discussion of how the proposed project would affect each Section 4(f) resource and whether the effects would result in a use of the resources.
4.1 Potential Section 4(f) Uses by the No Build Alternative

There would be no uses of park, recreational, or historic resources subject to Section 4(f) provisions with the No Build Alternative. No direct use, temporary use, or constructive use of Section 4(f) resources would be required for the No Build Alternative.

4.2 Potential Section 4(f) Uses by the Build Alternative

The following sections describe each resource where a potential use may occur.

The Build Alternative would require direct use of the Section 4(f) resource and temporary use of the Section 4(f) resource. The Build Alternative would not require constructive use of any Section 4(f) resource.

4.3 Robert St. Clair Parkway

4.3.1 Description of Robert St. Clair Parkway

Robert St. Clair Parkway is located along Sierra Highway from Avenue Q to Avenue R. The total acreage of the parkway is approximately 8.7 acres. The parkway includes a 12-foot-wide concrete trail that forms a meandering bikeway. The trail extends along the west side of Sierra Highway from Avenue Q to SR-138 (Palmdale Boulevard) and from SR-138 (Palmdale Boulevard) to 250 feet south of Avenue Q-12. The parkway/path is owned by the City. It is designated primarily for passive recreation use and is open to the public.

4.3.2 Project Effects at Robert St. Clair Parkway

No Build Alternative

Because there are no project activities proposed under the No Build Alternative, no impacts to Robert St. Clair Parkway would result from this alternative.

Build Alternative

Direct Use

The Build Alternative would require acquisition of 0.83 acre of Robert St. Clair Parkway, both north and south of SR-138 (Palmdale Boulevard) for widening Sierra Highway (see Figures 3 and 4). This constitutes a very small portion of the parkway’s acreage, and the existing use and access of the parkway would not be affected; therefore, no facilities, functions, or activities of the park are adversely affected. Access to the parkway is anticipated to be maintained at all times during project construction and operation.
Figure 3. Impacts to Robert St. Clair Parkway
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Figure 4. Pre- and Post-Construction View of Robert St. Clair Parkway
**Temporary Use**
The Build Alternative would require partial temporary acquisition of 0.23 acre of land from Robert St. Clair Parkway for construction activities such as staging and equipment storage. Construction activities could cause temporary visual, air quality, and noise impacts on Robert St. Clair Parkway. All other parks and recreational facilities are sufficiently distant from the construction footprint that impacts from construction activities would not result. Measures would be implemented to avoid or minimize visual, air quality, and noise impacts on Robert St. Clair Parkway.

**Visual**
Temporary visual impacts during construction would be typical of roadway construction projects, including construction fencing, construction equipment, material stockpiles, and vegetation removal, which would not substantially disturb the parkway’s existing landscape aesthetic because much of the parkway and its surrounding areas consist of hardscape features. Temporarily disturbed areas would be returned to pre-project conditions once construction is completed; therefore, the minor visual changes associated with construction of the Build Alternative would not be considered a Section 4(f) constructive use.

**Noise**
Temporary noise impacts are also expected as a result of construction of the Build Alternative. However, Robert St. Clair Parkway is currently subject to noise impacts due to its proximity to the existing SR-138 (Palmdale Boulevard) and Sierra Highway, and due to the parkway’s location in an urban environment. Once the proposed project is in operation, it would not inhibit existing recreational functions in the park that are already subject to noise impacts.

**Constructive Use**
The Build Alternative would not result in a constructive use of Robert St. Clair Parkway. An indirect impact would be considered a constructive use under Section 4(f) if the impact were so severe that the public did not have access to the park and/or recreational activities occurring within the park were severely affected by the project’s impacts. Potential indirect impacts related to the Build Alternative are discussed below.

**Accessibility**
Access to Robert St. Clair Parkway would be maintained at all times during construction and operation of the Build Alternative. During construction, a TCE would be utilized for construction activities such as staging and equipment storage.
Visual
There are no expected visual impacts during construction or operation of the proposed Build Alternative. This is because the project would be typical of roadway construction projects, including construction fencing, construction equipment, material stockpiles, and vegetation removal, which would not substantially disturb the parkway’s existing landscape aesthetic because most of Robert St. Clair Parkway and its surrounding areas are hardscape features. Temporarily disturbed areas would be returned to pre-project conditions once construction is completed; therefore, any minor visual changes associated with construction of the Build Alternative would not be considered a Section 4(f) constructive use.

Air Quality and Noise
Indirect air quality and noise impacts as a result of the Build Alternative are not expected to result in a constructive use of Robert St. Clair Parkway. The parkway is currently subject to indirect air quality and noise impacts due to its proximity to the existing SR-138 (Palmdale Boulevard) and Sierra Highway, and due to the park’s location in a built-out urban environment. The incremental increase in noise and air quality impacts during construction of the proposed project would not inhibit existing recreational functions in the park that are already subject to noise and air quality. The proposed project would not result in a Section 4(f) constructive use of the park due to indirect noise and air quality impacts.

Vegetation and Wildlife
Robert St. Clair Parkway is located in a built-out urban area; there are no wildlife corridors or substantial vegetation communities adjacent to the park that would be indirectly impacted by the project. There is, however, the possibility that removal of ornamental trees from the project APE could directly or indirectly affect migratory birds and their nests and eggs, if present in the trees; however, these trees are currently in close proximity to busy city streets, and with the higher density of trees as options for migratory birds located within and adjacent to the park, removal of the trees would most likely not impact any birds. Therefore, there would be no vegetation or wildlife impacts at the park resulting in a Section 4(f) constructive use.

Water Quality
Construction of the Build Alternative does not have the potential to affect water quality or water resources because the project is not located near rivers, streams, bays, inlets, lakes, or drainage sloughs. Construction activities would comply with the City of Los Angeles National Pollutant Discharge Elimination System (NPDES) permit.
4.3.3 Applicability of Section 4(f)

The Build Alternative would result in direct and temporary use of Robert St. Clair Parkway, both north and south of SR-138 (Palmdale Boulevard), for widening Sierra Highway. The improvements provided by the proposed project would include permanent acquisition of 0.83 acre of the parkway (0.09 percent of the parkway’s pre-project acreage), and temporary use of 0.23 acre of Robert St. Clair Parkway. No constructive use of this resource is anticipated under the Build Alternative.

According to FHWA guidance provided in the Environmental Review Toolkit for Section 4(f) Evaluations, to be considered a de minimis impact, the amount of land to be acquired from any Section 4(f) site must not exceed 10 percent of the site. Given that this direct use is below the threshold set forth in the statute, the proposed 0.83-acre acquisition at Robert St. Clair Parkway is eligible to be considered as a de minimis impact. This acquisition would not adversely affect the activities, features, or attributes of Robert St. Clair Parkway.

In addition, the Build Alternative would result in temporary use of 0.23 acre of Robert St. Clair Parkway; however, the work is minor in scope, and there are no anticipated permanent adverse physical effects or other interference with the activities or functions of the resource. Temporarily disturbed areas would be fully restored to pre-project conditions once temporary impacts are complete. In addition, public access to the park would not be reduced as a result of operation of the project, and any minor effects on the resource would be minimized, mitigated, and avoided, resulting in a de minimis determination of the resource. In summary, the Build Alternative would affect one Section 4(f) property; however, all impacts are considered de minimis. Therefore, no avoidance alternatives are required.

Given that the five conditions set forth in 23 CFR Section 774.13(d) are satisfied, and the proposed acquisition and temporary use proposed would not adversely affect the activities, features, or attributes of Robert St. Clair Parkway, Section 4(f) does not apply.

4.3.4 Documentation of Consultation and Coordination

The Project Development Team which comprises of Caltrans staff, City Department of Public Works staff, and the consultant staff has discussed the need to use a small portion of Robert St. Clair Parkway to accommodate the proposed improvements. The Project Development Team described the proposed designs and the proposed project impacts, and prepared project details for construction work that would occur near Robert St. Clair Parkway. Staff members from the City Department of Public Works have coordinated with the Director of the City Parks and Culture Department regarding potential project impacts.
and potential avoidance and minimization measures to be implemented during construction at Robert St. Clair Parkway. The City Department of Public Works has notified the City of Palmdale Parks and Culture Department of Caltrans intent to issue a *de minimis* finding. The City’s formal concurrence with the *de minimis* finding will be made prior to construction.
Chapter 5  Avoidance, Minimization, Mitigation, and Enhancement Measures

5.1 Common Measures to Minimize Harm

Several common measures have been identified during development of the technical studies to avoid, minimize, or mitigate potential project impacts to, or otherwise enhance, Section 4(f) properties.

