MEMORANDUM

May 31, 2017

To: Quin Chemnitz
   Associate Environmental Planner
   Caltrans District 7, Environmental Analysis
   100 South Main Street MS 16A
   Los Angeles, CA 90012

From: Agnieszka Napiatek, Project Manager
   Psomas

Subject: Avenue R Safety Improvement Project – Supplemental Response to Comments

The California Department of Transportation (Caltrans), in coordination with the City of Palmdale, proposes roadway improvements to Avenue R in the city of Palmdale.

The 30-day public review period for the Avenue R Safety Improvement Project’s Initial Study (IS)/Environmental Assessment (EA) occurred from December 16, 2016 to January 17, 2017. A Notice of Availability (NOA) that the environmental document was available for public review was published in a section of general readership in the Antelope Valley Press on December 16, 2017. Seven comment letters were received during the Public review period and responses to these comments are listed in Appendix K of the IS/EA. Following Public Review and Environmental document approval (Mitigated Negative Declaration and Finding of No Significant Impact) a comment letter from the Los Angeles County Fire Department was inadvertently left out of the IS/EA. The issues brought up in the comment letter relate to the compliance with the local fire code and do not raise environmental issues. Therefore, the comments do not change the analysis or require any modifications to the IS/EA. However, to ensure the file is comprehensive, the comments are being incorporated as an errata to the Final MND/FONSI.

Response to Comment Letter 8 from Los Angeles County Fire Department
Dated January 10, 2017

Response to Comment 8-1
This comment from the Planning Division and the Land Development Unit is noted. This comment provides an overview of the Fire Code compliance procedures and requirements for development projects. The Avenue R Safety Improvement Project is not a development project, but a roadway project. However, Fire Code compliance is mandatory, and the Fire Code requirements for access, fire flows, and location of hydrants will be addressed according to the local Fire Code. Fire hydrant spacing will comply with Appendix III-B of the 2016 County of Los Angeles Fire Code, as suggested. The Project is required to comply with all federal, State, and local code requirements.

Response to Comment 8-2
Coordination with all utility and emergency providers, including the Fire Department, is included in Section 2.1.4, Utilities/Emergency Services, of the IS/EA in measures UES-1 through UES-3. The Fire Department will be given sufficient opportunity to review the Project plans, including traffic calming.
devices. Coordination with the Fire Department will be conducted as described in standard provisions UES-2 and UES-3.

**Response to Comment 8-3**

This comment is noted. As discussed in the Section 2.1.5, Traffic and Transportation/ Pedestrian and Bicycle Facilities, of the IS/EA, no traffic detours or road closures are proposed during construction. Construction would be scheduled in the daytime hours between 7:00 AM and 3:00 PM and would last approximately 10 to 15 months. Lane closures would occur as a phased approach where a couple of blocks would be closed at a time. As described in standard provision UES-1, during Project design, the City of Palmdale and the Caltrans Right-of-Way Utilities Coordinator will coordinate with emergency providers. This type of coordination is a standard process during the design phase. As described in Section 2.1.4, Utilities/Emergency Services, of the IS/EA, the improvements would be constructed without disrupting operations. This would be done through standard engineering practices.

**Response to Comment 8-4**

This comment is noted; however no disruption of water service would occur as part of this Project.

**Response to Comment 8-5**

This comment from the Forestry Division is noted. Erosion-control impacts and watershed impacts are addressed in Section 2.2.1, Water Quality and Storm Water Runoff, of the IS/EA. Federally and State-listed Rare and Endangered Species impacts are discussed in Section 2.3.5, Threatened and Endangered Species. Vegetation and tree impacts are addressed in Section 2.3.1, Natural Communities, and Section 2.3.3, Plant Species. Fire Hazards are addressed in Section 2.2.4, Hazardous Water or Materials, and Archeological and Cultural resources impacts are addressed in Section 2.1.7, Cultural Resources.

**Response to Comment 8-6**

This comment from the Health Hazardous Materials Division is noted. This comment does not question the content or conclusions of the Draft IS, so no response is required.
January 10, 2017

Ron Kosinski, Deputy District Director
California Department of Transportation
Division of Environmental Planning
100 S. Main Street
Los Angeles, CA 90012

Dear Mr. Kosinski:

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION, NOTICE OF AVAILABILITY OF ENVIRONMENTAL ASSESSMENT, “AVENUE R COMPLETE STREET AND SAFETY IMPROVEMENT PROJECT,” TO IMPROVE A TWO-MILE SEGMENT OF AVENUE R WITH NEW PEDESTRIAN CROSSINGS, SIDEWALKS, NEW DEDICATED BIKE LANES, ADA-COMPLIANT RAMPS, AND UPGRADES TO BUS STOPS, WEST OF SIERRA HIGHWAY, PALMDALE, FFER 201600208

The Notice of Intent to Adopt a Mitigated Negative Declaration has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department.

The following are their comments:

PLANNING DIVISION:

We have no comments.

LAND DEVELOPMENT UNIT:

1. The proposed development may necessitate multiple ingress/egress access for the circulation of traffic and emergency response issues.
2. The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.

3. Every building constructed shall be accessible to Fire Department apparatus by way of access roadways with an all-weather surface of not less than the prescribed width. The roadway shall be extended to within 150 feet of all portions of the exterior walls when measured by an unobstructed route around the exterior of the building.

4. Fire Department requirements for access, fire flows, and hydrants are addressed during the building permit stage.

5. Fire hydrant spacing shall be based on fire flow requirements as outlined in the 2016 County of Los Angeles Fire Code Appendix III-B. Additional hydrants will be required if hydrant spacing exceeds specified distances.

6. Fire hydrant spacing shall be 300 feet and shall meet the following requirements:

   a) No portion of lot frontage shall be more than 200 feet via vehicular access from a public fire hydrant.

   b) No portion of a building shall exceed 400 feet via vehicular access from a properly spaced public fire hydrant.

   c) Additional hydrants will be required if hydrant spacing exceeds specified distances.

   d) When cul-de-sac depth exceeds 200 feet on a commercial street, hydrants shall be required at the corner and mid-block.

   e) A cul-de-sac shall not be more than 500 feet in length when serving land zoned for commercial use.

7. Fire hydrant spacing shall be 300 feet and shall meet the following requirements:

   a) No portion of lot frontage shall be more than 200 feet via vehicular access from a public fire hydrant.

   b) No portion of a building shall exceed 400 feet via vehicular access from a properly spaced public fire hydrant.
c) Additional hydrants will be required if hydrant spacing exceeds specified distances.

d) When cul-de-sac depth exceeds 200 feet on a commercial street, hydrants shall be required at the corner and mid-block.

e) A cul-de-sac shall not be more than 500 feet in length when serving land zoned for commercial use.

8. Turning radii shall not be less than 32 feet. This measurement shall be determined at the centerline of the road. A Fire Department approved turning area shall be provided for all driveways exceeding 150 feet in-length and at the end of all cul-de-sacs.

9. All on-site driveways/roadways shall provide a minimum unobstructed width of 28 feet clear-to-sky. The on-site driveway is to be within 150 feet of all portions of the exterior walls of the first story of any building. The centerline of the access driveway shall be located parallel to and within 30 feet of an exterior wall on one side of the proposed structure.

10. Driveway width for non-residential developments shall be increased when any of the following conditions will exist:

   a) Provide 34 feet in-width when parallel parking is allowed on one side of the access roadway/driveway. Preference is that such parking is not adjacent to the structure.

   b) Provide 42 feet in-width when parallel parking is allowed on each side of the access roadway/driveway.

   c) Any access way less than 34 feet in-width shall be labeled "Fire Lane" on the final recording map and final building plans.

   d) For streets or driveways with parking restrictions: The entrance to the street/driveway and intermittent spacing distances of 150 feet shall be posted with Fire Department approved signs stating "NO PARKING - FIRE LANE" in three-inch high letters. Driveway labeling is necessary to ensure access for Fire Department use.

11. Fire hydrant spacing shall be 300 feet and shall meet the following requirements:
a) No portion of lot frontage shall be more than 200 feet via vehicular access from a public fire hydrant.

b) No portion of a building shall exceed 400 feet via vehicular access from a properly spaced fire hydrant.

c) When cul-de-sac depth exceeds 200 feet hydrants will be required at the corner and mid-block.

d) Additional hydrants will be required if the hydrant spacing exceeds specified distances.

12. Turning radii shall not be less than 32 feet. This measurement shall be determined at the centerline of the road. A Fire Department approved turning area shall be provided for all driveways exceeding 150 feet in-length and at the end of all cul-de-sacs.

13. All proposals for traffic calming measures (speed humps/bumps/cushions, traffic circles, roundabouts, etc.) shall be submitted to the Fire Department for review prior to implementation.

14. Provide three sets of alternate route (detour) plans with a tentative schedule of planned closures prior to the beginning of construction. Complete architectural/structural plans are not necessary.

15. Disruptions to water service shall be coordinated with the County of Los Angeles Fire Department and alternate water sources shall be provided for fire protection during such disruptions.

The County of Los Angeles Fire Department Land Development Unit appreciates the opportunity to comment on this project.

**FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:**

The statutory responsibilities of the County of Los Angeles Fire Department’s Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed.
HEALTH HAZARDOUS MATERIALS DIVISION:

The Health Hazardous Materials Division of the Los Angeles County Fire Department has no comments or requirements for the project at this time.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

FRANK VIDALES, CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

FV:ac
AVENUE R SAFETY IMPROVEMENT PROJECT

LOS ANGELES COUNTY, CALIFORNIA
DISTRICT 7 - ATPL-5378(038)
Two-Mile Segment of Avenue R
Project Limits Extend from just west of Sierra Highway to 0.1 mile east of 25th Street East

Initial Study with Mitigated Negative Declaration/Environmental Assessment with Finding of No Significant Impact

Prepared by the
State of California Department of Transportation
and the City of Palmdale

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

April 2017
For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to the City of Palmdale, Attn: Mike Livingston, (661) 267-5167 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.
Provide safety improvements within a 2-mile-long segment of Avenue R generally between just west of Sierra Highway and 0.1 mile east of 25th Street East. Safety improvements include providing a continuous 6-foot-wide dedicated bike lane with buffer lane; closing sidewalk gaps; providing pedestrian crossings; creating a two-way left-turn lane in the midblock; and adding traffic-calming devices and ADA-compliant ramps in the vicinity of Tumbleweed Elementary School. Improvements would also include restriping lanes and existing crossings while matching the proposed road configuration to the existing roadway configuration at both the eastern and western ends and at local intersections.

Initial Study with Mitigated Negative Declaration/Environmental Assessment with Finding of No Significant Impact

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

THE STATE OF CALIFORNIA
Department of Transportation
and
The City of Palmdale

May 1, 2017
Date of Approval

Ron Kosinski
Deputy District Director
Division of Environmental Planning
California Department of Transportation
District 7 – Los Angeles

March 1, 2017
Date of Approval

Mike Mischel
Director of Public Works
City of Palmdale
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CALIFORNIA DEPARTMENT OF TRANSPORTATION
FINDING OF NO SIGNIFICANT IMPACT (FONSI)

AVENUE R SAFETY IMPROVEMENT PROJECT

FOR

The California Department of Transportation (Caltrans) has determined that Avenue R Build Alternative will have no significant impact on the human environment. This FONSI is based on the attached Environmental Assessment (EA) and supporting technical reports which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA.

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

Date May 1, 2017

[Signature]
Caltrans District Director
Mitigated Negative Declaration
Pursuant to: Division 13, Public Resources Code

Project Description
The California Department of Transportation (Caltrans) in cooperation with the City of Palmdale, proposes to provide safety improvements along an approximately two-mile segment of Avenue R from just west of Sierra Highway to just east of 25th Street East. The Project is located in the City of Palmdale in Los Angeles County.

Determination
The City of Palmdale has prepared an Initial Study for this Project, and following public review, has determined from this study that the Project would not have a significant effect on the environment for the following reasons:

- The Project would have no effect on the coastal zone, wild and scenic rivers, farmlands/timberlands, land use and planning, growth, recreation uses, a sole source aquifer, Section 6(f) resources, Section 4(f) resources, hydrology, visual/aesthetics, agriculture, cultural resources, tribal cultural resources, mineral resources, public services, and transportation/traffic. These resources are either not in the study area or would not be affected by the Project.

- There would be a less than significant effect on community and low income and minority populations. The Project is reflected in local documents and is located in an existing roadway. In addition, the Project would have less than significant effects on the following: utilities and service systems, biological resources, air quality, water quality, geology and soils, paleontological resources, hazards and hazardous materials, greenhouse gas emissions, noise, population and housing, and utilities and service systems.

- There would be a less than significant effect with mitigation on biological resources (wetland and sensitive vegetation communities).

Mike Mitchell
Director of Public Works
City of Palmdale

5/1/17
Date
Summary

Proposed Action
The California Department of Transportation (Caltrans), in cooperation with the City of Palmdale proposes improvements to an approximate two-mile segment of Avenue R from just west of Sierra Highway to just east of 25th East Street.

The Project is subject to federal and State environmental review requirements because the City of Palmdale proposes the use of federal funds from the Federal Highway Administration (FHWA). Project documentation, therefore, has been prepared in compliance with the National Environmental Policy Act (NEPA).

The City of Palmdale is the Project proponent and the lead agency under the California Environmental Quality Act (CEQA). FHWA’s responsibility for 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 the Surface Transportation Project Delivery Program also known as the Fixing America’s Surface Transportation Act (FAST Act) (23 USC 327). As a result of the temporary “Surface Transportation Project Delivery Pilot Program” (2007-2012) Caltrans entered into a memorandum of understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012 and terminates eighteen months from the effective date of FHWA regulations developed to clarify amendments to 23 USC 327 or on January 1, 2017. With NEPA Assignment, FHWA assigned and Caltrans assumed all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA. On December 23, 2016, FHWA renewed the Caltrans 23 USC NEPA Assignment MOU (327 MOU) for a term of 5 years. The FHWA published the 327 MOU in the Federal Register for a 30-day public comment period that ended on November 16, 2016. This renewal allows Caltrans to continue performing federal environmental responsibilities for highway projects under the National Environmental Policy Act (NEPA) and other federal laws.

As a condition of the 327 MOU, the FHWA requires California to consent to the jurisdiction of federal courts for actions taken by Caltrans under NEPA Assignment. To accomplish this, the Legislature added Section 820.1 to the Streets and Highways Code, waiving California’s immunity under the Eleventh Amendment to the U.S. Constitution. The Legislature included a sunset clause to delete Section 820.1 on January 1, 2017. On December 5, 2016, the Legislature convened the 2017-2018
Regular Session, and Assembly Bill (AB) 28 (Frazier) was introduced. On March 28, 2017 Governor Brown signed into law AB 28 (Frazier), which added Section 820.1 back to the California Street and Highway Code, reinstating the waiver of immunity and consent to the jurisdiction of federal courts for actions taken by Caltrans in performing federal environmental responsibilities under NEPA. The legislature included a sunset clause to repeal Section 820.1 on January 1, 2020.

Following receipt of comments from the public and reviewing agencies, a final environmental document has been prepared. This Initial Study/Environmental Assessment (IS/EA) complies with the requirements of CEQA and NEPA and other federal agency laws. Following the receipt of public comments on the IS/EA and the notice of public availability of the IS/EA, Caltrans has decided to issue a Finding of No Significant Impact and the City has decided to issue a Mitigated Negative Declaration.

**Project Overview**

The Project proposes to improve Avenue R by adding a dedicated bike lane and a left-turn lane midblock. It also proposes to add continuous pavement and ramps that are compliant with the Americans with Disabilities Act (ADA). The Project is located in the city of Palmdale in Los Angeles County, California.

The Project site spans approximately two miles and is currently developed and classified as a major arterial roadway. Within the Project limits, Avenue R is a two-lane arterial in each direction, with dedicated right- and left-turn lanes. The posted speed limit on Avenue R is 50 miles per hour (mph) west of 5th Street East and 40 mph east of 5th Street East.