Common Air Quality Measures
The Contractor shall implement one or more of the following measures:

- Operate equipment with engines newer than 1996.
- Retrofit existing equipment with control devices (e.g., exhaust oxidation catalyst).
- Use cleaner fuels such as liquid natural gas, compressed natural gas, or aqueous diesel fuel, where feasible.
- Prohibit truck idling in excess of 10 minutes, whenever practicable.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions by applying water or by presoaking.

Common Vegetation and Wildlife Measures
A small portion of public land would be obtained to expand the road ROW. There are mature trees within the ROW that would be removed and may contain nests of migratory birds. Removal of the trees would not occur during the nesting/fledging time frame, which typically is between February 1 and August 31. Should tree removal be necessary during the nesting/fledging time frame, a qualified biologist will perform a survey prior to tree removal to determine if active nests are present. If an active nest is identified, the tree will not be removed until the nest becomes inactive and/or the birds have fledged. Trees that are removed from the project area will be replanted at the rate determined by the City and Caltrans District Landscape Architect. At a minimum, use a replacement ratio of 1:1, unless a higher ratio is required by the City of Plamdale, and focus plantings on drought-tolerant and native species of trees and shrubs to the extent feasible. The City of Plamdale Department of Public Works will be responsible to carry out the replanting of trees and the Department of Parks and Culture will assume the maintenance responsibility.
Common Water Quality Measures
The project shall conform to the requirements of the Caltrans’ NPDES Statewide Storm Water Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003), adopted by the State Water Resources Control Board on July 1, 2013, and any subsequent permit in effect at the time of construction.

5.2 Specific Measures to Minimize Harm by Specific Section 4(f) Property

Along with the common measures described above, indirect impacts would be reduced to de minimis levels through implementation of specific measures at potentially impacted Section 4(f) resources as discussed below.

Robert St. Clair Parkway
The City and Metro will appropriate the project improvement funds to pay sufficient (just) compensation (Code of Civil Procedure [CCP] 1263.320), or land, or both to enable the operating entity to replace the parkland and the facilities thereon. The substitute land will be of comparable characteristics and of substantially equal size, located in an area that would allow for use by generally the same people who use the existing parkland and facilities. The cost will include the land and the cost of converting the land into parkland, including placement of substitute facilities thereon if a functional replacement is chosen. The final determination of what constitutes a functional replacement lies with Caltrans and the affected agencies. Negotiations with the officials with jurisdiction, City of Palmdale Parks and Culture Department regarding impacts to Robert St. Clair Parkway, will be conducted. To fulfill all requirements of Section 4(f), the City’s Parks and Culture Department, will provide written concurrence with the de minimis finding following the environmental document’s public comment period.

Attachment A to this Section 4(f) report presents the coordination letter Caltrans sent to the City’s Parks and Culture Department on May 2, 2017.
Chapter 6 References

23 CFR 774: Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f)).


Air Quality Study Report, February 2017

Archaeological Survey Report, October 2016

Historic Property Survey Report, October 2016

Historical Resources Evaluation Report, October 2016

Natural Environment Study (Minimal Impacts), September 2016

Noise Assessment Technical Memorandum, August 2016
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Chapter 7  List of Preparers

Parsons
Andrea Reeves Engelman, Senior Environmental Planner. B.S. Arizona State University; 16 years of environmental planning experience. Contribution: Contributing author of the environmental document and Section 4(f) Evaluation.


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May 2, 2017

Ms. Keri Smith
Director, Recreation and Culture Department
City of Palmdale
38260 10th Street East
Palmdale, CA 93550

Dear Ms. Smith,

The California Department of Transportation (Caltrans) District 7, in cooperation with the City of Palmdale, is initiating issuance of a joint California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) Initial Study/Environmental Assessment (IS/EA) for the proposed State Route (SR ) 138 Improvements Project. The project proposes to widen SR 138 (Palmdale Boulevard) between 5th Street East and 10th Street East from 2 lanes to 3 lanes in each direction, a distance of about 0.6 mile. Additionally, the project proposes to widen Sierra Highway from 2 lanes to 3 lanes in each direction between Avenue R and a point 500 feet south of Avenue Q, a distance of about 0.9 mile (Figure 1). The project would relieve congestion at the SR 138/Sierra Highway intersection. The project also would reduce vehicle queuing (traffic congestion) across the Union Pacific Railroad and Metrolink tracks located between 6th Street East and Sierra Highway, improving safety at this location.

Effective July 1, 2007, the Federal Highway Administration (FHWA) assigned, and Caltrans assumed, all of FHWA’s responsibilities under NEPA for projects on California’s State Highway System (SHS) and for federal-aid local streets and roads projects, pursuant to 23 CFR 773. Caltrans also assumed all of FHWA’s responsibilities for environmental coordination and consultation under other federal environmental laws pertaining to the review or approval of projects. Caltrans is deemed to be acting as the FHWA with respect to the environmental review, consultation, and other actions required under those responsibilities.

The purpose of this letter is to inform you that Caltrans intends to issue a de minimis impact finding for the Robert St. Clair Parkway under Section 4(f) of the U.S. Department of Transportation Act of 1966. As a public park facility managed by the City of Palmdale, the Robert St. Clair Parkway is afforded special protections under Section 4(f). A de minimis impact to a Section 4(f) resource is a nominal impact that would not be adverse to the activities, features, or attributes of the resource that qualify the Robert St. Clair Parkway for protection under Section 4(f). A de minimis finding is conditioned upon:

- The official(s) with jurisdiction over the resource indicating, in writing, that the proposed action, including consideration of any mitigation, will not adversely affect the activities, features, and attributes that are important to the resource; and

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California’s economy and livability"
The public has been afforded an opportunity (by public notice) to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resources.

The Robert St. Clair Parkway is located along Sierra Highway, between Avenue Q and Avenue R. The total acreage of the parkway is approximately 8.7 acres. The Build Alternative would require the permanent acquisition of 0.83 acre of land from the Robert St. Clair Parkway, both north and south of Palmdale Boulevard, for widening Sierra Highway (see Figures 2 and 3). In addition, construction of the Build Alternative would require the temporary acquisition of 0.23 acre of land from the Robert St. Clair Parkway for construction activities such as staging, equipment storage, and access.

Construction activities could also cause temporary visual and noise impacts to the Robert St. Clair Parkway. Temporary visual impacts during construction would be typical of roadway construction projects, including construction fencing, construction equipment, material stockpiles, and vegetation removal, which would not substantially disturb the parkway’s existing landscape aesthetic because much of the parkway and its surrounding areas consist of hard scape features. Temporarily disturbed areas would be returned to pre-project conditions once construction is completed.

Temporary noise impacts are also expected as a result of construction of the Build Alternative. However, the Robert St. Clair Parkway is currently subject to noise impacts due to its proximity to the existing SR 138 and Sierra Highway, and its location in an urban environment. Once the proposed project is in operation, it would not inhibit existing recreational functions or activities in the park that are already subject to noise impacts.

The permanent and temporary acquisitions required for the proposed project constitute a very small portion of the parkway and the existing use and access of the parkway would not be materially affected. Additionally, access to the parkway will be maintained at all times during project construction and operation. Therefore, no activities, features, and attributes of the park that qualify it for protection under Section 4(f) would be adversely affected.

After public review of the Draft Initial Study/Environmental Assessment, Caltrans will formally request your concurrence that the project will not have an adverse effect on Robert St. Clair Parkway’s activities, features, or attributes.

If you have any questions, please contact me at (213) 897-3643 or the project’s environmental planner, Vanessa Velasco at (213) 897-7665.

Sincerely,

[Signature]

DAWN KUKLA
Office Chief
Division of Environmental Planning
California Department of Transportation

Enclosure: Project Figures

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"
Figure 2: Impacts to Robert St. Clair Parkway
Appendix C  Title VI Policy Statement

March 2013

NON-DISCRIMINATION POLICY STATEMENT

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

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

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"
Appendix D  Summary of Relocation Benefits

Caltrans will be the agency responsible for acquiring the necessary right-of-way for the project. Caltrans will follow the process outlined in the Caltrans Relocation Assistance Program, which is provided below.

California Department of Transportation Relocation Assistance Program

Relocation Assistance Advisory Services

Declaration of Policy

“The purpose of this title is to establish a uniform policy for fair and equitable treatment of persons displaced as a result of federal and federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole.”

The Fifth Amendment to the U.S. Constitution states, “No Person shall…be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation.” The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 CFR, Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

Fair Housing

The Fair Housing Act (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized, and that all regulations are observed, thereby avoiding the possibility of displaces jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state’s relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations, and also are given a detailed explanation of the Caltrans Relocation Assistance Program.
Appendix D • Summary of Relocation Benefits

Assistance Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Caltrans relocation advisor.

**Relocation Assistance Advisory Services**

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended, “The Uniform Act”, Caltrans will provide relocation advisory assistance to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. Caltrans will assist eligible displaces in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for sale and rental units that are “decent, safe and sanitary.” Nonresidential displaces will receive information on comparable properties for lease or purchase (for business, farm and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displaces that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning federal and state assisted housing programs, and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable “decent, safe and sanitary” replacement dwelling, available on the market, is offered to them by Caltrans.

**Residential Relocation Payments**

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

**Moving Costs**

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed
payment based on a fixed moving cost schedule. Lawful occupants who move into the
displacement property after the initiation of negotiations must wait until Caltrans
obtains control of the property in order to be eligible for relocation payments
(subsequent occupants).

**Price Differential**
In addition to moving and related expense payments, fully eligible homeowners may
be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 90 days or more prior
to the date of the initiation of negotiations (usually the first written offer to purchase
the property), may qualify to receive a price differential payment and may qualify to
receive reimbursement for certain nonrecurring costs incidental to the purchase of the
replacement property. An interest differential payment is also available if the interest
rate for the loan on the replacement dwelling is higher than the loan rate on the
displacement dwelling, subject to certain limitations on reimbursement based upon
the replacement property interest rate. For current statutory limits, eligible benefits
and entitlements please refer to the Caltrans Right of Way Manual, Chapter 10.

**Rent Differential**
Tenants and certain owner-occupants (based on length of ownership) who have
occupied the property to be acquired by Caltrans prior to the date of the initiation of
negotiations may qualify to receive a rent differential payment. This payment is made
when Caltrans determines that the cost to rent a comparable “decent, safe and
sanitary” replacement dwelling will be more than the present rent of the displacement
dwelling. As an alternative, the tenant may qualify for a down payment benefit
designed to assist in the purchase of a replacement property and the payment of
certain costs incidental to the purchase, subject to certain limitations noted under the
Down Payment section below. For current statutory limits, eligible benefits and
entitlements please refer to the Caltrans Right of Way Manual, Chapter 10.

In order to receive any relocation benefits, the displaced person must buy or rent and
occupy a “decent, safe and sanitary” replacement dwelling within one year from the
date Caltrans takes legal possession of the property, or from the date the displacee
vacates the displacement property, whichever is later.

**Down Payment**
The down payment option has been designed to aid tenants in legal occupancy prior
to Caltrans’ initiation of negotiations. For current statutory limits, eligible benefits
and entitlements please refer to the Caltrans Right of Way Manual, Chapter 10. The
one-year eligibility period in which to purchase and occupy a “decent, safe and
sanitary” replacement dwelling will apply.

**Last Resort Housing**
Federal regulations (49 CFR 24) contain the policy and procedure for implementing
the Last Resort Housing Program on federal-aid projects. Last Resort Housing
benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing. For current statutory limits, eligible benefits and entitlements please refer to the Caltrans Right of Way Manual, Chapter 10.

After the initiation of negotiations, Caltrans will within a reasonable length of time, personally contact the displaces to gather important information, including the following:

- Number of people to be displaced
- Specific arrangements needed to accommodate any family member(s) with special needs
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family
- Preferences in area of relocation
- Location of employment or school

Nonresidential Relocation Assistance

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business’s specific relocation needs. The types of payments available to eligible businesses, farms and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the Right of Way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move. The payment will be based on the lesser of:
  1. The fair market value of the item as installed and set up (e.g., wired, bolted, permitted) for continued use at the displacement site, less the proceeds from its sale; or
2. The estimated cost of moving and reconnecting the item “as is,” including cost to install and obtain permits, based on the lowest acceptable bid or estimate obtained by the Region/District.

- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred.

**Reestablishment Expenses**

Reestablishment expenses related to the operation of the business at the new location, up to $25,000 for reasonable expenses actually incurred.

**Fixed In Lieu Payment**

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses which meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than $1,000 nor more than **$40,000**.

**Additional Information**

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other Federal law, except for any federal law providing low-income housing assistance.

Any person, business, farm or nonprofit organization which has been refused a relocation payment by the Caltrans relocation advisor or believes that the payment(s) offered by the agency are inadequate, may appeal for a special hearing of the complaint. You have right to be represented by legal counsel (but solely at your own expense). Information about the appeal procedure is available from the relocation advisor.

California law allows for payment for lost goodwill that arises from the displacement for a pubic project through the Acquisition function. A list of ineligible expenses can be obtained from Caltrans Right-of-Way. California’s law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

**Residential Relocation Payments Program**

For more information or a brochure on the residential relocation program, please contact Chanin McKeighen at Chanin_McKeighen@dot.ca.gov, or (559) 445-6237.

If you own or rent a mobile home that may be moved or acquired by Caltrans, a relocation brochure is available in English at http://www.dot.ca.gov/hq/row/pubs/mobile_eng.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/mobile_sp.pdf.

**Business and Farm Relocation Assistance Program**

For more information or a brochure on the relocation of a business or farm, please contact Chanin McKeighen at Chanin_McKeighen @dot.ca.gov, or (559) 445-6237.


**Additional Information**

No relocation payment received would be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law (except for any federal law providing low-income housing assistance).
# Appendix E  Environmental Commitments Record

The purpose of the Environmental Commitments Record (ECR) provided in this appendix is to assign responsibility for implementation, monitoring, and timing of each avoidance, minimization, mitigation, and standard condition measure that has been identified to address impacts of the project. California Department of Transportation (Caltrans) is the Lead Agency under the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) for the project, in cooperation with the City of Palmdale (City). As a result, Caltrans is required to ensure compliance with each of the adopted commitments listed in the ECR.

The following matrix lists each of the environmental topics evaluated in the environmental document and the avoidance, minimization, and mitigation measures required to reduce or eliminate project impacts related to those topics. The columns in the following matrix provide the following information (described by column heading, from left to right):

- **ID No.:** This column provides the number of each commitment, as defined in detail in Chapter 2.
- **Task and Brief Description:** This column provides the complete language of each environmental commitment from Chapter 2.
- **Source:** Describes the specific section in the Draft Environmental Document from where the commitment was derived.
- **SSP/NSSP:** Indicates if a Standard Special Provision or Non-Standard Special Provision will be required to implement the commitment.
- **Responsible Staff:** This column lists the party or parties and personnel responsible for ensuring that each commitment is properly implemented.
- **Action Taken to Comply:** This column describes the specific actions or steps that were taken to complete the commitment. This column will be filled out after the commitment has been completed.
- **CEQA Significance Addressed:** This column identifies the significance level (less than significant with mitigation, less than significant, and no impact) of the CEQA impact that the commitment addresses.
- **Task Completed:** This column will be initialed and dated by one of the responsible staff members as soon as the corresponding environmental commitment has been completed.
- **Remarks/Due Date:** This column will be filled out as necessary. Due dates will be determined at a later date.

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SR-138 (5th Street East to 10th Street East) Improvements Project  •  E-1
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<th>Task Completed Initial</th>
<th>Date</th>
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<tr>
<td>LU-1</td>
<td>Minimization: Project alignment shall be adjusted to fit within existing right-of-way, where feasible.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.1.1</td>
<td>Design</td>
<td>Design engineer</td>
<td>Less than significant</td>
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<td>PAR-1</td>
<td>Minimization: In accordance with the provisions of the California Park Preservation Act (CCP Sections 5400 through 5409), sufficient (just) compensation (CCP 1263.320), or land, or both, will be paid to the City of Palmdale Parks and Cultural Department to enable the operating entity to replace the parkland and the facilities thereon. The substitute land will be of comparable characteristics and of substantially equal size, located in an area that would allow use by generally the same people who used the existing parkland and facilities. The cost will include the land and the cost of converting the land into parkland, including placement of substitute facilities thereon if a functional replacement is chosen. The final determination of what constitutes a functional</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.1.3</td>
<td>Design</td>
<td>City of Palmdale Public Works Department and Caltrans Right-of-way</td>
<td>Less than significant with mitigation</td>
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### SR-138 Improvements Project Environmental Commitments Record