Land uses in the study area are predominately residential, with public (e.g., church) and some commercial uses located in the western portion of the study area. The majority of the houses in the study area face Avenue R, although some of these residences take access from alleys behind the houses or from side streets. On-site vegetation is limited to the ornamental landscaping in the residential and commercial areas adjacent to Avenue R. Rubber rabbitbrush scrub natural plant communities and riparian vegetation (black willow thicket) are located along the vacant parcels in the drainages that cross Avenue R.
Alternatives Considered
This IS/EA evaluates two alternatives: the Build Alternative (Preferred Alternative) and the No-Build Alternative. After Public Review period the Preferred Alternative was selected by Caltrans and the City of Palmdale.

Build Alternative (Preferred Alternative)
The major Project components are the Class II bike lane on the northern and southern sides of Avenue R, new continuous sidewalks (which will close the sidewalk gaps), and ADA-compliant ramps at all intersections. In addition, the Project would create a two-way left-turn lane and provide a “refuge” for left-turning cars and bicycles at mid-block. The Project also proposes to restripe the entire Project segment, including crosswalks/pedestrians crossings at Sierra Highway, 10th Street East, 11th Street East, 20th Street East, and 25th Street East. Bus stops along Avenue R will be upgraded to bus turnouts.

No-Build (No-Action) Alternative
With the No-Build Alternative, there would be no improvements to Avenue R.

Identification of the Preferred Alternative
The Project Development Team (PDT) evaluated the environmental impacts associated with the Avenue R Safety Improvement project as outlined in this EA including the comment letters received during the public review period (all comment letters and responses are provided in Appendix K). The PDT weighed the ability of the alternatives to meet the project objectives and recommended the Build Alternative as the Preferred Alternative. This determination is discussed in Chapter 1.

Summary of Potential Impacts
The following table provides a brief comparison of the impacts associated with the Build Alternative (Preferred Alternative) and the No-Build Alternative.
### Table S.1 Summary of Major Potential Impacts from Alternatives

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Build Alternative (Preferred Alternative)</th>
<th>No-Build Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use</td>
<td>Consistent. No impacts.</td>
<td>Not consistent.</td>
</tr>
<tr>
<td>Consistency with the City of Palmdale General Plan</td>
<td>Consistent. No impacts.</td>
<td>Not consistent.</td>
</tr>
<tr>
<td>Growth</td>
<td>No impacts.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Community Character and Cohesion</td>
<td>No Impacts. Beneficial effects in terms of community connectivity would occur.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Relocation</td>
<td><strong>Business displacements</strong> The Build Alternative would displace 2 businesses.</td>
<td>No impacts.</td>
</tr>
<tr>
<td></td>
<td><strong>Housing displacements</strong> The Build Alternative would displace 6 residential properties.</td>
<td>No impacts.</td>
</tr>
<tr>
<td></td>
<td><strong>Utility service relocation</strong> Utilities may need to be moved as part of the highway widening.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Environmental Justice</td>
<td>No impacts. Beneficial effects in terms of community connectivity would occur.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Utilities/Emergency Services</td>
<td><strong>Utilities</strong> Utilities would be moved, but there would be no noticeable service disruptions.</td>
<td><strong>Utilities</strong> No Impacts.</td>
</tr>
<tr>
<td></td>
<td><strong>Emergency Services</strong> Short-term traffic delays could occur due to construction activities.</td>
<td><strong>Emergency Services</strong> There would be no short-term or long-term impacts.</td>
</tr>
<tr>
<td></td>
<td>No long-term impacts to emergency providers’ level of service will occur.</td>
<td></td>
</tr>
<tr>
<td>Traffic and Transportation/Pedestrian and Bicycle Facilities</td>
<td>As a result of the Build Alternative (Preferred Alternative), pedestrian facilities will be improved and bicycle facilities will be provided. Bus stops will be upgraded to turnouts.</td>
<td>The No-Build Alternative would not improve the existing conditions along Avenue R.</td>
</tr>
<tr>
<td>Visual/Aesthetics</td>
<td>No major visual changes are proposed. Visual impacts would be low.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>The Build Alternative (Preferred Alternative) would not impact cultural resources.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Water Quality</td>
<td>The Build Alternative (Preferred Alternative) would not violate water quality standards.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Geology</td>
<td>No impacts. The Project is located in a seismic region. Two standard conditions are required.</td>
<td>No impacts.</td>
</tr>
</tbody>
</table>
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<tbody>
<tr>
<td>Paleontology</td>
<td>Potential for impacts to paleontological resources exists, and minimization measures are recommended.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Hazardous Waste/Materials</td>
<td>No impact by implementing existing regulations and requirements for handling construction materials (e.g., testing for aerially deposited lead, lead-based paint, asbestos containing materials, treated wood waste, PCBs) and construction equipment.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Air Quality</td>
<td>The Project is exempt from conformity because the Project is a safety improvement Project, per 40 CFR 93.126. Construction phase pollutant emissions would be less than Antelope Valley Air Quality Management District (AVAQMD) thresholds. Avoidance and minimization measures would apply to minimize fugitive dust and Valley Fever health impacts.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Noise</td>
<td>The Project is not a Type I Project and, as a result, it is exempt from analysis under NEPA. A temporary increase in noise during Project construction will occur. No long-term increase in noise will occur. Standard avoidance and minimization measures would apply to minimize construction noise.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Natural Communities</td>
<td>The Build Alternative (Preferred Alternative) would impact a total of 0.13 acre of rubber rabbitbush scrub and 0.02 acre of black willow thicket. Minimization and Mitigation Measures are recommended.</td>
<td>No impacts.</td>
</tr>
</tbody>
</table>
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<tr>
<td>Wetlands and other Waters</td>
<td>The Build Alternative (Preferred Alternative) would permanently affect 0.002 acre and temporarily affect 0.004 acre of areas under the jurisdiction of the Regional Water Quality Control Board and would permanently affect 0.023 acre, and temporarily affect 0.054 acre of California Department of Fish and Wildlife jurisdictional areas. Minimization and Mitigation Measures are recommended.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Plant Species</td>
<td>No impacts are expected.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Animal Species</td>
<td>With incorporation of Avoidance and Minimization Measures, there would be less than substantial impact to habitats for non-listed, special status wildlife species, including the silvery legless lizard, coast horned lizard, Cooper's hawk, Bell's sage sparrow, burrowing owl, ferruginous hawk, merlin, and loggerhead shrike. Preconstruction surveys for silvery legless lizard and coast horned lizard during vegetation removal are recommended. In addition, a nesting bird survey, a nesting raptors survey, protective nesting bird and raptor buffers, preconstruction burrowing owl surveys, and preconstruction Swainson’s Hawk surveys during vegetation removal during the nesting season are recommended. No impacts to federally and/or State Threatened species is expected (Swainson’s Hawk and Mohave Ground Squirrel). A monitoring biologist is recommended during vegetation-removal activities and to conduct a site inspection and Workers Environmental Awareness Program (WEAP) training for Mohave ground squirrel.</td>
<td>No impacts.</td>
</tr>
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<tbody>
<tr>
<td>Threatened and Endangered Species</td>
<td>Limited potentially suitable foraging and nesting habitat for Swainson’s hawk is present and thus avoidance and minimization measures are recommended. No impact to Mohave ground squirrel is expected, but standard wildlife species monitoring during construction is recommended.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Invasive Species</td>
<td>With incorporation of avoidance and minimization measures, no impacts are expected.</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Cumulative Impacts</td>
<td>There would be temporary impacts associated with construction activities, potential traffic delays, dust and air emissions from construction vehicles, and construction noise.</td>
<td>No impacts.</td>
</tr>
</tbody>
</table>

Measures have been identified to reduce the impact of the Project. Many of these are standard conditions; standard conditions are measures that would apply to all projects to help avoid or minimize impacts.

Standard conditions are often regulations that have been adopted by State, regional, or local agencies. In addition, mitigation measures that have been recommended for this Project would reduce the impacts. Avoidance, minimization and mitigation measures are identified at the end of each section of this document and are summarized in Appendix L.
Summary

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), in cooperation with the City of Palmdale, proposes safety improvements along an approximate two-mile-long segment of Avenue R located in the City of Palmdale in Los Angeles County.

The Project limits begin just west of Sierra Highway and end about 0.1 mile (560 feet) east of 25th Street East. In addition, one intersection at 11th Street East and Avenue R-4 will be improved with new pedestrian crossings, sidewalks, and curb ramps (bulb out improvement) to provide safe access to Tumbleweed Elementary School. Figure 1-1 provides a Regional Vicinity Map, and Figure 1-2 provides the Project Location Map.

The Project was approved for federal funding from the Safe Routes to School Program and is identified as ID LA–0458–Ave R Complete Streets and Safe Routes in the 2014 Active Transportation Program (ATPL) Statewide Component, adopted on August 20, 2014. The Project is a part of Active Transportation Program and identified as the ATPL-5378(038).

The City of Palmdale is the lead agency for the Project pursuant to the California Environmental Quality Act (CEQA), and Caltrans is the lead agency for the National Environmental Policy Act (NEPA). Effective July 1, 2007, Caltrans has been assigned environmental review and consultation responsibilities under NEPA pursuant to 23 United States Code 327.

The Project was found consistent with the Southern California Associations of Governments’ (SCAG’s) 2012–2035 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS) and Long Range Transportation Program (LRTP), which identifies active transportation as a key component of these programs by the Los Angeles County Metropolitan Transportation Authority (METRO) in a letter dated May 12, 2014. The Project was included in 2016–2040 RTP/SCS which was approved on April 7, 2016, as Regionwide Active Transportation project RTP ID7120004.
1.2 Purpose and Need

1.2.1 Purpose

The Project’s purpose is to provide a safer corridor along Avenue R for local students by providing a two-way left-turn lane; providing dedicated Class II bike lanes; closing sidewalk gaps; and constructing bus turnouts along the Project reach. By connecting gaps in the sidewalk and providing bicycle facilities, the Project will encourage school children and commuters to use active forms of transportation. A full length sidewalk would provide connectivity, consistency and mobility, particularly to school children, on both sides of Avenue R.

The purpose of the Project is the following:

- Provide services to students within 1.5 miles of schools not served by existing bus service to engage in safe walking and biking.
- Improve safety for pedestrians (students) and bicyclists along Avenue R.
- Close sidewalk gaps, provide crosswalks, and construct bus turnouts to provide enhanced access to public transit.
- Provide a Class II Bike Lane along the Project segment.
- Reduce the number of idling vehicles picking up and dropping off school students.

1.2.2 Need

The Palmdale School District cannot afford to bus all students. To reduce transportation by bus, students within 1.5 miles of the school are required to either walk, ride a bicycle, or arrange for personal transportation to school. Avenue R in the Project area is currently a four-lane (two lanes in each direction) arterial with limited sidewalks and limited room for bike lanes, which has resulted in a number of vehicle collisions with pedestrians and bicyclists. There are locations along the Project site where the sidewalks and shoulders are nonexistent, which forces pedestrians to walk either on uneven surfaces or adjacent to existing travel lanes. This creates a less than optimal environment for pedestrians, including students walking to school. The City General Plan recognizes that the sidewalk system in the City is discontinuous and is in need of improvement. Avenue R is designated as a bike route in the General Plan, and a designated Class II bike lane exists to the east and west of the Project limits. The Project is designed to close this gap within the subject segment between Sierra Highway and 25th Street East. By connecting gaps in bicycle facilities, the Project will encourage school children and commuters to use this form of active transportation.
1.2.2.1 **EXISTING ROADWAY DEFICIENCIES AND PROJECTED DEMAND**

The effectiveness of traffic operations on a transportation facility is measured in terms of “level of service”, with level of service (LOS) A representing the best operating conditions and LOS F representing the worst. Figure 1-3a provides Level of Service descriptions for signalized intersections, and Figure 1-3b provides Level of Service descriptions for unsignalized intersections. However, within the Project segment, the lane widths are inadequate to safely accommodate a mix of bicycle and vehicle traffic. In addition, there are inadequate traffic control devices, inadequate crosswalks, and sidewalks gaps, which force pedestrians to walk within the road right-of-way. School signs in the area are also outdated.

According to the 2012 *Final Environmental Impact Report, City of Palmdale Housing Element Update*, Avenue R operates at the highest Level of Service: LOS A. If planned growth in the City occurs, Avenue R will operate at LOS B and C in 2040. Therefore, Avenue R will not experience LOS operational deficiencies.

1.2.2.2 **SAFETY**

Improvement of safety is the main goal of the Project. The Project was approved for federal funding from the Safe Routes to School Program and is identified as ID LA–0458–Ave R Complete Streets and Safe Routes in the 2014 ATPL Statewide Component, which was adopted on August 20, 2014.

In its ATPL Application (Part 1) dated May 21, 2014, the City of Palmdale identified that, between 2001 and 2011, there were 13 non-motorized collisions (8 pedestrians and 5 bicyclists) within approximately 500 feet of Avenue R between Sierra Highway and 25th Street East resulting in injuries. An average of 24 percent of pedestrian collisions in the City of Palmdale were a result of illegal pedestrian crossing (pedestrian violations).

1.2.2.3 **SOCIAL DEMANDS OR ECONOMIC DEVELOPMENT**

The County of Los Angeles and the City of Palmdale have experienced substantial growth over the past 40 years. The Project study area is relatively built out with few undeveloped parcels located along Avenue R. The Project, by its nature, is a safety improvement project and does not propose the addition of through lanes; as such, it would not open new areas to unplanned residential or related commercial growth (development). The Project would not affect the location, distribution, density, or projected growth rate of the population.
Chapter 1 • Proposed Project

The City of Palmdale General Plan identifies Avenue R as a Major Arterial, which operates at LOS A, but does not propose major operational improvements along the Project segment. Some operational improvements are identified along other segments of Avenue R, outside the Project area. The General Plan recognizes the existing sidewalk deficiencies within the subject segment of Avenue R and recommends their improvement.

The General Plan identifies residential uses and a mix of commercial, office, and public land uses in the Project study area. The Project would acquire few of the existing residential land uses for transportation related land uses, but is not expected to act as a catalyst to growth and would not contribute to changes in land use patterns.

Modal Interrelations and System Linkages

Avenue R is classified as a Major Arterial by the City of Palmdale and extends from west to east from Tierra Subida Avenue (Palmdale) to approximately 47th Street East (Los Angeles County). In the City of Palmdale, it has four lanes between 6th Street East and 20th Street East; it has two eastbound lanes and one westbound lane between 20th Street East and 22nd Street East; and it has four lanes between 22nd Street East and 30th Street East. The subject segment of Avenue R is located on the east side of interregional connector State Route (SR) 14 in Palmdale. Even though Avenue R is a Major Arterial, it does not have an interchange with SR-14, and thus it mostly carries local traffic. Two nearby arterials—Avenue S on the south and Palmdale Boulevard on the north—have interchanges with SR-14 and serve as direct connectors to the freeway.

Independent Utility and Logical Termini

Federal Highway Administration (FHWA) regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the following actions be evaluated:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope.
2. Have independent utility or independent significance (be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made).
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.
Regional Location
Avenue R Safety Improvement Project
ATPL-5378(038)

Figure 1-1
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Intersections with Traffic Signals

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Delay per Vehicle (seconds)</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>≤10</td>
</tr>
<tr>
<td>B</td>
<td>11-20</td>
</tr>
<tr>
<td>C</td>
<td>21-35</td>
</tr>
<tr>
<td>D</td>
<td>36-55</td>
</tr>
<tr>
<td>E</td>
<td>56-80</td>
</tr>
<tr>
<td>F</td>
<td>&gt;80</td>
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Factors Affecting LOS of Signalized Intersections

Traffic Signal Conditions:
- Signal Coordination
- Cycle Length
- Protected left turn
- Timing
- Pre-timed or traffic activated signal
- Etc.

Geometric Conditions:
- Left- and right-turn lanes
- Number of lanes
- Etc.

Traffic Conditions:
- Percent of truck traffic
- Number of pedestrians
- Etc.