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<td>replacement lies with Parks and Cultural Department.</td>
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<td><strong>Community Impacts</strong></td>
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<td>COM-1</td>
<td>Minimization: Provide relocation assistance and counseling to displaced persons and businesses in accordance with the Federal Uniform Relocation Assistance and Real Properties Acquisition Polices Act, as amended, to ensure adequate relocation for displaced persons and businesses. All eligible displaced will be provided moving expenses. All benefits and services will be provided equitably to all relocatees without regard to race, color, religion, age, national origins, and disability as specified under Title VI of the Civil Rights Act of 1964.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.3.2</td>
<td>PAED</td>
<td>City of Palmdale Public Works Department</td>
<td>Less than significant</td>
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<td>COM-2</td>
<td>Minimization: Provide ROW agents who are bilingual or have translators to assist with the diverse population within the area during the relocation process.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.3.2</td>
<td>During ROW acquisition process</td>
<td>City of Palmdale Public Works Department</td>
<td>Less than significant</td>
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<td>COM-3</td>
<td>Minimization: Involve low-income and minority status populations, through public outreach efforts, throughout the various phases of the project to address their concerns and needs.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.3.3</td>
<td>Final design, During ROW acquisition process, Construction</td>
<td>City of Palmdale Public Works Department</td>
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<td>SC-UT-1</td>
<td>Standard Condition: Caltrans and City will coordinate with all affected private and public service utilities during the design stage to identify any potential conflicts with existing utilities. This process will include evaluating ways to avoid utility relocations by refining the project design or protecting existing utilities in place. After seeking approval from utility providers, final measures will be incorporated into the final plans and specifications.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.4</td>
<td>Final design</td>
<td>City of Palmdale Public Works Department, Caltrans Utilities</td>
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<td>Less than significant</td>
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<td>VA-1</td>
<td>Avoidance: Develop CSS for the aesthetic and landscape treatments of the project elements that inform the project's Landscape and Irrigation Plan that will be developed during the plans, specifications, and estimate (PS&amp;E) phase.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Design</td>
<td>City of Palmdale Public Works Department</td>
<td></td>
<td>Less than significant</td>
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<td>VA-2</td>
<td>Avoidance: Survey exact locations for all existing trees and include in plan set.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Pre-Construction</td>
<td>City of Palmdale Public Works Department</td>
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<td>Less than significant</td>
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<td>VA-3</td>
<td>Avoidance: Protect the drip zone of isolated trees to be preserved during construction with temporary fencing.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Pre-Construction</td>
<td>Resident Engineer, City of Palmdale</td>
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<td>VA-4</td>
<td>Avoidance: Commence replanting the corridor prior to the end of the construction period to ensure new vegetation is present when project is completed.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Construction</td>
<td>Construction Engineer, City of Palmdale Public Works Department</td>
<td>Public Works Department</td>
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<td>Less than significant</td>
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<td>VA-5</td>
<td>Avoidance: Install trees in a variety of sizes from 36-inch box, 24-inch box, and 15-gallon containers, with 24-inch box trees being the dominant size at installation.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Design and Pre-Construction</td>
<td>Resident Engineer, City of Palmdale Public Works Department</td>
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<td>Less than significant</td>
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<td>VA-6</td>
<td>Avoidance: Use reclaimed/recycled water as sources for all irrigation systems, where feasible, including any recycled/reclaimed water supply within 250 feet of the project corridor.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Pre-construction and Construction</td>
<td>Design Engineer, Resident Engineer</td>
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<tr>
<td>VA-7</td>
<td>Minimization: Beginning with preliminary design and continuing through final design and construction, save and protect as much existing vegetation in the project area as feasible.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Design</td>
<td>Design Engineer, Resident Engineer</td>
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<td>Less than significant</td>
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<td>VA-8</td>
<td>Minimization: Provide replacement plants at the rate determined by the City and Caltrans District Landscape Architect. At a minimum, use a replacement ratio of 1:1, unless a higher ratio is</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Construction</td>
<td>City of Palmdale Public Works Department</td>
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<tr>
<td>VA-9</td>
<td>Minimization: Design all visible concrete structures and surfaces to visually blend with the adjacent landscaping and natural plantings.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Design</td>
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<td>Design Engineer, Landscape Architect</td>
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<td>VA-10</td>
<td>Minimization: For all new or relocated light fixtures and other sources of glare, provide Dark Sky-compliant shielded fixtures that prevent light trespass into the sky and onto adjacent properties, while maximizing light cast onto the ground.</td>
<td>Draft IS/EA, Chapter 2, Section 2.1.6</td>
<td>Design</td>
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<td>Design Engineer, Landscape Architect</td>
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**Biological Resources**

| BIO-1 | Avoidance: Landscaping and erosion control included in the project will not include species listed on either the federal or the State of California Noxious Weed List. | Draft IS/EA, Chapter 2, Section 2.3.6                                 | Design    | Resident Engineer and Biologist | Less than significant |
| BIO-2 | Minimization: In areas of particular sensitivity (i.e., near or adjacent to drainages) extra precautions will be taken if invasive species are found in or adjacent to these areas. This will include inspection and cleaning of construction equipment and eradication | Draft IS/EA, Chapter 2, Section 2.3.6                                 | Construction | Resident Engineer and Biologist | Less than significant |
### Appendix E • Environmental Commitments Record

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#### Construction Impacts

**CI-COM-1** Minimization: To the extent practical, street closures required during construction will be scheduled to occur at night. This requirement will be addressed in the Traffic Management Plan (TMP) to be prepared during the final design phase of project development. Implementation of the TMP will avoid or minimize impacts on the communities along the construction zones.

- **Source**: Draft IS/EA, Chapter 2, Section 2.4
- **Timing**: Design
- **Responsible Staff**: Design Engineer and City of Palmdale Public Works Department
- **Significance Addressed**: Less than significant

**CI-COM-2** Avoidance: To the extent practical, the Contractor will avoid limiting access to businesses during construction during normal business hours. Businesses will be contacted and advised of nearby construction activities before their commencement.

- **Source**: Draft IS/EA, Chapter 2, Section 2.4
- **Timing**: Construction
- **Responsible Staff**: Resident Engineer and City of Palmdale Public Works Department
- **Significance Addressed**: Less than significant

**CI-PAR-1** Minimization: Access to Robert St. Clair Parkway shall be maintained at all times during construction.

- **Source**: Draft IS/EA, Chapter 2, Section 2.4
- **Timing**: Construction
- **Responsible Staff**: Resident Engineer and City of Palmdale Public Works Department
- **Significance Addressed**: Less than significant

**CI-UT-1** Minimization: In accordance with the requirements in the California Code of Regulations, prior to initiation of

- **Source**: Draft IS/EA, Chapter 2, Section 2.4
- **Timing**: Pre-Construction
- **Responsible Staff**: Resident Engineer and City of Palmdale
- **Significance Addressed**: Less than significant
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<tr>
<td>CI-UT-2</td>
<td>construction, the Contractor will coordinate and notify the operators of underground or overhead utility and service lines prior to any excavation activities. Surveyors will meet onsite with utility company workers to locate, mark, and identify conflicting utility lines to avoid damage and limit disruption to utility services.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
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<tr>
<td>CI-ES-1</td>
<td>Minimization: During severe drought periods, the Contractor will be required to use soil binders or a dust palliative to control dust to minimize the use of potable water during construction. Severe drought conditions will exist whenever the State of California declares a drought emergency. Minimization: Emergency service providers, such as fire, police, and ambulance services, will be notified in advance of construction of the timing, location, and duration of construction activities and the locations of detours and lane closures.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Pre-Construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
<td>Less than significant</td>
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<tr>
<td>CI-ES-2</td>
<td>Minimization: During the final design phase, in coordination with affected facility owners or operators, the City will develop and implement access plans for highly sensitive land uses such as police and fire</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Design</td>
<td>Design Engineer and City of Palmdale Public Works Department</td>
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<td>CI-T-1</td>
<td>Minimization: Develop a TMP to offset the effects of access restrictions and traffic congestion during construction. The TMP will consider methods, such as adjustment of signal timing or signal coordination to increase roadway efficiency; finding and reducing non-essential stoppages; reducing the need for diversions; and parking restrictions on detour routes during work hours, to increase capacity, reduce traffic conflicts, and improve access. The TMP will include a traffic contingency plan with procedures to be implemented for possible unforeseen circumstances and emergencies.</td>
<td>Design - Section 2.4</td>
<td>Less than significant</td>
<td>Design Engineer and City of Palmdale Public Works Department</td>
<td>Initial Date</td>
<td>Less than significant</td>
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<td>CI-T-2</td>
<td>Mitigation: The Contractor will be required to provide motorist alert and awareness information during construction, as appropriate for the conditions, to include the following options: changeable message signs, changeable ground-mounted signs, traffic radio announcements, and the Caltrans Highway Information Network.</td>
<td>Design - Section 2.4</td>
<td>Less than significant</td>
<td>Resident Engineer</td>
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<tbody>
<tr>
<td>CI-T-3</td>
<td>Minimization: The Antelope Valley Transit Authority (AVTA) will be coordinated to request and comply with applicable procedures for any required temporary bus stop relocations or other disruptions to transit service during construction.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Design Engineer and City of Palmdale Public Works Department</td>
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<tr>
<td>CI-CUL-1</td>
<td>Minimization: In accordance with Caltrans Standard Specifications, if cultural materials are discovered during construction, all earth-moving activities 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, Section 7050.5 of the State Health and Safety Code states that further disturbances and activities will stop in any area or nearby area suspected to overlie remains, and the county coroner will be contacted. Pursuant to Section 5097.98 of the Public Resources Code (PRC), if the remains are thought to be Native American, the coroner will notify the Resident Engineer and the Native American Heritage Commission (NAHC), who will then notify the Most Likely Descendant (MLD). At this stage.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
<td>Less than significant</td>
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<td>time, the Resident Engineer will contact the District 7 Environmental Branch so that staff may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of Section 5097.98 of the PRC are to be followed as applicable.</td>
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<td>CI-CUL-2</td>
<td>Avoidance: It is Caltrans’ policy to avoid cultural resources whenever possible. Further investigation may be needed if resources cannot be avoided by the project. 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.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
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<td>CI-CUL-3</td>
<td>Minimization: Per the request of the Fernandeño Tataviam Band of Mission Indians, the City will implement the following mitigation measures to minimize any potential impacts to cultural resources during project construction: • All ground-disturbing activities performed on the Project property shall be monitored by professional Native American monitors.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
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<td>CI-WQ-1</td>
<td>Minimization: During construction, implement waste management BMPs, which would consist of procedural and structural BMPs for handling, storing, and disposing of wastes generated by a construction project.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
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<td>CI-WQ-2</td>
<td>Minimization: During construction, consider using soil stabilization BMPs, which consist of preparing the soil surface and applying soil stabilizing media, such as soil binders and geotextile mats.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
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<td>CI-WQ-3</td>
<td>During construction, implement non-stormwater BMPs, such as vehicle and equipment maintenance, to limit the potential for pollutants to impact surface waters.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
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The applicant shall retain one professional Native American monitor per excavation team to monitor all ground-disturbing activities performed on the project property.

The Fernandeño Tataviam Band of Mission Indians will be provided the opportunity to review any artistic design, such as freeway wall designs, associated with the project.
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<td>CI-WQ-4</td>
<td>Minimization: Prepare a SWPPP prior to commencement of any soil-disturbing activities. The SWPPP shall address all State and federal stormwater control requirements and regulations. The SWPPP shall address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP shall include BMPs to control pollutants, sediment from erosion, stormwater runoff, and other construction-related impacts.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Pre-Construction</td>
<td>Resident Engineer</td>
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<td>CI-WQ-5</td>
<td>Minimization: All work will conform to NPDES requirements as described in NPDES Permit for General Construction Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002). These include, but are not limited to, temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-stormwater BMPs.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
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<td>CI-WQ-6</td>
<td>Minimization: If dewatering is required for the project, the requirements specified in the Lahontan RWQCB’s dewatering permit Order R6T-</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
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<td>CI-HAZ-1</td>
<td>Minimization: A Health and Safety Plan for the protection of construction workers will be prepared and implemented during construction. Asbestos survey results, lead-based paint, and soil test results will be the basis for developing health and safety plans for the protection of construction workers. Other avoidance and minimization measures that will be considered include excavation of impacted soils.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Pre-Construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
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<td>CI-HAZ-2</td>
<td>Minimization: The Construction Contingency Plan prepared during the final design phase will be implemented during all construction phases.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
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<td>CI-HAZ-3</td>
<td>Minimization: If there is an unexpected release of hazardous substances that exceeds reportable quantities during the construction phase, work will cease immediately at the general location of the release, and the release will be reported to the National Response Center at 1-800-424-8802. The Contractor will be responsible for cleanup of all unexpected releases under the appropriate federal, State, or local agency oversight and</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
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<td>CI-AQ-1</td>
<td>Compliance with Caltrans’ Standard Specifications in Section 14 (2015) will be required.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
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<td></td>
<td>• Section 14-9.01 specifically requires compliance with all applicable laws and regulations related to air quality, including AVAQMD rules and regulations and local ordinances.</td>
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<td></td>
<td>• Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.</td>
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<tr>
<td>CI-AQ-2</td>
<td>Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a &quot;no visible dust&quot; criterion either at the point of emission or at the right of way line as required by the AVAQMD.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
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<tr>
<td>CI-AQ-3</td>
<td>Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
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</tr>
<tr>
<td>CI-AQ-4</td>
<td>Wash off all trucks as they leave the right of way as</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
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### SR-138 Improvements Project Environmental Commitments Record

<table>
<thead>
<tr>
<th>ID No.</th>
<th>Task and Brief Description</th>
<th>Source</th>
<th>SSP/ NSSP</th>
<th>Project Timing</th>
<th>Responsible Staff</th>
<th>Action Taken to Comply</th>
<th>CEQA Significance Addressed</th>
<th>Remarks/ Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI-AQ-5</td>
<td>Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Necessary to control fugitive dust emissions.</td>
<td>CEQA Initial Date</td>
<td>Less than significant</td>
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<tr>
<td>CI-AQ-6</td>
<td>Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited re-vegetation of disturbed slopes as needed to minimize construction impacts to existing communities.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>CEQA Initial Date</td>
<td>Less than significant</td>
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<tr>
<td>CI-AQ-7</td>
<td>Locate equipment and materials storage sites at least 500 feet from the sensitive receptors. Keep construction areas clean and orderly.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>CEQA Initial Date</td>
<td>Less than significant</td>
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<tr>
<td>CI-AQ-8</td>
<td>Establish environmentally sensitive areas or their equivalent at least 500 feet away from sensitive air receptors within which construction activities such as extended idling, material storage, and equipment maintenance, would be prohibited, to the extent feasible.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>CEQA Initial Date</td>
<td>Less than significant</td>
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</tr>
<tr>
<td>CI-AQ-9</td>
<td>Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>CEQA Initial Date</td>
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<tr>
<td>ID No.</td>
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<td>Action Taken to Comply</td>
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<tr>
<td>CI-AQ-10</td>
<td>deposits on roads affected by construction traffic.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction Resident Engineer</td>
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<tr>
<td>CI-AQ-11</td>
<td>Cover all transported loads of soil and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction Resident Engineer</td>
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<tr>
<td>CI-AQ-12</td>
<td>Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction Resident Engineer</td>
<td>Less than significant</td>
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</tr>
<tr>
<td>CI-AQ-13</td>
<td>Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction Resident Engineer</td>
<td>Less than significant</td>
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<tr>
<td>CI-AQ-16</td>
<td>Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulates 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.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction Resident Engineer</td>
<td>Less than significant</td>
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### SR-138 Improvements Project Environmental Commitments Record

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<th>ID No.</th>
<th>Task and Brief Description</th>
<th>Source</th>
<th>Responsible Staff</th>
<th>Action Taken to Comply</th>
<th>CEQA Significance Addressed</th>
<th>Remarks/ Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI-AQ-14</td>
<td>While unlikely, if naturally occurring asbestos, serpentine, or ultramafic rock is discovered during grading operations Section 93105, Title 17 of the California Code of Regulations requires notification to the AVAQMD by the next business day and implementation of the following measures within 24 hours: &lt;ul&gt; &lt;li&gt;Unpaved areas subject to vehicle traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 percent asbestos.&lt;/li&gt; &lt;li&gt;The speed of any vehicles and equipment traveling across unpaved areas must be no more than fifteen (15) miles per hour unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust that is visible crossing the project boundaries.&lt;/li&gt; &lt;li&gt;Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept wet定期湿化&lt;/li&gt;&lt;/ul&gt;</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction Resident Engineer</td>
<td>Less than significant</td>
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## SR-138 Improvements Project Environmental Commitments Record

<table>
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<th>Action Taken to Comply</th>
<th>CEQA Significance Addressed</th>
<th>Task Completed Initial Date</th>
<th>Remarks/Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI-NOI-1</td>
<td>Minimization: Equipment noise control shall be applied to revising old equipment and designing new equipment to meet specified noise levels.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
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</tr>
<tr>
<td>CI-NOI-2</td>
<td>Minimization: In-use noise control shall be used where existing equipment is not permitted to produce noise levels in excess of specified limits.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
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<tr>
<td>CI-NOI-3</td>
<td>Minimization: Site restrictions shall be used in an attempt to achieve noise reduction through modifying the time, place, or method of operation of a particular source.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
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<tr>
<td>CI-NOI-4</td>
<td>Minimization: Personal training of operators and supervisors is needed to become more aware of the construction site noise problems.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
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# Appendix E  •  Environmental Commitments Record