Source: Caltrans 2016
## Level of Service Descriptions

### Avenue R Safety Improvement Project

Source: Caltrans 2016

### Unsignalized Intersections

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Flow Conditions</th>
<th>Delay per Vehicle (seconds)</th>
<th>Technical Descriptions</th>
</tr>
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<tr>
<td>A</td>
<td><img src="image1" alt="Image" /></td>
<td>&lt;10</td>
<td>Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Very short delay</strong></td>
</tr>
<tr>
<td>B</td>
<td><img src="image2" alt="Image" /></td>
<td>10-15</td>
<td>Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>No delays</strong></td>
</tr>
<tr>
<td>C</td>
<td><img src="image3" alt="Image" /></td>
<td>15-25</td>
<td>Stable traffic flow, but less freedom to select speed, change lanes or pass.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Minimal delays</strong></td>
</tr>
<tr>
<td>D</td>
<td><img src="image4" alt="Image" /></td>
<td>25-35</td>
<td>Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Minimal delays</strong></td>
</tr>
<tr>
<td>E</td>
<td><img src="image5" alt="Image" /></td>
<td>35-50</td>
<td>Unstable traffic flow. Speeds change quickly and maneuverability is low.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Significant delays</strong></td>
</tr>
<tr>
<td>F</td>
<td><img src="image6" alt="Image" /></td>
<td>&gt;50</td>
<td>Heavily congested traffic. Demand exceeds capacity and speeds vary greatly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Considerable delays</strong></td>
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The Avenue R Safety Improvement Project meets these criteria. The Project would provide sidewalk continuity; a bike lane to enable alternative traffic movement; and safe pedestrian crossings. These features currently do not provide an optimal environment for pedestrians and bicyclists due to either outdated design or gaps in the system along the subject segment of Avenue R. Avenue R is designated as an adopted master plan route for bike movement; however no bike lanes exist within the Project segment. Bike lanes exists east and west of the Project segment, and the Project will close this gap and will bring Avenue R to compliance with General Plan. As a result, along the Project segment, the existing sidewalk gaps will be closed. No further improvements are needed on Avenue R to derive full function of the improvements.

1.3 Project Description

This section describes the proposed action and the design alternatives that were developed by a multi-disciplinary team to achieve the Project’s purpose and need while avoiding or minimizing environmental impacts. The purpose and need of the Project is to provide a bicycle lane and sidewalk and to enhance safety conditions along Avenue R. The alternatives are the Build Alternative (Preferred Alternative) and the No-Build Alternative.

The Project is located in the City of Palmdale on Avenue R. The Project covers a distance of approximately two miles. Within the Project limits, Avenue R is a two-lane arterial in each direction, with dedicated right- and left-turn lanes. According to the City of Palmdale’s, General Plan Circulation Element, Avenue R is considered a Major Arterial, which is defined as roadway spaced at approximately one-mile intervals, which represent the major carrying capacity for traffic to and within the City.

1.3.1 Alternatives

This section describes the proposed action that was developed to meet the identified need through accomplishing the defined purposes, while avoiding or minimizing environmental impacts. One Build Alternative (Preferred Alternative) and a No-Build Alternative have been evaluated. The selection of an alternative is based on how well each alternative is able to meet the Project’s purpose and need. Other factors considered in the selection of an alternative include impacts to the community and environment and the total cost. Caltrans and the City of Palmdale have considered all the comments that were received during the public review period, including those received after Public review. The changes to this document pursuant to the public comments are identified by track change lines located on the outside border of the page.
1.3.1.1 **BUILD ALTERNATIVE (PREFERRED ALTERNATIVE)**

The City of Palmdale, in coordination with Caltrans, proposes improvements on an approximate two-mile segment of Avenue R just west of Sierra Highway to 0.1 mile east of 25th Street East. In the Project study area, Avenue R is an east-west roadway; Sierra Highway and 25th Street East are north-south roadways. The Project site is located in the City of Palmdale in Los Angeles County, California (see Figures 1-1 and 1-2).

The Project would eliminate sidewalk gaps to provide a safer environment for pedestrians including school students. Widening of Avenue R also includes a Class II bike lane on the northern and southern sides of the street and is intended to reduce the potential for collision between bicycles and pedestrians. Creating a two-way left-turn lane will provide “refuge” for left-turning cars and bicycles at mid-block. Refer to Figures 1-4a through 1-4h, Project Design.

**Design Features**

The following are the features of the Build Alternative (Preferred Alternative):

- A continuous bike lane along northern and southern sides of Avenue R between Sierra Highway and 25th Street East.
- A new sidewalk along the northern and southern sides of Avenue R where gaps exist.
- Restriping of the entire Project segment; this includes crosswalks as well as pedestrian crossings at Sierra Highway, 10th Street East, 11th Street East, 20th Street East, and 25th Street East.
- Construction of five segments of slough walls at varying heights up to four feet along Avenue R to minimize grading impacts, thus minimizing the need for right-of-way acquisition.
- Curb extension improvements (a traffic-calming feature) and improvements to pedestrian crossings involving crosswalks and curb ramps that are compliant with the Americans with Disabilities Act (ADA), which are located at East Avenue R4 by Tumbleweed Elementary School.
Figure 1-4b
Avenue R Safety Improvement Project
LA-7-Avenue R
ATPL-5378(038)
Aerial Source: LAR-IAC 2014

Project Design

- New Sign Location
- Relocated Sign (Origin)
- Relocated Sign (Destination)
- Proposed Sidewalk
- Proposed Slough Wall
- Proposed Pedestrian Crossing
- Bulb Out Improvements
- Proposed Striping
- Proposed Bike Lane
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Figure 1-4c
Avenue R Safety Improvement Project
LA-7-Avenue R
ATPL-5378(038)
Aerial Source: LAR-IAC 2014

- New Sign Location
- Relocated Sign (Origin)
- Relocated Sign (Destination)
- Proposed Sidewalk
- Proposed Slough Wall
- Proposed Pedestrian Crossing
- Bulb Out Improvements
- Proposed Striping
- Proposed Bike Lane

Project Design

New Sign Location
Relocated Sign (Origin)
Relocated Sign (Destination)
Proposed Sidewalk
Proposed Slough Wall
Proposed Pedestrian Crossing
Bulb Out Improvements
Proposed Striping
Proposed Bike Lane
This page intentionally left blank
Figure 1-4f

Avenue R Safety Improvement Project

LA-7-Avenue R

ATPL-5378(038)

Aerial Source: LAR-IAC 2014

Project Design

New Sign Location
Relocated Sign (Origin)
Relocated Sign (Destination)
Proposed Sidewalk
Proposed Slough Wall
Proposed Pedestrian Crossing
Bulb Out Improvements
Proposed Striping
Proposed Bike Lane
Project Design

Avenue R Safety Improvement Project
LA-7-Avenue R
ATPL-5378(038)
Aerial Source: LAR-IAC 2014

Figure 1-4g
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Other Improvements
Along with the roadway widening, there would also be the following changes:

- Traffic signals and signage would need to be relocated/replaced at several locations along Avenue R to accommodate proposed paved sidewalks at curb returns. The traffic signal at 11th Street East will be modified.
- Relocation of utilities and drainage facilities (aboveground utilities such as utility poles, storm drain catch basins, and inlets).
- Installation of bus stop turnouts/bays on the north side of the street by the intersections of 11th Street East, 15th Street East, 17th Street East, 20th Street East, and 25th Street East; on the south side of 10th Street East; on Palm Vista Avenue between Palm Vista Avenue and Lasker Street; between Melton Avenue and 17th Street East; along 20th Street East; and along 25th Street East. These bus stop areas are located between 20 and 250 feet away from the intersections.
- Storm drain improvements. Consistent with the City’s Master Plan of Drainage, subsequent, independent projects will construct a 36- to 54-inch underground storm drain pipe to join a 96-inch diameter storm drain on 15th Street East. A 78-inch diameter pipe will collect drainage east of 15th Street East and channel it underground to join a 9.0-foot by 8.5-foot Reinforced Concrete Box (RCB) structure north of Avenue R on 20th Street East.

Construction Phasing
The depth of the excavation for the Avenue R Project is expected to be between 1 and 3 feet, with excavation up to ten feet for storm drain improvements. Construction for the entire Project is expected to be completed within approximately ten months. All construction would occur between 7AM and 3PM. Avenue R will remain open within the Project limits during construction. At least one lane will be opened in each direction. Construction will be accomplished in a rolling sequence in order to minimize inconvenience to adjoining residents and businesses. Construction will be limited to a block length at a time to minimize construction-related impacts. Temporary lane closures and parking restrictions may occur during Project construction for a week or two at each block. A Traffic Management Plan (TMP) will be implemented to mitigate construction impacts to vehicles and pedestrians. Access to all properties will be provided during construction.
Construction in the Drainages
Construction of drainage features is expected to be completed within a month. The existing culverts will be extended to accommodate the proposed pavement, the bike lane, and the sidewalk. No dewatering will be required. Extension of the drainage structure will be accomplished by joining the existing headwall with in-kind, beveled, reinforced concrete openings at both inlet and outlet points. Construction-related Best Management Practices (BMPs) will be implemented to ensure that all stream flows would be diverted away from construction activities and would not create additional runoff.

Right-of-Way Acquisitions
The Build Alternative (Preferred Alternative) will impact approximately 48 properties along the 2-mile segment of Avenue R. Specifically, the Project will acquire 9 parcels as full parcel acquisitions, 39 parcels as partial acquisitions, and approximately 16 Temporary Construction Easements (TCEs).

The cost estimate for the road widening is about $4.7 million, which includes about $2.2 million for construction costs and $2.5 million for right-of-way costs.

1.3.1.2 No-Build (No-Action) Alternative
The No-Build Alternative would not provide any safety improvements to Avenue R. The environmental review considers the effects of not implementing the Project. The No-Build Alternative provides a baseline for comparing the impacts associated with the Build Alternative (Preferred Alternative). The No-Build Alternative does not meet the Project’s purpose and need as it would not provide safety improvements causing potential for new accidents and collisions between pedestrians/bicyclists and vehicles.

1.3.2 Comparison of Alternatives
Table 1 provides a comparison of the impacts with the Build Alternative (Preferred Alternative) and the No-Build Alternative for each of the topics analyzed in this environmental document. Table 1 compares the Project alternatives based on the criteria used for evaluating the Project alternatives.
Table 1  Comparison of Alternatives

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Build Alternative (Preferred Alternative)</th>
<th>No-Build Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meets the Project purpose and need</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Provides current and future improved safety</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>for pedestrians and bicycle traffic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requires acquisition of the least amount of</td>
<td>Number of Parcels</td>
<td>Number of Parcels</td>
</tr>
<tr>
<td>right-of-way</td>
<td>Affected</td>
<td>Affected</td>
</tr>
<tr>
<td></td>
<td>9 full, 39 partial, 16 TCEs</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Number Acres</td>
<td>Number Acres</td>
</tr>
<tr>
<td></td>
<td>4.33 acres</td>
<td>0.00 acres</td>
</tr>
<tr>
<td>Avoids substantial environmental effects</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost of Alternative</td>
<td>$4.7 million</td>
<td>$0</td>
</tr>
<tr>
<td>TCE: Temporary Construction Easement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After the public circulation period, all comments were considered; the City has selected a preferred alternative and has made the final determination of the Project’s effect on the environment. In accordance with the California Environmental Quality Act (CEQA), no unmitigable significant adverse impacts are identified and, therefore, the City of Palmdale has issued a Mitigated Negative Declaration. Similarly, Caltrans has determined that the action does not significantly impact the environment, and thus Caltrans, as assigned by the FHWA, has issued a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

1.3.3 Identification of a Preferred Alternative

The PDT evaluated the environmental impacts associated with the Avenue R Safety Improvement project as outlined in this EA, including the comment letters received during the public review period (all comment letters and responses are provided in Appendix K). The PDT weighed the ability of the alternatives to meet the project objectives and recommended the Build Alternative as the Preferred Alternative.

The Lead Agency has selected the Preferred Alternative because it meets the Project Purpose and Need. The Build Alternative is also in line with the overall intent of the ATPL program of encouraging local communities to walk and use alternative means of transportation. The Preferred Alternative provides much needed safety improvements for the students living in the area in terms of pedestrian crosswalks, a continuous sidewalk along Avenue R, and bike lane while avoiding significant environmental impacts. With implementation of the Build Alternative, students would be able to either walk or bike to school, and the overall walkability along Avenue R would be enhanced. By providing all featured improvements, the Build Alternative is expected to remove pedestrians and bicyclists from travel lanes and, consequently, to greatly reduce the
potential for collisions. Based on all these improvements and benefits, and in consideration with the letters received during public review, the PDT decided that the Build Alternative becomes the Preferred Alternative.

1.3.4 Alternatives Considered but Eliminated from Further Discussion
One alternative was considered for this Project but was eliminated due to right-of-way impacts. This alternative included one 12-foot center dual left-turn lane, two 12-foot through lanes, and a 6-foot bike lane. This alternative would result in right-of-way acquisitions of nine properties, including seven residential buildings and one business, and one vacant lot. Under this Alternative, the existing roadway cross-section at 9th Street East was maintained to avoid impacting the northeast corner at Avenue R and 9th Street East, where liquor store is located. This design proposed to close sidewalk gaps on the south side of Avenue R by expanding the pavement area to the south, which would require a full-take of a residential property at the southwest corner of 10th Street East and Avenue R.

1.3.5 Transit and Transportation System Management Alternative
Palmdale School District does not provide bus service for students who live within 1.5 miles of a school. Currently, Antelope Valley Transit Authority (AVTA) runs Bus Route 3 along Avenue R. An alternative that provides solely transit improvements would not meet the Project objectives of enhancing safe routes to schools and providing safe pedestrian environment for students. Additionally, the Project does provide for transit improvements. Specifically, it would provide for a continuous pedestrian sidewalk, pedestrian crossings, and bus turnouts to enhance safety and encourage use of the transit system. Installation of bus stop signs and turnouts/bays on the northern and southern sides of the street would improve the conditions of the existing transportation system.

1.4 Permits and Approvals Needed
The permits, reviews, and approvals required for the Project construction are provided in Table 2.
### Table 2  Project Permits and Approvals

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CDFW</strong></td>
<td>Section 1602 Streambed Alteration Agreement pursuant to Section 1600 of the <em>California Fish and Game Code.</em></td>
<td>A jurisdictional delineation has been completed; Caltrans will schedule a pre-application field meeting, and the Section 1602 Agreement will be finalized before construction.</td>
</tr>
<tr>
<td><strong>SWRCB</strong></td>
<td>NPDES Construction General Permit</td>
<td>The permit is required before construction begins.</td>
</tr>
<tr>
<td></td>
<td>NPDES Caltrans Stormwater permit (WQO 2012-0011-DWQ)</td>
<td>The permit may be required before construction begins.</td>
</tr>
<tr>
<td><strong>RWQCB (Lahontan Region)</strong></td>
<td>NPDES MS4 Permit (WQO 2013-0001-DWQ)</td>
<td>The permit may be required before construction begins if an exemption letter from the Lahontan RWQCB is not applicable.</td>
</tr>
<tr>
<td></td>
<td>Section 401 Certification pursuant to the Clean Water Act.</td>
<td>The permit will be obtained before construction begins.</td>
</tr>
<tr>
<td>City of Palmdale</td>
<td>CEQA-compliance document</td>
<td>The City is the lead agency for the CEQA portion of the IS/EA. The City of Palmdale has received preliminary design information and technical studies to ensure the Project meets the needs of the local jurisdictions. The permit will be acquired after Project approval, but before construction begins.</td>
</tr>
<tr>
<td></td>
<td>Project Approval</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approval of the SUSMP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Certification of right-of-way</td>
<td></td>
</tr>
<tr>
<td>Caltrans</td>
<td>NEPA-compliance document</td>
<td>Caltrans, in conjunction with the City, is preparing this IS/EA. Caltrans is the lead agency for the NEPA portion of the IS/EA.</td>
</tr>
<tr>
<td></td>
<td>Project Approval</td>
<td></td>
</tr>
</tbody>
</table>

Caltrans: California Department of Transportation; CDFW: California Department of Fish and Wildlife; SWRCB: State Water Resources Control Board; NPDES: National Pollutant Discharge Elimination System; RWQCB: Regional Water Quality Control Board; CEQA: California Environmental Quality Act; SUSMP: Standard Urban Stormwater Management Plan; IS/EA: Initial Study/Environmental Assessment; NEPA: National Environmental Policy Act
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Chapter 2  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

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

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

- **Land Use—Coastal Zone.** The Project is not located in a coastal zone and is not within the jurisdiction of the California Coastal Commission.

- **Land Use—Wild and Scenic Rivers.** There are no designated wild and scenic rivers located in the Project area.

- **Hydrology and Floodplain.** According to the Federal Emergency Management Agency (FEMA, FIRM 06037C0700F), the Project is located outside the regulatory 100-year floodplain. This segment of Avenue R is located within the X zone, which is defined as area of moderate flood hazard usually between the limits of the 100-year and 500-year floods.

- **Farmlands/Timberlands.** According to the 2016 Community Impact Memorandum, the Project would not result in any impacts to agricultural operations or land designated as Important Farmland. The Project is in an urban area. There are no timberlands in the Project study area.

- **Encroachment on Tribal Land.** There are no tribal lands designated in the city of Palmdale; therefore, the Project could not encroach on these territories.

- **Sole Source Aquifer.** The U.S. Environmental Protection Agency (USEPA) has not designated any sole source aquifers in Palmdale.

- **Section 6(f) Impacts.** The Project would not affect properties acquired or improved with Land and Water Conservation Fund Act because no Section 6(f) funds have been used in the vicinity of the Project site.
Section 4(f) Impacts. According to the 2016 Community Impact Memorandum, the Project would not affect any public and/or recreational properties and thus would not trigger Section 4(f) requirements. Resources relative to the Section 4(f) are discussed in Appendix B.

2.1 Human Environment

2.1.1 Land Use

The information in this section is based on the Community Impact Memorandum (January 2016) prepared for the Project.

The Project study area has been defined to encompass an area with a reasonable expectation of direct and indirect impacts. Direct impacts would be limited to parcels immediately adjacent to the existing and proposed right-of-way for Avenue R and parcels immediately adjacent to the intersecting roads. To facilitate statistical comparisons and to ensure potential indirect impacts are considered, a larger study area has been defined to include the entirety of the census tracts (Census Tracts 9104.03, 9104.04, 9105.01, 9105.02, 9105.04, 9105.05, 9106.02, 9106.03) in which these parcels are contained. Figure 2-1 shows the limits of Census Tracts, as well as the Project boundary.

2.1.1.1 Existing and Future Land Use

Affected Environment

The City of Palmdale is located in the High Desert region of Los Angeles County, approximately 60 freeway miles north of downtown Los Angeles. Palmdale is one of two incorporated cities and several unincorporated communities in the Antelope Valley. The City of Palmdale Planning Area encompasses approximately 174 square miles within a transitional area between the foothills of the San Gabriel and Sierra Pelona Mountains and the Mojave Desert to the north and east.

The City of Palmdale General Plan Land use designations in the study area are shown on Figure 2-2, General Plan Designated Land Uses, and in Table 3 below. Several land use designations located adjacent to Avenue R are Community Commercial (CC), Commercial Manufacturing (CM), Downtown Commercial (DC), High Density Residential (HDR), Industrial (IND), Multifamily Residential (MFR), Medium High Density Residential (MHDR), Medium Residential (MR), Neighborhood Commercial (NC), Office Commercial (OC), Open Space (OS), Public Facility (PF), Public Facility School (PF-3), and Single Family Residential 3 (SFR-3).
Table 3  Primary Land Use Categories Within the Project Study Area

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Land Use (acres)</th>
<th>Percentagea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Commercial (CC)</td>
<td>111.34</td>
<td>8.30</td>
</tr>
<tr>
<td>Commercial Manufacturing (CM)</td>
<td>62.80</td>
<td>4.68</td>
</tr>
<tr>
<td>Downtown Commercial (DC)</td>
<td>23.05</td>
<td>1.72</td>
</tr>
<tr>
<td>High Density Residential (HDR)</td>
<td>31.71</td>
<td>2.36</td>
</tr>
<tr>
<td>Industrial (IND)</td>
<td>75.62</td>
<td>5.64</td>
</tr>
<tr>
<td>Multifamily Residential (MFR)</td>
<td>54.16</td>
<td>4.04</td>
</tr>
<tr>
<td>Medium High Density Residential (MHDR)</td>
<td>137.43</td>
<td>10.24</td>
</tr>
<tr>
<td>Medium Residential (MR)</td>
<td>87.61</td>
<td>6.53</td>
</tr>
<tr>
<td>Neighborhood Commercial (NC)</td>
<td>0.70</td>
<td>0.05</td>
</tr>
<tr>
<td>Office Commercial (OC)</td>
<td>11.27</td>
<td>0.84</td>
</tr>
<tr>
<td>Open Space (OS)</td>
<td>15.48</td>
<td>1.15</td>
</tr>
<tr>
<td>Public Facility (PF)</td>
<td>47.19</td>
<td>3.52</td>
</tr>
<tr>
<td>Public Facility-School (PF-S)</td>
<td>111.39</td>
<td>8.30</td>
</tr>
<tr>
<td>Single Family Residential 3 (SFR-3)</td>
<td>572.15</td>
<td>42.64</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,341.90</strong></td>
<td><strong>100.01</strong></td>
</tr>
</tbody>
</table>

* Numbers have been rounded to nearest single digit. Due to rounding, the total does not add up to 100 percent.

Figure 2-3, Zoning Plan Land Uses, shows the existing City zoning designations in the Project study area. The following zoning designations are immediately adjacent to Avenue R: Single Family Residential, Multiple Residential, Office Commercial, and Service Commercial.

Existing land uses are shown on Figure 2-4, Existing Land Uses. Existing Land uses in the study area include Vacant, Commercial and Services, Transportation, Industrial (e.g., Towing Company), Multifamily and Single Family Residential, and Education (e.g., Palmdale High School).

A rail line owned by Union Pacific Railroad and used by Southern California Regional Rail Authority (SCRRA) and Metrolink traverses the study area in the western Project limits, in proximity to Sierra Highway. As shown on Figures 2-2 through 2-4, the existing land uses generally follow the General Plan land use designations and zoning classifications.
Figure 2-1
Avenue R Safety Improvement Project
ATPL-5378(038)
Source: LAR-IAC 2014
Figure 2-3

1,000
0
1,000

Avenue R Safety Improvement Project
ATPL-5378(038)
Source: City of Palmdale, Zoning Map
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## Avenue R Safety Improvement Project

### ATPL-5378(038)

Source: SCAG 2005

### Figure 2-4

<table>
<thead>
<tr>
<th>Existing Land Use Type</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial and Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Office</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military Installations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile Homes and Trailer Parks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Space and Recreation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation, Communications, and Utilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vacant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 2 • Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

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Development Trends

There are a number of large-scale projects that have recently been approved or are being processed by the City of Palmdale in and surrounding the Project study area. Table 4 identifies several of the larger scale developments in the Project study area.

<table>
<thead>
<tr>
<th>Name</th>
<th>Jurisdiction</th>
<th>Proposed Uses</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Desert Corridor</td>
<td>City of Palmdale and Other Projects</td>
<td>63-mile freeway/expressway and possible toll or rail facility between SR-14 in Los Angeles County and SR-18 in San Bernardino County.</td>
<td>Approved</td>
</tr>
<tr>
<td>Transportation Enhancement Project</td>
<td>City of Palmdale</td>
<td>Provide a Caltrans (District 7) Corridor Master Plan for the SR-14 corridor from I-5 to the Kern County line.</td>
<td>Pending approval</td>
</tr>
<tr>
<td>SR-14 Mainline Project</td>
<td>City of Palmdale</td>
<td>New southbound auxiliary lane from Rancho Vista Blvd to Palmdale Blvd and an additional storage lane to the NB SR-14 off-ramp at Rancho Vista Blvd.</td>
<td>Pending approval</td>
</tr>
<tr>
<td>SR-138 (Palmdale Blvd)</td>
<td>City of Palmdale</td>
<td>Widen and restripe Palmdale Blvd to 3 lanes in each direction from 5th St East to 10th St East on SR-138. Improve queuing through the railroad tracks located between 6th St and Sierra Highway. Relocate utilities and purchase additional right-of-way including businesses.</td>
<td>Pending approval</td>
</tr>
<tr>
<td>SR-14 Palmdale Blvd Interchange Improvement Project</td>
<td>City of Palmdale Interchange</td>
<td>Interchange Improvement Project</td>
<td>Pending approval</td>
</tr>
<tr>
<td>Rancho Vista Traffic Signal</td>
<td>City of Palmdale</td>
<td>Traffic signal and left-turn lane on Rancho Vista and 10th St East</td>
<td>Approved. Construction to start in 2017</td>
</tr>
<tr>
<td>Cottonwood Elementary School Modernization</td>
<td>City of Palmdale</td>
<td>Remove 37 modular classroom buildings and 3 modular toilet buildings and construct 7 replacement permanent slab-on-grade structures.</td>
<td>Approved</td>
</tr>
</tbody>
</table>
### Table 4  Projects/Development in the Project Study Area

<table>
<thead>
<tr>
<th>Name</th>
<th>Jurisdiction</th>
<th>Proposed Uses</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditional Use Permit (CUP) 11-006</td>
<td>City of Palmdale</td>
<td>Develop a public park on 12.8 acres of a 24.9-acre site. Construct roadway</td>
<td>Approved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>along Ave S and Hillcrest Dr. Construct an 870-sf restroom facility and other</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>park-related amenities.</td>
<td></td>
</tr>
<tr>
<td>Animal Care Center</td>
<td>City of Palmdale</td>
<td>Construct an approximate 25,500-sf indoor animal care center facility located</td>
<td>Approved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>at 38550 Sierra Hwy.</td>
<td></td>
</tr>
<tr>
<td>Antelope Valley Public Landfill Expansion</td>
<td>City of Palmdale</td>
<td>Consolidate Antelope Valley Public Landfill I and II into 1 contiguous 125-</td>
<td>Approved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>acre landfill.</td>
<td></td>
</tr>
<tr>
<td>Solar Farm (Site Plan Review 13-003)</td>
<td>City of Palmdale</td>
<td>20-megawatt ground solar photovoltaic facility to be located at 110th St East</td>
<td>Pending approval</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and Ave O.</td>
<td></td>
</tr>
<tr>
<td>Conditional Use Permit 08-08</td>
<td>City of Palmdale</td>
<td>Establish a new sand and gravel surface mining operation located at the</td>
<td>Pending approval</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75th St East and Ave R intersection.</td>
<td></td>
</tr>
<tr>
<td>Ave S Widening Phase II Improvements</td>
<td>City of Palmdale</td>
<td>Widen Ave S to 3 travel lanes in each direction and construct curbs, gutters,</td>
<td>Pending approval</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and sidewalks between 30th St East and 45th St East.</td>
<td></td>
</tr>
<tr>
<td>Action Water Treatment Plan/PWD Intertie Project</td>
<td>City of Palmdale</td>
<td>Install a 10-inch raw water main and 20-inch potable water main along Sierra</td>
<td>Approved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hwy from AVEK’s existing Action Water Treatment Plant to PWD points of</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>connection at Barrel Springs Rd and Sierra Hwy.</td>
<td></td>
</tr>
<tr>
<td>Rancho Vista Grade Separation Project Report – Project 527A</td>
<td>City of Palmdale</td>
<td>Construct an overpass bridge, support columns, and retaining walls. Install</td>
<td>Approved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>paving, curbs, gutters, medians, sidewalks, streetlights, and landscape and</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>irrigation features. Relocate utilities. Located at Rancho Vista Blvd and</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sierra Hwy.</td>
<td></td>
</tr>
</tbody>
</table>
Table 4  Projects/Development in the Project Study Area

<table>
<thead>
<tr>
<th>Name</th>
<th>Jurisdiction</th>
<th>Proposed Uses</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>10th St West Pipeline and</td>
<td>City of Palmdale</td>
<td>Connect a 24- or 30-inch pipeline to the existing South Feeder at the intersection of Ave N and 10th St West.</td>
<td>Approved</td>
</tr>
<tr>
<td>Turnouts</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SR: State Route; Caltrans: California Department of Transportation; I: Interstate; NB: northbound; sf: square feet; PWD: Palmdale Water District; AVEK: Antelope Valley-East Kern Water Agency; Hwy: highway; Blvd: Boulevard; St: Street; Ave: Avenue; Dr: Drive
Source: Community Impact Memorandum 2016.

As shown in the Table 4 above, a variety of Projects/Development in the Project Study Area are proposed to be constructed in the near future that could occur at the same time as the Avenue R Safety Improvement Project is being constructed. However, the majority of the projects are not in close proximity to the Project site.

**Community Facilities and Services**

As shown on Figure 2-5, Community Facilities, the 0.5-mile radius Project study area includes multiple community facilities, including 6 public schools, several churches, a mortuary, a Planetarium, City Hall and related City departments, a library and post office, and several parks. Utility services are discussed later in the document in Section 2.1.4.

**Commute Patterns**

The City of Palmdale is served by SR-14, which runs north to south and provide access from both the Los Angeles and Mojave Desert areas. SR-138 (Palmdale Boulevard) serves as a major route from east to west between Antelope Valley and Apple Valley. In addition, the City has a rail access via the Southern Pacific Transportation Company and is served by Palmdale Regional Airport, owned by the City of Los Angeles Department of Airports. According to the City’s General Plan, the majority of arterial street segments operate at LOS C or better.

Avenue R does not have a direct access interchange with SR-14; therefore, to access the State Highway System local commute traffic uses other arterials that have direct connection to SR-14 (e.g., Avenue S located south or Palmdale Boulevard located north of the Avenue R). Primary commute patterns in the study area are limited to local residents that reside in the area and school children commuting to several schools located in the study area. No land uses along Avenue R serve as primary commercial areas, so there is no traffic associated with commercial activities.
Housing
The City General Plan states that rapid growth in the Antelope Valley in the 1980s has changed the composition of the City’s population and housing stock. The City originated as a bedroom community of the Los Angeles metropolitan area and also served to foster booming military operations in the Mojave Desert. Affordable and vast open space land has made the city attractive to residential developers, who have constructed thousands of single-family residences between 1980s and 1990s.

Currently the City of Palmdale is approximately 104 square miles and is comprised of many different neighborhoods and areas with a various development types. Of the City’s 46,605 dwelling units, approximately 85.2 percent are single-family and 14.8 percent are multi-family. According to the City’s 2012 General Plan Housing Element Update, between 2006 and 2014, a total of 3,489 dwelling units have been constructed in the City during that time period.

The Project study area residential community follows a similar housing development pattern as the city itself with 42 percent of the study area being comprised of single-family residential units, followed by 10 percent of medium-high density residential, and 6 percent medium residential. The remainder of the study area is nonresidential uses, including vacant land.

According to the U.S. Census (2010), the Project study area is comprised of 9,506 residential units with an average household size of approximately 3.7 persons. Approximately half of the study area census tracts exhibit a higher house ownership population than the renter population (Census Tracts 9104.04, 9105.04, 9105.05, 9106.03), which is on par with the City reference population. The remaining census tracts (Census Tracts 9104.03, 9105.01, 9105.02, 9106.02) exhibit a higher renter population than house owner population.

Environmental Consequences
Build Alternative (Preferred Alternative)
Land Uses
The Build Alternative (Preferred Alternative) would require the purchase of property and structures located within the proposed right-of-way along Avenue R and conversion of existing land uses to transportation-related land uses. Table 5 (below) provides a summary of the land use impacts.
Community Facilities

Avenue R Safety Improvement Project

ATPL-5378(038)

Source: LAR-IAC 2014

Figure 2-5
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Table 5  General Plan Land Uses Affected by the Build Alternative (Preferred Alternative)

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Number of Full Acquisitions</th>
<th>Full Acquisitions (acres)</th>
<th>Partial Acquisitions (acres)</th>
<th>Permanent Impacts (acres)</th>
<th>Temporary Construction Easements (acres)</th>
<th>Conflict With On-Site Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Manufacturing (CM)</td>
<td>2</td>
<td>0.90</td>
<td>0.13</td>
<td><strong>0.35</strong></td>
<td><strong>0.02</strong></td>
<td></td>
</tr>
<tr>
<td>Medium High Density Residential (MHDR)</td>
<td>7</td>
<td>2.48</td>
<td>0.22</td>
<td><strong>0.61</strong></td>
<td><strong>0.03</strong></td>
<td></td>
</tr>
<tr>
<td>Multifamily Residential (MFR)</td>
<td>0</td>
<td>0.00</td>
<td>0.17</td>
<td><strong>0.20</strong></td>
<td><strong>0.00</strong></td>
<td></td>
</tr>
<tr>
<td>Single Family Residential 3 (SFR-3)</td>
<td>0</td>
<td>0.00</td>
<td>0.55</td>
<td><strong>0.57</strong></td>
<td><strong>0.01</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>3.38</strong></td>
<td><strong>1.08</strong></td>
<td><strong>1.73</strong></td>
<td><strong>0.07</strong></td>
<td></td>
</tr>
</tbody>
</table>

Locations of partial acquisitions where compensation would also potentially include severance damages (typically associated with loss of parking). This would be determined as part of the appraisal process.