## SR-138 Improvements Project Environmental Commitments Record

<table>
<thead>
<tr>
<th>ID No.</th>
<th>Task and Brief Description</th>
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<th>Action Taken to Comply</th>
<th>CEQA Significance Addressed</th>
<th>Remarks/ Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI-BIO-1</td>
<td>Minimization: Prior to commencement of the construction activities, the project boundary will be staked to ensure construction activities only occur within the proposed construction footprint. Any sensitive areas outside the construction zone within the project limits will be designated as Environmental Sensitive Areas (ESAs) to be avoided to minimize potential impacts to nearby habitat. These areas will be fenced off by the use of obvious exclusion fencing throughout the duration of the project.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CI-BIO-2</td>
<td>Minimization: Vegetation will only be removed after preconstruction biological survey has been completed or when sensitive birds and other species are not breeding within the project’s area of impact.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Pre-construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
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<tr>
<td>CI-BIO-3</td>
<td>Minimization: Two preconstruction surveys shall be conducted prior to the start of initial ground-disturbing construction activities. The first survey should be conducted between 30 and 14 days prior to initial ground-disturbing construction activities, and the second survey should be conducted within 24 hours prior to initial ground-disturbing</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Pre-construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
<td>Less than significant</td>
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<th>ID No.</th>
<th>Task and Brief Description</th>
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<th>Task Completed Initial</th>
<th>Task Completed Date</th>
<th>Remarks/ Due Date</th>
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</thead>
<tbody>
<tr>
<td>CI-BIO-4</td>
<td>Minimization: If an active nest or occupied burrowing owl burrow is found in the BSA, an appropriate buffer zone will be established around the nest/burrow and maintained by a qualified biologist until the nest/burrow is no longer active. The most appropriate buffer distance will be established through coordination with USFWS, CDFW, and the City. If it has been determined that a sensitive bird is nesting within 300 feet of the project area during active construction, a preconstruction survey should include an analysis of the project impact areas and surrounding BSA. The survey will be designed for identifying and biological constraints to the project, including nesting birds, burrowing owls, sensitive reptiles, and sensitive mammals. If a nesting bird, burrowing owl, occupied burrowing owl burrow, or other sensitive biological resource is identified during the preconstruction survey then appropriate avoidance and minimization measures will be determined as approved by the City, CDFW, and/or USFWS to assure compliance with state and federal regulations.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Pre-construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
<td>Less than significant</td>
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<tr>
<td>ID No.</td>
<td>Task and Brief Description</td>
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<tr>
<td>CI-BIO-5</td>
<td>Biological monitor will be present to monitor the nesting activities to ensure that construction noise and dust is not adversely affecting them.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer</td>
<td>Less than significant</td>
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<tr>
<td>CI-BIO-6</td>
<td>Best Management Practices (BMPs) shall be used to reduce noise pollution related to construction.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
<td>Less than significant</td>
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<tr>
<td>CI-BIO-7</td>
<td>Areas immediately adjacent to SR-138 (Palmdale Boulevard) and Sierra Highway (and within a 300-foot buffer on either side of it), will be temporarily affected by construction activities including vehicle and equipment staging areas, and other construction-related activities. These activities will be restricted to the proposed project area footprint and areas identified as.</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Construction</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
<td>Less than significant</td>
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<th>Action Taken to Comply</th>
<th>CEQA Significance Addressed</th>
<th>Remarks/Due Date</th>
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<tbody>
<tr>
<td>CI-BIO-8</td>
<td>Minimization: Sensitive areas outside the proposed project zone, including the potentially</td>
<td>Draft IS/EA, Chapter 2, Section 2.4</td>
<td>Pre-</td>
<td>Resident Engineer and City of Palmdale Public Works Department</td>
<td>Less than significant</td>
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<tr>
<td></td>
<td>disturbed/developed” on the vegetation map (Figure 2.3.1-1).</td>
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<td>construction</td>
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<td>Permit/Approval</td>
<td>Agency</td>
<td>Status/Timing</td>
<td>Responsible Staff</td>
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<tr>
<td>Air Quality Conformity Determination</td>
<td>Federal Highway Administration (FHWA)</td>
<td>Before approval of the Final environmental document, FHWA must find that the project is consistent with requirements of the Clean Air Act (CAA).</td>
<td>Air Quality Specialist</td>
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<tr>
<td>Water Discharge Permit, approval of Notice of Intent (NOI) to comply with General Construction Activity National Pollutant Discharge Elimination System (NPDES) Permit (Clean Water Act [CWA] Section 402)</td>
<td>California State Water Resources Control Board (SWRCB)</td>
<td>NOI to be submitted at least 30 days prior to start of construction.</td>
<td>Resident Engineer</td>
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<tr>
<td>Section 1602 Lake or Streambed Alteration Agreement</td>
<td>California Department of Fish and Wildlife (CDFW)</td>
<td>Section 1602 Notification is to be submitted and agreement obtained prior to start of construction</td>
<td>Biologist</td>
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<tr>
<td>Water Quality Certification (CWA Section 401)</td>
<td>Region 6, Lahontan Regional Water Quality Control Board (RWQCB)</td>
<td>Application to be submitted prior to start of construction.</td>
<td>Resident Engineer</td>
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<tr>
<td>Section 106 of the National Historic Preservation Act (NHPA) has been completed</td>
<td>State Historic Preservation Officer (SHPO), Interested Native American Tribes</td>
<td>Section 106 of the NHPA has been completed. Native American Consultation has been completed</td>
<td>Cultural Resources Specialist</td>
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<tr>
<td>Memorandum of Understanding (MOU) and a Construction and Maintenance Agreement between Caltrans and UPRR/SCRRA</td>
<td>Union Pacific Railroad Company (UPRR) and Metrolink (SCRRA)</td>
<td>Prior to any construction within or above railroad ROW.</td>
<td>Caltrans Maintenance</td>
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<tr>
<td>Dust Control Permit pursuant to Rule 403</td>
<td>Antelope Valley Air Pollution Control District Utilities (e.g., power, water, gas, cable, communication)</td>
<td>Permit to be acquired prior to construction. Pror to any construction activities that would affect utility facilities.</td>
<td>Resident Engineer</td>
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## Appendix F  List of Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>°F</td>
<td>degrees Fahrenheit</td>
</tr>
<tr>
<td>µg/m³</td>
<td>micrograms per cubic meter</td>
</tr>
<tr>
<td>AADT</td>
<td>annual average daily traffic</td>
</tr>
<tr>
<td>AADTT</td>
<td>average annual daily truck traffic</td>
</tr>
<tr>
<td>AB</td>
<td>Assembly Bill</td>
</tr>
<tr>
<td>ACHP</td>
<td>Advisory Council on Historic Preservation</td>
</tr>
<tr>
<td>ACM</td>
<td>asbestos-containing material</td>
</tr>
<tr>
<td>ACS</td>
<td>American Community Survey</td>
</tr>
<tr>
<td>ADL</td>
<td>aerially deposited lead</td>
</tr>
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<td>APE</td>
<td>Area of Potential Effect</td>
</tr>
<tr>
<td>APEFZ</td>
<td>Alquist-Priolo Earthquake Fault Zone</td>
</tr>
<tr>
<td>APN</td>
<td>Assessor’s Parcel Number</td>
</tr>
<tr>
<td>ARB</td>
<td>California Air Resources Board</td>
</tr>
<tr>
<td>ASR</td>
<td>Archaeological Survey Report</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Society of Testing and Materials</td>
</tr>
<tr>
<td>AVAQMD</td>
<td>Antelope Valley Air Quality Management District</td>
</tr>
<tr>
<td>AVG Basin</td>
<td>Antelope Valley Groundwater Basin</td>
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<tr>
<td>AVTA</td>
<td>Antelope Valley Transit Authority</td>
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<tr>
<td>B</td>
<td>boron</td>
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<tr>
<td>BAT/BCT</td>
<td>Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology</td>
</tr>
<tr>
<td>bgs</td>
<td>below ground surface</td>
</tr>
<tr>
<td>BMP</td>
<td>Best Management Practices</td>
</tr>
<tr>
<td>BSA</td>
<td>Biological Study Area</td>
</tr>
<tr>
<td>BT&amp;H</td>
<td>Business, Transportation, and Housing Agency</td>
</tr>
<tr>
<td>CAA</td>
<td>Clean Air Act</td>
</tr>
<tr>
<td>CAAQS</td>
<td>California Ambient Air Quality Standards</td>
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<tr>
<td>Cal/EPA</td>
<td>California Environmental Protection Agency</td>
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<td>Cal-IPC</td>
<td>California Invasive Plant Council</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>Caltrans</td>
<td>California Department of Transportation</td>
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<tr>
<td>CCR</td>
<td><em>California Code of Regulations</em></td>
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<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<td>CEC</td>
<td>California Energy Commission</td>
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<td>CEQ</td>
<td>Council on Environmental Quality</td>
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<td>CEQA</td>
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<td>CERCLA</td>
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<td>CH₄</td>
<td>methane</td>
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<td>CHL</td>
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<td>CHP</td>
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<td>CNPS</td>
<td>California Native Plant Society</td>
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<td>California Native Plant Society Electronic Inventory</td>
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<td>carbon dioxide</td>
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<td>CO-CAT</td>
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<td>dB</td>
<td>decibel</td>
</tr>
<tr>
<td>dBA</td>
<td>A-weighted decibel</td>
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<tr>
<td>DIB</td>
<td>Design Information Bulletin</td>
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<tr>
<td>DO</td>
<td>dissolved oxygen</td>
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<td>DPM</td>
<td>diesel particulate matter</td>
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### Appendix F • List of Acronyms and Abbreviations