Transportation uses are also within the Project footprint however they are not considered by the General Plan as General Plan Land Uses. Transportation uses account for 16.97 acres within the Project footprint.

Source: Community Impact Assessment 2016

Although the Project would require the purchase of right-of-way, it would not physically divide the community because Avenue R already exists in this community. The Project would not change land use patterns or long-range development plans because it is a safety improvement Project compatible with the General Plan and is not introducing new development. The Build Alternative (Preferred Alternative) would be compatible with the surrounding uses because the function of the roadway would remain the same. As a result of improvements, nine full acquisitions would occur: two businesses, six residencies, and one vacant lot; these impacts are described in detail in the Section 2.1.3.2, Relocations and Property Acquisition. The following are General Plan Land Use impacts that would occur with the Build Alternative (Preferred Alternative):

- **Commercial Manufacturing.** The Build Alternative (Preferred Alternative) would have a direct impact on two parcels with industrial and commercial uses (see Table 5). In addition, parcel acquisitions of two additional industrial and commercial uses would occur. Full acquisitions would require relocations of these businesses (see Section 2.1.3.2, Relocations and Property Acquisition). Partial acquisitions would be limited to slivers of the edges of the parcel property and would not preclude the existing and intended use of these properties. As a
result, no incompatibility with the Commercial Manufacturing designation would occur.

- **Residential (MHDR, MFR, SFR).** Though the Build Alternative (Preferred Alternative) would have a direct impact on six residentially zoned properties, it would not result in incompatibilities with residentially zoned property. Six residences would be displaced, and one vacant lot would be acquired as a result of the Project. The acquisition of these parcels and resulting displacement of the residential use is discussed further in Section 2.1.3.2, Relocations and Property Acquisition. In addition, there would be the need for partial acquisition of 34 residential parcels, 17 of which are currently vacant. These partial acquisitions would be limited to slivers of the edges of the parcel properties; thus the ongoing or designated function of the residential use would not be affected.

  Zoning requirements identify minimum building setback requirements from the roadway for each zoning classification. For single-family residential uses, the minimum front yard setback requirement is generally 25 feet. There are locations along the roadway where the existing structure would not meet the minimum 25-foot setback requirement once the bike lane is provided; however, it does not appear that the viability of any of these uses would be affected. In instances like this, a variance would need to be issued by the local jurisdiction (City) to allow the continuation of a non-conforming use. Once the variance is issued, there would not be a conflict with the zoning requirements. Refer to avoidance and minimization measure LU-1.

- **Transportation.** The Build Alternative (Preferred Alternative) would have a direct impact on Avenue R and the local street network. Improvements to the existing street network would occur in terms of construction of a mid-road block, a paved bicycle lane and buffer lane, pedestrian crossings, traffic calming features and ADA-compliant ramps and curb improvements at all intersections.

  Detailed information on direct property impacts is provided by parcel for the Build Alternative (Preferred Alternative) in the 2016 *Community Impact Memorandum*.

**No-Build Alternative**

The No-Build Alternative would not result in any direct land use impacts, and no new right-of-way would be needed.
Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative (Preferred Alternative) has incorporated avoidance and minimization measures into the design through the use of design exceptions to reduce the amount of right-of-way required for Project implementation. In addition, Caltrans and the City have standard conditions that must be implemented for all projects. These measures would serve to reduce impacts. Standard conditions are measures that would apply to all projects to help avoid or minimize impacts. For land use, this would include compensating property owners with the fair market value of the property as well as damages if private property is required for the roadway (this is discussed further in Section 2.1.3.2, Relocations and Property Acquisition).

The additional measure listed below would be applied to this Project to minimize potential land use impacts.

Minimization Measures

The following minimization measure is warranted.

LU-1 During Project design, the City shall coordinate with the land owners on the processing of a variance to allow a reduced building setback at those locations where zoning setback requirements will not be met after a partial acquisition.

2.1.1.2 Consistency with State, Regional, and Local Plans

Affected Environment

The information in this section is based on the Community Impact Memorandum (January 2016).

Regional Transportation Plan

The Regional Transportation Plan (RTP) is a long-term (up to 30 years into the future) blueprint of a region’s transportation system. Generally, RTPs are updated every five years and identify and analyze the transportation needs of the metropolitan region and create a framework for Project priorities. The Southern California Association of Governments (SCAG) is the agency responsible for adopting the RTP that covers the Project study area. Metropolitan Planning Organizations and Transportation Commissions (e.g., the Los Angeles Metropolitan Transportation Authority [METRO]) prepare the Project list to be included in the long-term planning effort. SCAG’s most recent 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future was adopted on April 7, 2016. This regional plan applies to this Project.
The RTP includes all types of travel and freight movement projects which are consistent with air quality goals in the Air Quality Management Plan (see below). These projects are found to meet federal air quality conformity requirements.

The Regional Transportation Improvement Plan (RTIP) includes the projects that the local agencies in Los Angeles County want to implement in the next five years. Any project must be included in both plans to be funded.

**Federal State Transportation Improvement Program**

The Federal State Transportation Improvement Program (FSTIP) is a capital listing of all transportation projects proposed over a six-year period for the SCAG region. The projects include highway improvements, transit, rail and bus facilities, high occupancy vehicle lanes, signal synchronization, intersection improvements, and freeway ramps, among others. In the SCAG region, a beneficial FSTIP update is produced every four years.

The FSTIP is prepared to implement projects and programs listed in the RTP and is developed in compliance with State and federal requirements. Under State law, County Transportation Commissions have the responsibility of proposing County projects, using the current RTP’s policies, programs, and projects as a guide, from among submittals by Cities and local agencies. The locally prioritized lists of projects are forwarded to SCAG for review. From this list, SCAG develops the FSTIP based on consistency with the current RTP, inter-county connectivity, financial constraints, and conformity satisfaction.

**Air Quality Management Plan (2012)**

The South Coast Air Quality Management District (SCAQMD) prepared the 2012 Air Quality Management Plan (AQMP), which is a regional and multi-agency effort among the SCAQMD, the California Air Resources Board (CARB), SCAG, and the USEPA. The 2012 AQMP incorporates the latest scientific and technical information and planning assumptions, including the 2012–2035 RTP/SCS; updated emission inventory methodologies for various source categories; and SCAG’s latest growth forecasts. The Final 2012 AQMP was adopted by the SCAQMD Governing Board on December 7, 2012. The Draft 2016 AQMP was released to the public for review and comment on June 30, 2016. The Draft 2016 AQMP reflects the growth assumed in the 2016–2040 RTP/SCS.
The City of Palmdale General Plan
The City of Palmdale General Plan guides development in the Project study area. The City of Palmdale General Plan is a comprehensive planning document that serves as a long-term plan for the city of Palmdale and addresses a range of issues associated with the city’s development, including physical, social, and economic concerns. The 1993 City of Palmdale General Plan provides a vision and road map for City development. By law, the General Plan must address the following seven subject areas or elements: land use, circulation, housing, conservation, open space, noise, and safety. It may also address any other issues or include any other elements that relate to the physical development of a city or county. The most recent City of Palmdale General Plan and its elements are from 1993. Only the Housing Element of the General Plan was updated in 2012.

Because the Avenue R Safety Improvement Project is a transportation-related project, the majority of applicable goals for Project consistency purposes are found in Circulation Element. The Circulation Element describes the existing circulation system and serves as an infrastructure plan that addresses the mobility of people, goods and services, energy, water, sewage, storm drainage, and communications. According to the City of Palmdale General Plan, Avenue R is classified on the City’s Planned Roadway Network as a Major Arterial. The Project’s consistency with the General Plan Elements is shown in Table 6 below.

Table 6  Project Consistency with Applicable General Plans

<table>
<thead>
<tr>
<th>Plan Related Goal</th>
<th>Build Alternative (Preferred Alternative) Consistency Analysis</th>
<th>No-Build Alternative Consistency Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>City of Palmdale General Plan Circulation Element 1993</strong></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><strong>Consistent.</strong> The Build Alternative (Preferred Alternative) is consistent with this goal because it enhances Ave R along the Project segment and provides for safe movement of people while minimizing impacts on the community.</td>
<td><strong>Not Consistent.</strong> The No-Build Alternative is not consistent with this goal because it maintains the existing incomplete system, which lacks pedestrian, bicycle, and crosswalk amenities.</td>
</tr>
<tr>
<td>GOAL C2: Reduce the number of trips and vehicle miles traveled by individuals within the Planning Area, to meet regional transportation and air quality goals.</td>
<td><strong>Consistent.</strong> The Build Alternative (Preferred Alternative) is consistent with this goal because it provides a bike lane that would encourage alternative modes of transportation, thereby potentially reducing vehicle use and the number of vehicle trips in the area.</td>
<td><strong>Not Consistent.</strong> The No-Build Alternative is not consistent with this goal because it does not provide the enhancements necessary to effectively encourage alternative modes of transportation and would not reduce the number of vehicle trips traveled.</td>
</tr>
</tbody>
</table>
### Table 6  Project Consistency with Applicable General Plans

<table>
<thead>
<tr>
<th>Plan Related Goal</th>
<th>Build Alternative (Preferred Alternative) Consistency Analysis</th>
<th>No-Build Alternative Consistency Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOAL C3: Encourage use of non-vehicular transportation throughout the Planning Area.</td>
<td><strong>Consistent.</strong> The Build Alternative (Preferred Alternative) is consistent with this goal because it provides a bike lane that would encourage bicycle use in the Planning Area.</td>
<td><strong>Not Consistent.</strong> The No-Build Alternative is not consistent with this goal because it does not encourage the use of bicycles or pedestrian movement along Ave R due to lack of bicycle lane and pedestrian crossings.</td>
</tr>
<tr>
<td><strong>City of Palmdale General Plan Land Use Element 1993</strong></td>
<td></td>
<td></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><strong>Consistent.</strong> The Build Alternative (Preferred Alternative) is consistent with this goal because it enhances walkability along the Project segment; promotes use of bicycles due to incorporation of a bike lane; and enhances safety for pedestrians and school students, thus providing a higher quality of life for residents in the area.</td>
<td><strong>Not Consistent.</strong> The No-Build Alternative is not consistent with this goal because it does not meet the needs of the students living in the area since there are no adequate sidewalks, crosswalks, or bike lanes that can be safely used by the community.</td>
</tr>
<tr>
<td>Goal L4: Maintain the integrity, safety, and attractiveness of residential neighborhoods.</td>
<td><strong>Consistent.</strong> The Build Alternative (Preferred Alternative) is consistent with this goal because it enhances the pedestrian experience along the Project segment: it improves safety by providing a bike lane and by closing sidewalk gaps. Therefore, it increases attractiveness of the residential neighborhood.</td>
<td><strong>Not Consistent.</strong> The No-Build Alternative is not consistent with this goal because it does not meet the safety and attractiveness standards. It is also lacking adequate pedestrian facilities such as sidewalks, crosswalks, and a refuge lane.</td>
</tr>
<tr>
<td>Goal 6: Plan for and reserve land to accommodate uses needed for public benefit, including open space, recreation, public improvements, schools and community facilities.</td>
<td><strong>Consistent.</strong> The Build Alternative (Preferred Alternative) is consistent with this goal because it enhances the pedestrian experience along the Project segment and promotes safety. It also is designed specifically to address the needs for complete and safe routes to school for students. The Project provides community amenities in terms of sidewalks, bike lanes, and a median refuge lane in the area where these amenities are currently lacking or are incomplete.</td>
<td><strong>Not Consistent.</strong> The No-Build Alternative is not consistent with this goal because it does not provide for public improvements, schools, or community facilities. The No-Build Alternative is maintaining its existing status quo.</td>
</tr>
<tr>
<td><strong>City of Palmdale General Plan Parks, Recreation, and Trails Element 1993</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOAL PRT5: Promote bicycling as an important mode of transportation and recreation in the City of Palmdale.</td>
<td><strong>Consistent.</strong> The Build Alternative (Preferred Alternative) is consistent with this goal because it provides a bike lane that would encourage the local community, including school students, to use bicycles along Project segment.</td>
<td><strong>Not Consistent.</strong> The No-Build Alternative is not consistent with this goal because it does not provide a bike lane and thus does not promote bicycling.</td>
</tr>
</tbody>
</table>

Source: General Plan 1993
Environmental Consequences

Build Alternative (Preferred Alternative)

State Plans

The Project was approved for federal funding from the Safe Routes to School Program and is identified as ID LA–0458–Ave R Complete Streets and Safe Routes in the 2014 Active Transportation Program (ATPL) Statewide Component, which was adopted on August 20, 2014. The Project is identified as ATPL-5378(038). Thus, the Project is consistent with the State Plan.

Regional Plans

The Project was found consistent with SCAG’s 2012–2035 RTP/SCS and LRTP; METRO identifies active transportation as a key component of these programs in a letter dated May 12, 2014. Thus, the Project is consistent with the Regional Plan components.

Local Plans

As shown above, the Project is consistent with applicable City General Plan goals and policies, as listed in Table 6, to enhance the system of roads; to provide a high quality of life; to maintain the integrity and attractiveness of residential neighborhoods; to accommodate uses for public benefit; and to promote bicycling. In addition, the Project was found consistent with the 2016–2040 RTP/SCS and thus the Project would not conflict with any regional, State, or local Plans.

No-Build Alternative

Under the No-Build Alternative, no construction would occur. The No-Build Alternative would not conflict with any regional, State, or local Plans; however, it would not support the goals of the General Plan in terms of improvement of connectivity and bicycling opportunities.

Avoidance, Minimization, and/or Mitigation Measures

The Project is consistent with State, regional, and local planning programs. No avoidance, minimization, or mitigation measures would be required.

2.1.1.3 Parks and Recreational Facilities

Affected Environment

The information in this section is based on the Community Impact Memorandum (January 2016).
The Project study area is largely developed with residential uses; therefore, there are several recreational facilities in the Project study area that serve the local residential community. Recreational land uses are shown on Figure 2-5, Community Facilities in the Study Area. Three city parks are located within a 0.5-mile radius from the Avenue R Safety Improvement Project. These facilities are also discussed in Appendix B, Resources Evaluated Relative to the Requirements of Section 4(f). No facilities are located adjacent to the Avenue R alignment. No bike lane exists in the subject segment of Avenue R.

The three recreational areas in the study area include those discussed below:

- Melville J. Courson Park is located at the corner of 10th Street East and Avenue Q-12, 0.25 mile north of the Project site. This park covers 7.5 acres and is developed with a swimming pool/pool building, 2 lighted basketball courts, a lighted sand volleyball court, 2 play lots, a spray pool, a fieldhouse with restrooms and equipment checkout, a gazebo, and picnic areas.

- William J. McAdam Park is located at 38115 30th Street East, 0.44 mile east of the Project site. This park covers 20 acres and is developed with a swimming pool/pool building, 4 tennis courts, 2 lighted softball fields, a 4-acre playing field, a play lot, picnic shelters, a lighted volleyball court, and 3 horseshoe pits.

- Pontician Square is part of the City Hall complex and is located at 38315 9th Street East, 0.4 mile north of the Project site. This recreational area covers four acres and is developed with a fountain and a gazebo. This park is used for wedding ceremonies, reception photos, and intimate gatherings.

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

The Project would not require any right-of-way from parks or other recreational facilities; therefore it would not have any direct impacts on Melville J. Courson Park, William J. McAdam Park, or Pontician Square in the Project study area. Additionally, due to distance from recreational resources, the Project would not have any indirect impacts. There would be no direct views, alteration of access to the facilities, or increase in noise levels that could change the character or use of the existing facilities. Therefore, requirements for Section 4(f) protection would not be triggered. No use of Section 4(f) resources would occur; Resources Evaluated Relative to the Requirements of Section 4(f) are described in Appendix B.
Due to its nature, the Project is not expected to increase the use of local parks or otherwise deteriorate parks or their amenities.

The Project would provide a bike lane to bring Avenue R to compliance with the City General Plan (refer to Section 2.1.5 Traffic/Transportation).

**No-Build Alternative**
The No-Build Alternative does not propose any improvements; therefore, it would not impact parks or recreational facilities. At the same time, it would not provide bike lanes on Avenue R.

**Avoidance, Minimization, and/or Mitigation Measures**
The Project would have no direct or indirect impacts on park and recreational facilities. No avoidance, minimization, or mitigation measures would be required.

### 2.1.2 Growth

**Regulatory Setting**
The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act of 1969, require evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The 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.

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

**Affected Environment**

**Regional Population Characteristics**
The California Department of Finance (DOF) collects older statistics from each jurisdiction and, therefore, this data source was used to provide historical context for the City’s growth. The DOF reports that the City of Palmdale population nearly doubled between 1990 and 2000, from 68,946 people to 116,670. Toward the end of
the 1990s, Palmdale’s annual population growth began to slow, dropping from a 6.1 percent increase in 1996 to an annual increase of a little more than 2.0 percent in the year 2000. Nevertheless, the population of Palmdale increased by 76.0 percent while population in the Los Angeles County as a whole grew by only 11.5 percent. Between 2000 and 2010, the population of Palmdale grew from 116,670 to 152,750 persons, an increase of 36,080 (30.9 percent). This growth was considerably less dramatic than during the previous decade, but is still substantial. When the economic crisis happened in 2008, the population growth started to slow down to a rate of approximately two percent per year and is expected to stay low for few more years.

SCAG prepares growth projections for its entire region. According to the SCAG Growth Forecast included in the Draft 2016–2040 RTP/SCS, the City of Palmdale is expected to experience steady population growth of approximately 8 to 10 percent per year in the next 30 years. According to SCAG, the population in the City (154,162 as of 2012) is projected to increase by approximately 8 percent to 166,495 in 2020 and by 10 percent to 183,145 in 2035; it is expected to total 201,460 in 2040. The household numbers (43,056 as of 2012) are projected to grow slowly by 1 percent to 43,570 in 2020, and rapidly by 29 percent 55,984 in 2035 to reach 59,252 households in 2040. SCAG projects that employment in Palmdale will grow by 10 percent over existing conditions (29,315 as of 2012) to 32,248 in 2020, by 18 percent to 38,069 in 2035, and reach 40,291 in 2040.

Based on these indicators, it may be concluded that the population growth will be slightly outpaced by household and employment growth, both of which are relatively on par. When evaluating a project’s potential effect on growth, the influence that the project may have on growth and development is determined.

This discussion asks the following questions:

- To what extent would the project create a change in travel times, travel cost, or accessibility to employment, shopping, or other destinations? Would this change affect travel behavior, trip patterns, or the attractiveness of some areas over others?
- To what extent would a change in accessibility affect growth or land use change—its location, rate, type, or amount?
- To what extent would resources of concern be affected by this growth or land use change?
If, when answering these questions, it is determined that the project may influence the location, type, and rate of future growth and development, then additional analysis would be required.

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

By answering the questions above, it was determined that the Build Alternative (Preferred Alternative) would not be expected to influence the rate or location of growth in the area. The following provides an explanation of that determination. The Avenue R Project is a safety improvement Project and, as such, cannot act as a catalyst to growth. The Project is not a development project and would not, therefore, generate employees, residents, or a need for housing. In addition, the Project would not extend any existing infrastructure, but rather, it addresses the existing community needs in terms of a safe roadway network and pedestrian environment. The Project will address the needs of underserviced students and will provide safe routes to four schools in the study area by means of providing continuous sidewalks, continuous designated bike lanes, a “refuge” lane at mid-block, and pedestrian crossings. Because of its nature, the Project would not change travel times, accessibility to employment, or shopping and would not change accessibility to the site. In addition, the Project has minimal to no impacts to resources of concern. Therefore, the Project would not result in growth-related effects.

Based on the above discussion, no further analysis with respect to growth is required for this Project.

**No-Build Alternative**

Growth in and around the Project study area may continue since several parcels along Avenue R are vacant and may be subject to development in the future. This growth would be in response to regional housing and population demand.

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

No avoidance, minimization, or mitigation measures would be required.

**2.1.3 Community Impacts**

Information regarding community characteristics and cohesion was obtained from the *Community Impact Memorandum* (January 2016) prepared for the Project.
2.1.3.1 COMMUNITY CHARACTER AND COHESION

**Regulatory Setting**

The National Environmental Policy Act of 1969 (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 United States Code [USC] 4331[b][2]). The Federal Highway Administration in its implementation of NEPA (23 United States Code [USC] 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

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

**Affected Environment**

**Community Cohesion**

Community cohesion is the degree to which residents have a sense of belonging to their neighborhood, their level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Community cohesion can be perceived by individuals differently but, for the purpose of this analysis, community cohesion indicators generally include racial and ethnic composition, age composition, household size, and residents’ tenure. A highly cohesive community would be characterized by ethnic homogeneity, households with two or more people, long-term residents, and a high percentage of elderly residents.

Residential properties in the Project study area are comprised mostly of single-family units dating from approximately 1940s. Some of the multi-family residences were constructed in the late 1920s. According to the *Historic Property Survey Report* (November 2015) even though the residential properties in the Project study area date from the 1940s, they do not form a historically cohesive neighborhood and lack
cultural resources. Therefore, the community character of the Project area is not considered unique.

The demographics provided in this assessment were obtained from the U.S. Census Bureau. Elements of community cohesion can be found in demographic data used to develop community profiles from the 2010 Census and the 2009–2012 American Community Survey. The Project study area was defined as a 0.5-mile radius from the Project alignment.

The race and ethnicity characteristics in the study area census tracts, the City of Palmdale, and the County of Los Angeles are shown in Table 7. The racial composition of the area provides information regarding the study area population diversity and identifies minorities.

**Table 7  Comparative Population Characteristics**

<table>
<thead>
<tr>
<th>Census Tracts</th>
<th>Race and Ethnicity Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census Tract 9104.03</td>
<td>Number 867</td>
</tr>
<tr>
<td></td>
<td>Percent 38.8</td>
</tr>
<tr>
<td>Census Tract 9104.04</td>
<td>Number 1,832</td>
</tr>
<tr>
<td></td>
<td>Percent 44.4</td>
</tr>
<tr>
<td>Census Tract 9105.01</td>
<td>Number 1,528</td>
</tr>
<tr>
<td></td>
<td>Percent 28.6</td>
</tr>
<tr>
<td>Census Tract 9105.02</td>
<td>Number 1,848</td>
</tr>
<tr>
<td></td>
<td>Percent 45.2</td>
</tr>
<tr>
<td>Census Tract 9105.04</td>
<td>Number 2,121</td>
</tr>
<tr>
<td></td>
<td>Percent 44.2</td>
</tr>
<tr>
<td>Census Tract 9105.05</td>
<td>Number 1,474</td>
</tr>
<tr>
<td></td>
<td>Percent 48.1</td>
</tr>
<tr>
<td>Census Tract 9106.02</td>
<td>Number 1,796</td>
</tr>
<tr>
<td></td>
<td>Percent 45.0</td>
</tr>
<tr>
<td>Census Tract 9106.03</td>
<td>Number 3,517</td>
</tr>
<tr>
<td></td>
<td>Percent 49.7</td>
</tr>
<tr>
<td>City of Palmdale</td>
<td>Number 74,901</td>
</tr>
<tr>
<td></td>
<td>Percent 49.0</td>
</tr>
</tbody>
</table>
Chapter 2 • Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Table 7 Comparative Population Characteristics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LA Countyb</td>
<td>Number</td>
<td>4,936,599</td>
<td>856,874</td>
<td>72,828</td>
<td>1,346,865</td>
<td>26,094</td>
<td>2,140,632</td>
<td>438,713</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>50.3</td>
<td>8.7</td>
<td>0.7</td>
<td>13.7</td>
<td>0.3</td>
<td>21.8</td>
<td>4.5</td>
</tr>
</tbody>
</table>

LA: Los Angeles

a This number is shown as 0.0, but it is actually smaller than 0.1%.
b The US Census data and the California Department of Finance have slightly different population numbers for the County of Los Angeles in 2010. U.S. Census data was used in this table.

Source: Community Impact Memorandum 2016.

The majority of the population in terms of race in study area census tracts is composed of Whites followed by Some Other Race and African American. In addition, there is a large Hispanic population (i.e., between 54.9 percent and 77.4 percent), which is higher than the respective percentages of Hispanics shown for the city and county.

The Project study area at the census tract level has a relatively young population with median age ranging from 23.4 to 29.2, which is slightly younger than the median age of the city (29.7) and county (34.8).

Table 8 shows the Project Study Area, City, and County Housing characteristics. The percentage of ownership population is an indicator of the affluence of the community. Approximately half of the study area census tracts exhibit a higher house ownership population than the renter population (Census Tracts 9104.04, 9105.04, 9105.05, 9106.03), which is on par with the City reference population. The remaining census tracts (Census Tracts 9104.03, 9105.01, 9105.02, 9106.02) exhibit a higher renter population than house owner population.
Table 8  Project Study Area, City, and County Housing Characteristics

<table>
<thead>
<tr>
<th>Census Tracts</th>
<th>Total Housing</th>
<th>Housing: Owner-Occupied</th>
<th>Housing: Renter-Occupied</th>
<th>Housing: Vacant</th>
<th>Total Households*</th>
<th>Average Household size*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census Tract 9104.03</td>
<td>Number 700</td>
<td>75</td>
<td>537</td>
<td>88</td>
<td>610</td>
<td>3.93</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>10.7</td>
<td>76.7</td>
<td>12.6</td>
<td>100.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Census Tract 9104.04</td>
<td>Number 1,183</td>
<td>615</td>
<td>500</td>
<td>68</td>
<td>931</td>
<td>4.07</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>52.0</td>
<td>42.3</td>
<td>5.7</td>
<td>100.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Census Tract 9105.01</td>
<td>Number 2,166</td>
<td>50</td>
<td>1,755</td>
<td>361</td>
<td>1,831</td>
<td>3.03</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>2.3</td>
<td>81.0</td>
<td>16.7</td>
<td>100.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Census Tract 9105.02</td>
<td>Number 1,279</td>
<td>448</td>
<td>689</td>
<td>142</td>
<td>1,085</td>
<td>3.73</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>35.0</td>
<td>53.9</td>
<td>11.1</td>
<td>100.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Census Tract 9105.04</td>
<td>Number 1,271</td>
<td>1,190</td>
<td>425</td>
<td>81</td>
<td>1,201</td>
<td>4.37</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>70.1</td>
<td>25.1</td>
<td>4.8</td>
<td>100.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Census Tract 9105.05</td>
<td>Number 850</td>
<td>600</td>
<td>186</td>
<td>64</td>
<td>692</td>
<td>4.21</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>70.6</td>
<td>21.9</td>
<td>7.5</td>
<td>100.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Census Tract 9106.02</td>
<td>Number 1,479</td>
<td>590</td>
<td>766</td>
<td>123</td>
<td>1,278</td>
<td>2.71</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>39.9</td>
<td>51.8</td>
<td>8.3</td>
<td>100.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Census Tract 9106.03</td>
<td>Number 2,111</td>
<td>1,197</td>
<td>759</td>
<td>155</td>
<td>1,878</td>
<td>3.78</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>56.7</td>
<td>36.0</td>
<td>7.3</td>
<td>100.0</td>
<td>N/A</td>
</tr>
<tr>
<td>City of Palmdale</td>
<td>Number 46,544</td>
<td>29,167</td>
<td>13,785</td>
<td>3,592</td>
<td>41,520</td>
<td>3.70</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>62.7</td>
<td>29.6</td>
<td>7.7</td>
<td>100.0</td>
<td>N/A</td>
</tr>
<tr>
<td>LA County</td>
<td>Number 3,446,076</td>
<td>1,544,749</td>
<td>1,696,455</td>
<td>203,872</td>
<td>3,230,383</td>
<td>3.01</td>
</tr>
<tr>
<td></td>
<td>Percent 100.0</td>
<td>44.9</td>
<td>49.2</td>
<td>5.9</td>
<td>100.0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

LA: Los Angeles  
* 2009–2013 American Community Survey (ACS) 5-year Estimates  
Source: Community Impact Memorandum 2016.

Residential Tenure is presented in Table 9. The Housing Tenure is useful as a rough indicator of neighborhood stability and is based on the assumption that the longer people live in a community, the more committed they become to it and the more cohesive the community. The majority of the population has moved into their housing units in the last 15 years for all census tracts, for the city, and for the county.
Table 9  Project Study Area Tenure

<table>
<thead>
<tr>
<th>Census Tracts</th>
<th>Moved in 2010 or later</th>
<th>Moved in 2000 to 2009</th>
<th>Moved in 1990 to 1999</th>
<th>Moved in 1980 to 1989</th>
<th>Moved in 1970 to 1979</th>
<th>Moved in 1969 or earlier</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census Tract 9104.03</td>
<td>Number 234</td>
<td>323</td>
<td>24</td>
<td>6</td>
<td>12</td>
<td>11</td>
<td>610</td>
</tr>
<tr>
<td></td>
<td>Percent 38.0</td>
<td>53.0</td>
<td>4.0</td>
<td>1.0</td>
<td>2.0</td>
<td>2.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Census Tract 9104.04</td>
<td>Number 271</td>
<td>412</td>
<td>115</td>
<td>91</td>
<td>35</td>
<td>7</td>
<td>931</td>
</tr>
<tr>
<td></td>
<td>Percent 29.0</td>
<td>44.0</td>
<td>12.0</td>
<td>10.0</td>
<td>4.0</td>
<td>1.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Census Tract 9105.01</td>
<td>Number 774</td>
<td>947</td>
<td>109</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1831</td>
</tr>
<tr>
<td></td>
<td>Percent 42.0</td>
<td>52.0</td>
<td>6.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100.0</td>
</tr>
<tr>
<td>Census Tract 9105.02</td>
<td>Number 283</td>
<td>616</td>
<td>70</td>
<td>67</td>
<td>10</td>
<td>38</td>
<td>1085</td>
</tr>
<tr>
<td></td>
<td>Percent 26.0</td>
<td>57.0</td>
<td>6.0</td>
<td>6.0</td>
<td>1.0</td>
<td>4.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Census Tract 9105.04</td>
<td>Number 221</td>
<td>583</td>
<td>249</td>
<td>54</td>
<td>37</td>
<td>57</td>
<td>1201</td>
</tr>
<tr>
<td></td>
<td>Percent 18.0</td>
<td>49.0</td>
<td>21.0</td>
<td>4.0</td>
<td>3.0</td>
<td>5.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Census Tract 9105.05</td>
<td>Number 104</td>
<td>357</td>
<td>113</td>
<td>114</td>
<td>0</td>
<td>4</td>
<td>692</td>
</tr>
<tr>
<td></td>
<td>Percent 15.0</td>
<td>52.0</td>
<td>16.0</td>
<td>16.0</td>
<td>0</td>
<td>1.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Census Tract 9106.02</td>
<td>Number 336</td>
<td>794</td>
<td>132</td>
<td>7</td>
<td>9</td>
<td>0</td>
<td>1278</td>
</tr>
<tr>
<td></td>
<td>Percent 26.0</td>
<td>62.0</td>
<td>10.0</td>
<td>1.0</td>
<td>1.0</td>
<td>0</td>
<td>100.0</td>
</tr>
<tr>
<td>Census Tract 9106.03</td>
<td>Number 438</td>
<td>924</td>
<td>303</td>
<td>142</td>
<td>62</td>
<td>9</td>
<td>1878</td>
</tr>
<tr>
<td></td>
<td>Percent 23.0</td>
<td>49.0</td>
<td>16.0</td>
<td>8.0</td>
<td>3.0</td>
<td>0</td>
<td>100.0</td>
</tr>
<tr>
<td>City of Palmdale</td>
<td>Number 8,606</td>
<td>22,626</td>
<td>7,264</td>
<td>2,250</td>
<td>430</td>
<td>344</td>
<td>41,520</td>
</tr>
<tr>
<td></td>
<td>Percent 21.0</td>
<td>54.0</td>
<td>17.0</td>
<td>5.0</td>
<td>1.0</td>
<td>1.0</td>
<td>100.0</td>
</tr>
<tr>
<td>LA County</td>
<td>Number 606,987</td>
<td>1,470,381</td>
<td>585,898</td>
<td>263,196</td>
<td>176,379</td>
<td>127,542</td>
<td>3,230,383</td>
</tr>
<tr>
<td></td>
<td>Percent 19.0</td>
<td>46.0</td>
<td>18.0</td>
<td>8.0</td>
<td>5.0</td>
<td>4.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

LA: Los Angeles
Source: Community Impact Memorandum 2016.