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<tr>
<th>Acronym</th>
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<td>Draft Relocation Impact Memorandum</td>
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<td>DSA</td>
<td>disturbed soil area</td>
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<td>DWR</td>
<td>California Department of Water Resources</td>
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<td>EAFB</td>
<td>Edwards Air Force Base</td>
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<td>ECR</td>
<td>Environmental Commitments Record</td>
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<td>Environmental Impact Report</td>
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<td>EIS</td>
<td>Environmental Impact Statement</td>
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<td>Executive Order</td>
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<td>United States Environmental Protection Agency</td>
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<td>environmentally sensitive areas</td>
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<td>F</td>
<td>fluoride</td>
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<td>Federal Emergency Management Agency</td>
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<td>Federal Highway Administration</td>
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<td>Federal Insecticide, Fungicide, and Rodenticide Act</td>
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<td>FRA</td>
<td>Federal Railroad Administration</td>
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<td>FTA</td>
<td>Federal Transit Administration</td>
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<td>FTIP</td>
<td>Federal Transportation Improvement Program</td>
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<td>greenhouse gas</td>
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<td>GO</td>
<td>General Order</td>
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<td>H2S</td>
<td>hydrogen sulfide</td>
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<td>Health Effects Institute</td>
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<td>Historic Property Data File</td>
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<td>Historic Property Survey Report</td>
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<td>HRER</td>
<td>Historical Resources Evaluation Report</td>
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<td>HSA</td>
<td>Hydrologic Subarea</td>
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<td>HSG</td>
<td>Hydrologic Soil Group</td>
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<td>Interstate 15</td>
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<td>I-5</td>
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<tr>
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<td>Intergovernmental Review</td>
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<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<td>Integrated Risk Information System</td>
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<td>Acronym</td>
<td>Full Form</td>
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<td>IS/EA</td>
<td>Initial Study/Environmental Assessment</td>
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<td>ISA</td>
<td>Initial Site Assessment</td>
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<td>ITS</td>
<td>Intelligent Transportation System</td>
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<tr>
<td>kV</td>
<td>kilovolt</td>
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<td>LBP</td>
<td>lead-based paint</td>
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<tr>
<td>LDV</td>
<td>light-duty vehicle</td>
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<tr>
<td>LEDPA</td>
<td>least environmentally damaging practicable alternative</td>
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<tr>
<td>LF</td>
<td>linear foot</td>
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<td>LOS</td>
<td>Level of Service</td>
</tr>
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<td>LUST</td>
<td>leaking underground storage tank</td>
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<tr>
<td>MBTA</td>
<td>Migratory Bird Treaty Act</td>
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<td>MCE</td>
<td>maximum credible earthquake</td>
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<tr>
<td>MDAB</td>
<td>Mojave Desert Air Basin</td>
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<td>MEP</td>
<td>maximum extent practicable</td>
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<td>Metro</td>
<td>Los Angeles County Metropolitan Transportation Authority</td>
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<td>mg/L</td>
<td>milligrams per liter</td>
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<td>MLD</td>
<td>Most Likely Descendent</td>
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<td>MMT</td>
<td>million metric tons</td>
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<td>MOA</td>
<td>Memorandum of Agreement</td>
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<td>MOU</td>
<td>Memorandum of Understanding</td>
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<td>mph</td>
<td>miles per hour</td>
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<td>MPO</td>
<td>Metropolitan Planning Organization</td>
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<td>MS4</td>
<td>municipal separate storm sewer system</td>
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<td>MSATs</td>
<td>mobile source air toxics</td>
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<td>msl</td>
<td>mean sea level</td>
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<td>MUTCD</td>
<td><em>Manual on Uniform Traffic Control Devices</em></td>
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<td>megawatt</td>
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<td>N₂O</td>
<td>nitrous oxide</td>
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<td>NAAQS</td>
<td>National Ambient Air Quality Standards</td>
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<td>NAC</td>
<td>Noise Abatement Criteria</td>
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<td>NAHC</td>
<td>Native American Heritage Commission</td>
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<td>NEPA</td>
<td>National Environmental Policy Act of 1969</td>
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<td>NES-MI</td>
<td>Natural Environment Study (Minimal Impacts)</td>
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<td>NHPA</td>
<td>National Historic Preservation Act of 1966</td>
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<td>NHTSA</td>
<td>National Highway Traffic Safety Administration</td>
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<td>NO₂</td>
<td>nitrogen dioxide</td>
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<td>NOA</td>
<td>naturally occurring asbestos</td>
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<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
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<td>NOAA Fisheries</td>
<td>National Oceanic and Atmospheric Administration’s National Marine Fisheries Service</td>
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<td>NOI</td>
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<td>NOx</td>
<td>nitrogen oxides</td>
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<td>NPDES</td>
<td>National Pollutant Discharge Elimination System</td>
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<td>Natural Resources Conservation Service</td>
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<td>National Register of Historic Places</td>
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<td>O₃</td>
<td>ozone</td>
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<td>Office of Historic Preservation</td>
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<td>off-highway vehicle</td>
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<td>OPR</td>
<td>Office of Planning and Research</td>
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<td>OSHA</td>
<td>Occupational Safety and Health Act</td>
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<td>OSTP</td>
<td>Office of Science and Technology Policy</td>
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<td>PA</td>
<td>Programmatic Agreement</td>
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<td>Pb</td>
<td>lead</td>
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<td>PDT</td>
<td>Project Development Team</td>
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<td>PM</td>
<td>particulate matter</td>
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<tr>
<td>PM</td>
<td>Post Mile</td>
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<tr>
<td>PM₁₀</td>
<td>particulate matter less than 10 microns in diameter</td>
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<tr>
<td>PM₂.₅</td>
<td>particulate matter less than 2.5 microns in diameter</td>
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<td>PMR</td>
<td>Paleontological Mitigation Report</td>
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<td>parts per billion</td>
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<tr>
<td>ppm</td>
<td>parts per million</td>
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<td>Professionally Qualified Staff</td>
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<td>PRC</td>
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<td>QA</td>
<td>quality assurance</td>
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Appendix F  •  List of Acronyms and Abbreviations

QC       quality control
RAP      Relocation Assistance Program
RCRA     Resource Conservation and Recovery Act of 1976
ROG      reactive organic gas
ROW      right-of-way
RTP      Regional Transportation Plan
RWQCB    Regional Water Quality Control Board
SAFETEA-LU Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SB       Senate Bill
SCAG     Southern California Association of Governments
SCCIC    South Central Coastal Information Center
SCRRA    Southern California Regional Rail Authority
SCS      Sustainable Communities Strategy
SDC      Seismic Design Criteria
SER      Standard Environmental Reference
SF₆       sulfur hexafluoride
SHPO     State Historic Preservation Officer
SI       Site Investigation
SIP      State Implementation Plan
SO₂      sulfur dioxide
SO₄      sulfate
SOₓ      sulfur oxides
SPRR     Southern Pacific Railroad
SR       State Route
SSC      Species of Special Concern
SVP      Society of Vertebrate Paleontology
SWAMP    Surface Water Ambient Monitoring Program
SWANCC   Solid Waste Agency of North Cook County
SWMP     Storm Water Management Plan
SWPPP    Storm Water Pollution Prevention Plan
SWRCB    State Water Resources Control Board
TAC      toxic air contaminant
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<th>Acronym</th>
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<td>TASAS</td>
<td>Traffic Accident Surveillance and Analysis System</td>
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<td>TCE</td>
<td>temporary construction easement</td>
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<td>TDCs</td>
<td>targeted design constituents</td>
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<tr>
<td>TDS</td>
<td>total dissolved solids</td>
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<td>TMDL</td>
<td>total maximum daily load</td>
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<td>TMP</td>
<td>Traffic Management Plan</td>
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<td>TOD</td>
<td>transit-oriented development</td>
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<td>TSCA</td>
<td>Toxic Substances Control Act</td>
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<td>UPRR</td>
<td>Union Pacific Railroad</td>
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<td>USACE</td>
<td>United States Army Corps of Engineers</td>
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<td>USDOT</td>
<td>United States Department of Transportation</td>
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<td>USFWS</td>
<td>United States Fish and Wildlife Service</td>
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<td>USGS</td>
<td>United States Geological Survey</td>
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<td>UST</td>
<td>underground storage tank</td>
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<td>UWMP</td>
<td>Urban Water Management Plan</td>
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<td>VMT</td>
<td>vehicle miles traveled</td>
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<td>VOC</td>
<td>volatile organic compound</td>
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<td>VRP</td>
<td>visibility-reducing particles</td>
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<td>WDR</td>
<td>Waste Discharge Requirement</td>
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<td>WPCP</td>
<td>Water Pollution Control Plan</td>
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<td>WQO</td>
<td>water quality objective</td>
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<td>WQPT</td>
<td>Water Quality Planning Tool</td>
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Appendix G  Utility Conflict Matrix
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Appendix G  Utility Conflict Matrix