Based on the study area census tract indicators, the study area is dominated by a relatively young, diverse population. The majority of the population has resided in the area for at least 15 years, so they have developed familiarity with the area and the study area facilities; they may also have developed a sense of belonging to the area. The housing ownership characteristics range from high percentages in some census tracts, to very low levels in others. In general, the renter population may not develop the same sense of belonging to an area or engage in the community in the same way that house owners do. Because the study area population is relatively young, is not homogeneous, and contains a mixture of house renters and house owners, the study area would be expected to be characterized by low to moderate levels of cohesion.

**Neighborhoods/Communities**

The study area is residential in character and is scattered with several educational and small commercial uses. A variety of key communities are located in the study area. These community facilities are shown on Figures 2-6a through 2-6e, Community
Facilities. Educational facilities in the 0.5-mile study area include a total of six public schools, four learning centers (e.g., Planetarium) and other private educational facilities; there are also nine places of worship, a complex of City facilities (e.g., City Hall, Cultural Center, Playhouse), and three recreational parks. A Local Mortuary also exists adjacent to Avenue R. Therefore, it can be concluded that the study area is rich in community facilities.

Businesses located along Avenue R include a liquor store, a convenience store, auto repair related businesses, and a bail bonds business. One large retail mall, Gateway Center Mall, exists in the northern portion of the study area. No other business centers or strip malls are located in the study area.

**Environmental Consequences**

*Build Alternative (Preferred Alternative)*

*Community Cohesion*

The Project location was chosen due to its proximity to four public schools (Tumbleweed Elementary, Palm Tree Elementary, Desert Rose Elementary, and Palmdale High School) that need improved access from their service area. The Project is an improvement to an existing facility and would not create a barrier that divides the neighborhood since the communities were built around Avenue R. Avenue R would be open to two-way traffic during construction, so access to and from the communities will be provided at all times.
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Figure 2-6b

Avenue R Safety Improvement Project
ATPL-5378(038)
Aerial Source: LAR-IAC 2014
Figure 2-6c
Avenue R Safety Improvement Project
ATPL-5378(038)
Aerial Source: LAR-IAC 2014
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Figure 2-6d

Avenue R Safety Improvement Project
ATPL-5378(038)
Aerial Source: LAR-IAC 2014
Chapter 2 • Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

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Figure 2-6e

Avenue R Safety Improvement Project
ATPL-5378(038)
Aerial Source: LAR-IAC 2014
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The Project would not displace community services or a large number of users that would change the population characteristics of the study area. Access to all community facilities will be provided during construction.

The Project would not permanently affect community facilities or transit services, as discussed elsewhere in this document. The Project would result in residential relocations; however, the number of acquisitions (i.e., six) would not be substantial enough to alter the neighborhood cohesion. The relocations would not result in isolated land uses. The slough walls would enhance the physical definition of the neighborhood by providing a separation of the existing residential uses from the traffic of the arterial highway. Two businesses would also be relocated—a towing company and a liquor store (see Section 2.1.3.2, Relocations and Property Acquisition). None of these businesses provide basic services to the community.

Where full acquisitions are proposed, the Project would change site-specific land uses from residential and commercial to transportation land uses, but the acquisitions would not affect community cohesion because the Build Alternative (Preferred Alternative) (1) would not bisect a neighborhood or community; (2) would not cut off access to the existing community’s services; (3) would not change existing commute patterns or transit routes; and (4) would not displace any community serving facilities.

The purpose of the Project is to provide community benefits by providing a bike lane, sidewalks, crosswalks, traffic calming features, and a refuge area at mid-block. The Project addresses these immediate needs for community infrastructure improvements and is designed to provide safety benefits to the residents in the area, particularly pedestrians (students of the local schools) and bicyclists.

During construction of the slough wall, on-street parking may be temporarily restricted from the businesses. However, these businesses also have parking lots in the back of their property. Other temporary impacts that may occur along the Project alignment may include short-term limited access, alternate access, noise, dust, and paint odors. Implementation of the Traffic Management Plan (TMP) would ensure that access is provided to businesses and residents at all times during construction. Construction impacts from the Project would be short term and would cease upon Project completion.
Neighborhoods/Communities

None of the community facilities would be permanently adversely affected by the Project. The Project’s purpose is to provide safe routes to nearby schools. As a result, access to other public facilities (churches, Planetarium, other schools, e.g. Saint Mary Catholic School, Maryott Roy Elementary School) within the Project alignment would be improved (refer to Figure 2-5). During construction, access to community facilities will be maintained at all times, but some traffic delays may occur. This would be addressed by the implementation of the Traffic Management Plan (see standard condition CC-1, provided below). Special attention and coordination will be performed with local schools during construction of the Project to minimize delay and queuing during the school’s drop-off and pick-up times (see CC-2 provided below). Construction impacts from the Project would be short term and would cease upon Project completion.

No-Build Alternative

The No-Build Alternative does not propose any improvements; therefore, it would not change the regional population characteristics of the study area. The No-Build Alternative would not negatively impact community facilities or community cohesion, and no facilities would be displaced with this alternative.

Avoidance, Minimization, and/or Mitigation Measures

Community Cohesion

No adverse impacts would occur, and no avoidance, minimization, and/or mitigation measures would be required. However the following standard conditions are recommended.

Standard Condition

CC-1 The City of Palmdale shall develop a Traffic Management Plan during the Plans, Specifications, and Estimates Phase to ensure safe and efficient traffic flow and access throughout the Project study area during all phases of construction. The Traffic Management Plan will include public notification of any modifications to bus stop locations or operational procedures during construction.

CC-2 During Project design, the City of Palmdale shall coordinate with local schools regarding the timing and construction schedule of this Project.
Neighborhoods/Communities
No adverse impacts would occur, and no avoidance, minimization, and/or mitigation measures would be required.

2.1.3.2 Relocations and Real Property Acquisition
Information regarding relocations was obtained from the Community Impact Memorandum (January 2016) and Final Relocation Impact Statement (May 2016) prepared for the Project.

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 “The Uniform Act”) and Title 49 Code of Federal Regulations Part 24. The purpose of 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 C 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 USC 2000d, et seq.) of 1964. Please see Appendix D for a copy of Caltrans’ Title VI Policy Statement.

Affected Environment
As described above, the Project study area has numerous land uses including residential, educational, commercial, and transportation. Within the subject segment, Avenue R is comprised of single-family residential properties, apartment complexes, a few schools, and several undeveloped parcels.

A full acquisition of a property is required when all or a substantial portion of a property is needed for right-of-way purposes and the current use can no longer operate on that site. A partial acquisition would occur when a smaller portion of a property is to be acquired, but full use of the property and its structures can remain. Generally, partial acquisitions consist of portions of a back, side, or front yard; landscaping; or parking (but not in numbers sufficient to subvert building code requirements). Another form of property use is a Temporary Construction Easement (TCE), which is the temporary use of a portion of a property only during project construction (typically needed for construction staging or equipment and materials...
storage use). Once construction is completed, property within a TCE is restored to the pre-construction state.

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

Implementation of the Build Alternative (Preferred Alternative) would require the acquisition of property and structures located within the proposed Avenue R right-of-way. Implementation of the Project would result in potential full acquisitions of nine parcels including six residences, two businesses, and one vacant lot. No community facilities will be affected. In addition, the Project would result in approximately 39 partial acquisitions and approximately 16 TCEs. These relocations and displacements are shown on Table 10 and Figures 2-6a through 2-6e, Project Potential Acquisitions. The partial acquisitions and TCEs would not result in the relocations of any businesses or residences.

### Table 10  Full Acquisitions And Potential Displacements – Build Alternative (Preferred Alternative)

<table>
<thead>
<tr>
<th>Parcel</th>
<th>Address</th>
<th>Type of Use</th>
<th>Business Name</th>
<th>Approximate Number of Employees</th>
<th>Approximate Number of Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>3010-024-024</td>
<td>840 E Ave R Palmdale, CA 93550</td>
<td>Industrial Light Industrial</td>
<td>Clark &amp; Howard 24 Hr. Towing</td>
<td>20–49</td>
<td>N/A</td>
</tr>
<tr>
<td>3014-029-007*</td>
<td>1133 E Ave R Palmdale, CA 93550</td>
<td>Residential Triplex</td>
<td>N/A</td>
<td>N/A</td>
<td>3.03</td>
</tr>
<tr>
<td>3014-008-004</td>
<td>1245 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N/A</td>
<td>N/A</td>
<td>3.73</td>
</tr>
<tr>
<td>3014-008-002</td>
<td>1251 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N/A</td>
<td>N/A</td>
<td>3.73</td>
</tr>
<tr>
<td>3014-008-035</td>
<td>1259 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N/A</td>
<td>N/A</td>
<td>3.73</td>
</tr>
<tr>
<td>3009-021-033</td>
<td>905 E Ave R Palmdale, CA 93550</td>
<td>Commercial</td>
<td>Evan’s Market</td>
<td>1–4</td>
<td>N/A</td>
</tr>
<tr>
<td>3014-002-015</td>
<td>1055 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N/A</td>
<td>N/A</td>
<td>3.03</td>
</tr>
<tr>
<td>3014-008-024</td>
<td>Corner of Ave R and 12th St Palmdale, CA 93550</td>
<td>Vacant Lot</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3014-008-019</td>
<td>1223 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N/A</td>
<td>N/A</td>
<td>3.73</td>
</tr>
</tbody>
</table>

N/A: not applicable

Most of the impacted parcels are residential lots developed with single-family residences. Based on the average household size in the Census Tracts, approximately 19 occupants would be relocated. In addition, between 21 and 49 employees would be relocated from the 2 affected companies: the liquor store and the towing company. Some partial acquisitions involve a commercial parcel and a sliver take of the landscaped setback or parking lot along Avenue R right-of-way, and thus would not result in a relocation or other impacts. Owners of the properties would be compensated. Table 11 presents partial acquisitions that would result from implementation of the Project. Temporary Construction Easements (TCEs) will be limited to slivers of the properties adjacent to the Avenue R. TCEs are shown in Table 12.

Table 11 Partial Acquisitions and Potential Displacements – Build Alternative (Preferred Alternative)

<table>
<thead>
<tr>
<th>Parcel</th>
<th>Address</th>
<th>Type of Use</th>
<th>Relocation of Residents Y/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3010-024-031 856 E Ave R Palmdale, CA 93550</td>
<td>Industrial Light Industrial</td>
<td>N</td>
</tr>
<tr>
<td>2</td>
<td>3010-024-032 Ave R Vic 9th Street East Palmdale, CA 93550</td>
<td>Vacant Land Industrial</td>
<td>N</td>
</tr>
<tr>
<td>3</td>
<td>3010-024-008 906 E Ave R Palmdale, CA 93550</td>
<td>Vacant Land Industrial</td>
<td>N</td>
</tr>
<tr>
<td>4</td>
<td>3010-024-009 922 E Ave R Palmdale, CA 93550</td>
<td>Residential Multi-Family Residence (5+ Units)</td>
<td>N</td>
</tr>
<tr>
<td>5</td>
<td>3010-024-035 938 E Ave R Palmdale, CA 93550</td>
<td>Commercial Store/Office Combo</td>
<td>N</td>
</tr>
<tr>
<td>6</td>
<td>3012-002-009 Ave R Vic 12th St East Palmdale, CA 93550</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>7</td>
<td>3012-002-010 1156 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>8</td>
<td>3012-002-011 1204 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>9</td>
<td>3012-002-012 1210 E Ave R Palmdale, CA 93550</td>
<td>Residential Duplex</td>
<td>N</td>
</tr>
<tr>
<td>10</td>
<td>3012-002-013 1224 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>11</td>
<td>3012-002-014 1228 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>12</td>
<td>3012-002-015 1236 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>13</td>
<td>3012-002-016 1248 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>14</td>
<td>3012-002-017 1258 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>15</td>
<td>3012-003-022 1314 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>16</td>
<td>3012-003-021 1328 E Ave R Palmdale, CA 93550</td>
<td>Miscellaneous Religious</td>
<td>N</td>
</tr>
</tbody>
</table>
### Table 11  Partial Acquisitions and Potential Displacements – Build Alternative
(Preferred Alternative)

<table>
<thead>
<tr>
<th>Parcel</th>
<th>Address</th>
<th>Type of Use</th>
<th>Relocation of Residents Y/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>3012-003-020 Ave R Vic 15th St</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>3012-003-019 N/A (Multiple Owners)</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>19</td>
<td>3012-003-018 1500 E Ave R1</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>20</td>
<td>3019-001-009 Ave R Vic Hasting St</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>21</td>
<td>3019-001-031 Ave R Vic Hasting St</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>2</td>
<td>3019-001-025 Ave R Vic Ashlee Ct</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>23</td>
<td>3019-001-030 Ave R Vic Ashlee Ct</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>24</td>
<td>3019-001-001 Ave R and Ashlee Ct</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>25</td>
<td>3019-001-032 Ave R and Ashlee Ct</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>26</td>
<td>3019-001-002 Ave R Vic Ashlee Ct</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>27</td>
<td>3009-021-031 915 E Ave R</td>
<td>Industrial</td>
<td>N</td>
</tr>
<tr>
<td>28</td>
<td>3009-021-030 Ave R Vic 9th St</td>
<td>Vacant Land Miscellaneous</td>
<td>N</td>
</tr>
<tr>
<td>29</td>
<td>3009-021-029 Ave R Vic 9th St</td>
<td>Vacant Land Commercial</td>
<td>N</td>
</tr>
<tr>
<td>30</td>
<td>3014-002-019 1021 E Ave R</td>
<td>Residential Duplex</td>
<td>N</td>
</tr>
<tr>
<td>31</td>
<td>3014-002-018 1033 E Ave R</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>32</td>
<td>3014-002-017 1041 E Ave R</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>33</td>
<td>3014-002-016 Ave R Vic 11th St</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>34</td>
<td>3014-029-008 1141 E Ave R</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>35</td>
<td>3014-029-001 1147 E Ave R</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
</tr>
<tr>
<td>36</td>
<td>3014-010-016 Ave R/15th Pl E</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>37</td>
<td>3014-010-015 Ave R Vic Melton Ave</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>38</td>
<td>3014-027-010 Ave R Vic 20th St</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
<tr>
<td>39</td>
<td>3014-027-024 Ave R Vic 20th St East</td>
<td>Vacant Land Residential</td>
<td>N</td>
</tr>
</tbody>
</table>

Table 12  Parcels with Temporary Construction Easements – Build Alternative (Preferred Alternative)