SR-138 (5th Street East to 10th Street East) Improvements Project  G-3


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December 22, 2016

VIA EMAIL

In reply refer to: FHWA_2016_1123_001

Kelly Ewing-Toledo  
Heritage Resources Coordinator  
Division of Environmental Planning  
Caltrans District 7  
100 South Main Street, Suite 100  
Los Angeles, CA 90012-3606

Subject: Determinations of Eligibility for the Proposed State Route 138 (5th Street East to 10th Street East) Improvements Project, Palmdale, Los Angeles County, CA

Dear Ms. Ewing-Toledo:

Thank you for consulting with me about the subject undertaking in accordance with the January 1, 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 (PA).

Caltrans, in cooperation with the City of Palmdale, proposes to widen SR-138 (East Palmdale Boulevard) between 5th Street East and 10th Street East from 2 lanes to 3 lanes in each direction and widening Sierra Highway from 2 lanes to 3 lanes in each direction between Avenue R and a point 500 feet south of Avenue Q. Extending an existing Class I bicycle lane and the addition of Class II bicycle lanes, sidewalks, and right and left turn pockets are proposed. A full project description and the description of the area of potential effect (APE) can be found on pages 1 and 2 of the HPSR.

Caltrans has determined that the following properties are not eligible for the listing in the National Register of Historic Places (NRHP):

- 38404 6th Street East, Palmdale, CA
- 927 East Palmdale Boulevard, Palmdale, CA
- 935 East Palmdale Boulevard, Palmdale, CA
- 943 East Palmdale Boulevard, Palmdale, CA
- 949 East Palmdale Boulevard, Palmdale, CA
- 838 East Palmdale Boulevard, Palmdale, CA
- 826 East Palmdale Boulevard, Palmdale, CA
Ms. Ewing-Toledo
December 22, 2016
Page 2 of 2

- 814 East Palmdale Boulevard, Palmdale, CA
- 922 East Palmdale Boulevard, Palmdale, CA
- 960 East Palmdale Boulevard, Palmdale, CA
- Sierra Highway (between East Avenue Q and East Avenue R)
- P-19-192304 – Palmdale Boulevard (SR-138) (between 5th Street East and 10th Street East; Palmdale to Victorville Road)
- 536 East Palmdale Boulevard, Palmdale, CA

Based on my review of the submitted documentation I concur with the above determinations.

Caltrans has also determined that P-19-18638 – Southern Pacific Railroad (SPRR) (between Avenue R and a point 200 feet south of Avenue Q) is not eligible for the NRHP due to a lack of integrity. I do not have enough information at this time to either agree or disagree with this determination. This segment is part of a much larger linear resource that may or may not be eligible for the NRHP. I recommend that in the interests of moving this project forward that Caltrans consider P-19-18638 eligible for the purposes of this project.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 with e-mail at natalie.lindquist@parks.ca.gov or Alicia Perez at (916) 445-7020 with e-mail at alicia.perez@parks.ca.gov.

Sincerely,

[Signature]

Julianne Polanco
State Historic Preservation Officer
January 3, 2017

Alexandra Bevk Neeb
Section 106 Coordinator
Caltrans Division of Environmental Analysis
1120 N Street, MS 27, Sacramento, CA 95814
alexandra.bevk@dot.ca.gov
(916) 654-3567

Re: FHWA_2016_1123_001 Determinations of Eligibility for the Proposed State Route 138 (5th Street East to 10th Street East) Improvements Project, Palmdale, Los Angeles, County, CA

Dear Ms. Bevk Neeb:

The California Department of Transportation (Caltrans), in cooperation with the City of Palmdale, proposes to widen SR-138 (East Palmdale Boulevard) between 5th Street East and 10th Street East from 2 lanes to 3 lanes in each direction and widening Sierra Highway from 2 lanes to 3 lanes in each direction between Avenue R and a point 500 feet south of Avenue Q (see Project Vicinity, Location, and Area of Potential Effects (APE) Maps in previously submitted Historic Property Survey Report (HPSR), Attachment A. Extending an existing Class I bicycle lane and the addition of Class II bicycle lanes, sidewalks, and right and left turn pockets are proposed. A full project description and the description of the APE can be found on pages 1 and 2 of the HPSR.

Caltrans District 7 Staff has received a response (FHWA_2016_1123_001) from the State Office of Historic Preservation (SHPO) regarding our request for concurrence on eligibility findings for the project. The SHPO reviewer disagreed with our findings that P-19-180638 (henceforth corrected as P-19-180638)—the Southern Pacific Railroad (SPRR—currently the Union Pacific Railroad [UPRR]) (between Avenue R and a point 200 feet south of Avenue Q) is not eligible for the National Register of Historic Places (NHRP) due to a lack of integrity. The SHPO reviewer stated that she “does not have enough information at this time to either agree or disagree with this determination” and also states that “this segment is part of a much larger linear resource that may or may not be eligible for the NRHP.” Furthermore, she recommends “in the interests of moving this project forward that Caltrans consider [P-19-180638] eligible for the purposes of this project.”

Pursuant to the January 2014 First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, As it Pertains to the Administration of the Federal-Aid Highway Program in California (hereafter the 106 PA), Caltrans can assume eligibility under Stipulation VIII.C(4) when special circumstances preclude their complete evaluation, such as restricted access, large property size, or limited potential for effects. Based on the project description, Caltrans District 7 staff will assume eligibility of P-19-180638 for the purposes of this project and concludes that the proposed project has no potential for effects on the railroad. Although
January 3, 2017
SR-138 (5th Street East to 10th Street East) Improvements Project

the historic railroad is adjacent to the roadway and near the proposed sidewalk/bike path, nearby box culvert replacement, and signal/gate improvements, these improvements would not affect the historic railroad nor any part of what would be considered to be character-defining features associated with the historic railroad. Therefore, our previous Finding of No Historic Properties Affected, which was noted in our transmittal letter to SHPO, is still appropriate for this undertaking.

The previously submitted Historic Property Survey Report (HPSR) and Historical Resources Evaluation Report (HRER), and this letter serve as adequate Section 106 documentation, under 36 Code of Federal Regulations § 800.11(d), to document a Finding of No Historic Properties Affected.

If you have any questions or need any additional information, please contact Caprice "Kip" Harper at (213) 897-0676 or caprice.harper@dot.ca.gov or alternately contact Kelly Ewing-Toledo at 213.897.4095 or email at kelly.ewing-toledo@dot.ca.gov. Thank you for your assistance with this undertaking.

Sincerely,

[Signature]

Kelly Ewing-Toledo
Heritage Resources Coordinator
Division of Environmental Planning
Caltrans, District 7

Attachment: FHWA_2016_1123_001 Determinations of Eligibility for the Proposed State Route 138 (5th Street East to 10th Street East) Improvements Project, Palmdale, Los Angeles, County, CA

“Promote a safe, sustainable, integrated and efficient transportation system to enhance California’s economy and mobility.”
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List of Technical Studies  
(bound separately)

Air Quality Study Report, February 2017  
Archaeological Survey Report, October 2016  
Draft Relocation Impact Memorandum, August 2016  
Historic Property Survey Report, October 2016  
Historical Resources Evaluation Report, October 2016  
Initial Site Assessment Report, September 2016  
Natural Environment Study (Minimal Impacts), September 2016  
Noise Assessment Technical Memorandum, October 2016  
Public Outreach Report: Public Information Meeting, October 2016  
Traffic and Intersection Control Evaluation Study Report, August 2016