<table>
<thead>
<tr>
<th>No.</th>
<th>Parcel APNs</th>
<th>Address</th>
<th>Type of Use</th>
<th>Slough Wall (Y/N)</th>
<th>TCEs sf</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3010-024-022</td>
<td>37940 Sierra Hwy Palmdale, CA 93550</td>
<td>Auto Sales, Service</td>
<td>N</td>
<td>2,820.1</td>
</tr>
<tr>
<td>2</td>
<td>3010-024-030</td>
<td>826 E Ave R Palmdale, CA 93550</td>
<td>Warehouse/ Storage</td>
<td>N</td>
<td>2,208.0</td>
</tr>
<tr>
<td>3</td>
<td>3012-001-001</td>
<td>1052 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
<td>859.0</td>
</tr>
<tr>
<td>4</td>
<td>3012-001-002</td>
<td>1058 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
<td>1,060.2</td>
</tr>
<tr>
<td>5</td>
<td>3012-001-003</td>
<td>1102 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
<td>711.1</td>
</tr>
<tr>
<td>6</td>
<td>3012-001-004</td>
<td>1108 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
<td>600.2</td>
</tr>
<tr>
<td>7</td>
<td>3012-001-005</td>
<td>1116 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
<td>605.1</td>
</tr>
<tr>
<td>8</td>
<td>3012-001-006</td>
<td>37937 Palm Vista Ave Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>N</td>
<td>1,265.5</td>
</tr>
<tr>
<td>9</td>
<td>3012-002-001</td>
<td>37938 Palm Vista Ave Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>Y</td>
<td>238.3</td>
</tr>
<tr>
<td>10</td>
<td>3012-002-002</td>
<td>1140 E Ave R Palmdale, CA 93550</td>
<td>Residential Single-Family Residence</td>
<td>Y</td>
<td>174.0</td>
</tr>
<tr>
<td>11</td>
<td>3009-019-003</td>
<td>831 E Aven R Palmdale, CA 93550</td>
<td>Office Building</td>
<td>N</td>
<td>1,363.3</td>
</tr>
<tr>
<td>12</td>
<td>3009-019-002</td>
<td>843 E Ave R Palmdale, CA 93550</td>
<td>C&amp;M TopSoil</td>
<td>N</td>
<td>1,345.8</td>
</tr>
<tr>
<td>13</td>
<td>3010-024-038</td>
<td>Ave R VIC 10th St E Palmdale, CA 93550</td>
<td>Commercial Store/Office Combo</td>
<td>Y</td>
<td>377.7</td>
</tr>
<tr>
<td>14</td>
<td>3010-024-035</td>
<td>938 E Ave R Palmdale, CA 93550</td>
<td>Commercial</td>
<td>Y</td>
<td>416.3</td>
</tr>
<tr>
<td>15</td>
<td>3014-009-021</td>
<td>1309 E Ave R Palmdale, CA 93550</td>
<td>Residential</td>
<td>N</td>
<td>2,393.4</td>
</tr>
<tr>
<td>16</td>
<td>3014-009-020</td>
<td>1309 E. Ave R Palmdale, CA 93550</td>
<td>Residential</td>
<td>N</td>
<td>1,270.8</td>
</tr>
</tbody>
</table>

TCE: temporary construction easement; sf: square foot

According to the Community Impact Memorandum and the Final Relocation Impact Statement, present conditions indicate that there are an adequate number of residential and business replacement sites for lease or purchase in the Project study area. Table 13, Replacement Stock, lists the number of residences and business sites that would be available for rent, purchase, or development.
According to the California Department of Finance, based on the current availability of residential units in the City of Palmdale and rental vacancy rates at 7.7 percent, sufficient residential market exists for the potential relocations. Based on the current availability of industrial/commercial properties for lease and/or sale in the City of Palmdale, a sufficient number of replacement properties are available on the market. Therefore, it can be reasonably assumed that displaced individuals could be accommodated in existing housing and the Project would not necessitate the construction of replacement housing elsewhere.

The impacted businesses (the towing company and liquor store/convenience store) would be classified as small businesses. Present conditions indicate there are an adequate number of business replacement sites or vacant lots with appropriate zoning for lease or purchase in the City. The towing company, as a business type, by its nature, does not cater to passing motorists but rather caters to regional demand for this type of services (i.e., on a City and regional scale); as such, the change of location should not result in special relocation issues. There are other liquor stores (e.g., two Seven Eleven stores, Siam Grocery Warehouse, Vallarta Super Market) located within one mile of the Project, and thus this area would not lack these type of services. Because of this, the Project would not eliminate irreplaceable services and/or locally dependent business in the community and would not affect the local economy. California law allows for the payment for lost goodwill that arises from the displacement for a public project. Businesses that are forced to be relocated or closed down, therefore, are likely to have substantial claims for loss of business goodwill. As such, the potential impacts of relocating a specialized business such as liquor store would be addressed and compensated.

The Final Relocation Impact Statement (FRIS) prepared for the Project determined that there are sufficient relocation resources available in the City of Palmdale for the residents that would be displaced by the Project. Furthermore, based on the current availability of industrial/commercial properties and vacant lots with appropriate zoning for sale, the Project would not necessitate the construction of replacement housing elsewhere.

### Table 13 Replacement Stock

<table>
<thead>
<tr>
<th>Relocation Resource</th>
<th>For Rent</th>
<th>For Sale</th>
<th>Total Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>20</td>
<td>262</td>
<td>282</td>
</tr>
<tr>
<td>Nonresidential</td>
<td>21</td>
<td>30</td>
<td>51</td>
</tr>
<tr>
<td>Vacant</td>
<td>3</td>
<td>20</td>
<td>23</td>
</tr>
</tbody>
</table>

Source: Final Relocation Impact Statement 2016
zoning in the City of Palmdale, a sufficient number of replacement properties is also available for the towing company. Additional relocation resources for residential and nonresidential uses (including parcels with adequate zoning for a towing company) may become available in the City before Project construction.

Given the Census Tracts’ housing characteristics and sufficient number of replacement properties, the Build Alternative (Preferred Alternative) would not result in adverse impacts related to relocations.

Temporary lane closures may occur during Project construction, which will be addressed by implementation of the TMP. During construction, access to all residential properties and businesses will be maintained at all times, but some traffic delays may occur. Construction impacts from the Project would be short term and would cease upon Project completion.

Relocation assistance and compensation would be provided in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act and Caltrans’ Relocation Assistance Program. Refer to standard condition RR-1.

**No-Build Alternative**

The No-Build Alternative would not provide any improvements to Avenue R. No right-of-way impacts would occur and no relocations would be necessary.

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

The following standard condition would further reduce relocation impacts.

**Standard Condition**

**RR-1** Prior to construction, the City will obtain all required right-of-way. Owners of property to be acquired shall be compensated for the fair market value of the property as well as damages, if any, to the remaining portions of their properties in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act. Relocation assistance and counseling will be provided to displaced businesses in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act to ensure adequate relocation for displaced businesses. All eligible displacees will be eligible for moving expenses. All benefits and services will be provided equitably to all relocatees without regard to
race, color, religion, age, national origin, or disability as specified under Title VI of the Civil Rights Act of 1964.

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 2010, this was $22,050 for a family of four. For 2013, this was $23,850 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 uphold the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix D of this document.

Affected Environment

Title VI of Civil Rights Act of 1964 requires that no person, because of race, color, religion, national origin, sex, age, or handicap be excluded from participation in, denied benefits of, or be subjected to discrimination by any federal aid activity. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low Income Populations (issued in February 1994), broadens this requirement to require that disproportionately high and adverse health or environmental impacts to minority and low-income populations be avoided or minimized to the extent feasible.

The Council on Environmental Quality has established definitions for NEPA analysis.

- Minority individuals are defined as members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black; or Hispanic.
- Minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population
percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

- Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census’ Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.

Caltrans’ Standard Environmental Reference (SER) also recognizes that “while these are the official definitions for NEPA analyses, they may not be appropriate for assessing environmental justice issues in transportation plans in California where minority individuals are the majority of residents and living expenses in some areas are unusually high”.

The demographic information shown in Tables 14 through 16 were collected at the census tract level because this level of data represents the larger area being evaluated as the study area. It allows a more accurate identification of trends over time.
Table 14  Race and Ethnicity

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Palmdale</td>
<td>4,936,599</td>
<td>856,874</td>
<td>72,828</td>
<td>1,346,865</td>
<td>26,094</td>
<td>2,140,632</td>
<td>438,713</td>
<td>4,687,889</td>
</tr>
<tr>
<td>Percent</td>
<td>50.3</td>
<td>8.7</td>
<td>0.7</td>
<td>13.7</td>
<td>0.3</td>
<td>21.8</td>
<td>4.5</td>
<td>47.7</td>
</tr>
<tr>
<td>LA County</td>
<td>74,901</td>
<td>22,677</td>
<td>1,316</td>
<td>6,548</td>
<td>335</td>
<td>38,773</td>
<td>83,097</td>
<td></td>
</tr>
<tr>
<td>Percent</td>
<td>49.0</td>
<td>14.8</td>
<td>0.9</td>
<td>4.3</td>
<td>0.2</td>
<td>25.4</td>
<td>5.4</td>
<td>54.4</td>
</tr>
<tr>
<td>City of Palmdale</td>
<td>3,517</td>
<td>913</td>
<td>57</td>
<td>218</td>
<td>12</td>
<td>1,958</td>
<td>400</td>
<td>4,422</td>
</tr>
<tr>
<td>Percent</td>
<td>48.1</td>
<td>11.4</td>
<td>0.8</td>
<td>2.2</td>
<td>0.1</td>
<td>32.0</td>
<td>5.6</td>
<td>66.1</td>
</tr>
<tr>
<td>Census Tract 9106.02</td>
<td>1,796</td>
<td>746</td>
<td>23</td>
<td>160</td>
<td>3</td>
<td>1,045</td>
<td>222</td>
<td>2,316</td>
</tr>
<tr>
<td>Percent</td>
<td>45.0</td>
<td>18.7</td>
<td>0.6</td>
<td>4.0</td>
<td>0.1</td>
<td>26.2</td>
<td>5.6</td>
<td>58.0</td>
</tr>
<tr>
<td>Census Tract 9105.05</td>
<td>1,474</td>
<td>348</td>
<td>23</td>
<td>66</td>
<td>2</td>
<td>979</td>
<td>172</td>
<td>2,025</td>
</tr>
<tr>
<td>Percent</td>
<td>48.1</td>
<td>11.4</td>
<td>0.8</td>
<td>2.2</td>
<td>0.1</td>
<td>32.0</td>
<td>5.6</td>
<td>66.1</td>
</tr>
<tr>
<td>Census Tract 9105.04</td>
<td>2,121</td>
<td>580</td>
<td>40</td>
<td>109</td>
<td>4</td>
<td>1,662</td>
<td>281</td>
<td>3,259</td>
</tr>
<tr>
<td>Percent</td>
<td>44.2</td>
<td>12.1</td>
<td>0.8</td>
<td>2.3</td>
<td>0.1</td>
<td>34.6</td>
<td>5.9</td>
<td>67.9</td>
</tr>
<tr>
<td>Census Tract 9105.01</td>
<td>1,528</td>
<td>1,619</td>
<td>37</td>
<td>135</td>
<td>11</td>
<td>1,650</td>
<td>359</td>
<td>2,933</td>
</tr>
<tr>
<td>Percent</td>
<td>28.6</td>
<td>30.3</td>
<td>0.7</td>
<td>2.5</td>
<td>0.2</td>
<td>30.9</td>
<td>6.7</td>
<td>54.9</td>
</tr>
<tr>
<td>Census Tract 9104.04</td>
<td>1,832</td>
<td>557</td>
<td>43</td>
<td>111</td>
<td>24</td>
<td>1,368</td>
<td>195</td>
<td>2,603</td>
</tr>
<tr>
<td>Percent</td>
<td>44.4</td>
<td>13.5</td>
<td>1.0</td>
<td>2.7</td>
<td>0.6</td>
<td>33.1</td>
<td>4.7</td>
<td>63.0</td>
</tr>
<tr>
<td>Census Tract 9104.03</td>
<td>867</td>
<td>266</td>
<td>23</td>
<td>30</td>
<td>1</td>
<td>923</td>
<td>125</td>
<td>1,730</td>
</tr>
<tr>
<td>Percent</td>
<td>38.8</td>
<td>11.9</td>
<td>1.0</td>
<td>1.3</td>
<td>0.0</td>
<td>41.3</td>
<td>5.6</td>
<td>77.4</td>
</tr>
</tbody>
</table>

LA: Los Angeles

*This number is shown as 0.0, but it is actually smaller than 0.1%.*

*b The US Census data and the California Department of Finance have slightly different population numbers for the County of Los Angeles in 2010. U.S. Census data was used in this table.*

Source: Community Impact Memorandum 2016.
### Table 15  Minority and Low Income Population Characteristics

<table>
<thead>
<tr>
<th>Project Study Area</th>
<th>Minority and Low Income Populations</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minorities^a</td>
<td>Hispanics</td>
<td>Median Household Income</td>
<td>Poverty level^b</td>
</tr>
<tr>
<td>Census Tract 9104.03</td>
<td>Number 320</td>
<td>1,730</td>
<td>$24,167</td>
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<tr>
<td></td>
<td>Percent 14.2</td>
<td>77.4</td>
<td>57.8</td>
<td></td>
</tr>
<tr>
<td>Census Tract 9104.04</td>
<td>Number 735</td>
<td>2,603</td>
<td>$43,368</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Percent 17.8</td>
<td>63.0</td>
<td>37.0</td>
<td></td>
</tr>
<tr>
<td>Census Tract 9105.01</td>
<td>Number 1,802</td>
<td>2,933</td>
<td>$17,761</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Percent 33.7</td>
<td>54.9</td>
<td>65.4</td>
<td></td>
</tr>
<tr>
<td>Census Tract 9105.02</td>
<td>Number 650</td>
<td>2,779</td>
<td>$33,399</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Percent 16</td>
<td>68.0</td>
<td>33.8</td>
<td></td>
</tr>
<tr>
<td>Census Tract 9105.04</td>
<td>Number 733</td>
<td>3,259</td>
<td>$37,321</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Percent 15.3</td>
<td>67.9</td>
<td>33.5</td>
<td></td>
</tr>
<tr>
<td>Census Tract 9105.05</td>
<td>Number 439</td>
<td>2,025</td>
<td>48,417</td>
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<tr>
<td></td>
<td>Percent 14.5</td>
<td>66.1</td>
<td>24.2</td>
<td></td>
</tr>
<tr>
<td>Census Tract 9106.02</td>
<td>Number 932</td>
<td>2,316</td>
<td>$27,198</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Percent 23.4</td>
<td>58.0</td>
<td>34.2</td>
<td></td>
</tr>
<tr>
<td>Census Tract 9106.03</td>
<td>Number 1,200</td>
<td>4,422</td>
<td>$51,866</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Percent 17.0</td>
<td>62.5</td>
<td>19.2</td>
<td></td>
</tr>
<tr>
<td>City of Palmdale</td>
<td>Number 30,876</td>
<td>83,097</td>
<td>$53,922</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Percent 20.2</td>
<td>54.4</td>
<td>21.2</td>
<td></td>
</tr>
<tr>
<td>LA County</td>
<td>Number 2,302,661</td>
<td>4,687,889</td>
<td>$55,909</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Percent 23.4</td>
<td>47.7</td>
<td>17.8</td>
<td></td>
</tr>
</tbody>
</table>

LA: Los Angeles

^a The “Minority” category includes the following races: African American; American Indian and Alaska Native; Asian; Native Hawaiian, and Other Pacific Islander.

^b Poverty level on the Census Tract level is reported by US Census Bureau, all individuals (Table DP-03)

Source: Community Impact Memorandum 2016.
# Table 16  
Race Alone and Ethnicity Population Characteristics

<table>
<thead>
<tr>
<th>Census Tracts</th>
<th>Race and Ethnicity Characteristics</th>
<th>Number</th>
<th>Percent</th>
<th>Race: White Alone not Hispanic or Latino</th>
<th>Race: African American Alone not Hispanic or Latino</th>
<th>Race: American Indian and Alaska Native Alone not Hispanic or Latino</th>
<th>Race: Asian Alone not Hispanic or Latino</th>
<th>Race: Native Hawaiian and Other Pacific Islander not Hispanic or Latino</th>
<th>Race: Other Race not Hispanic or Latino</th>
<th>Total One Race Non-Hispanic or Latino</th>
<th>Ethnicity: Hispanic or Latino</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Census Tract 9104.03</strong></td>
<td></td>
<td></td>
<td></td>
<td>204</td>
<td>248</td>
<td>1</td>
<td>16</td>
<td>1</td>
<td>34</td>
<td>505</td>
<td>1,730</td>
</tr>
<tr>
<td><strong>Census Tract 9104.04</strong></td>
<td></td>
<td></td>
<td></td>
<td>765</td>
<td>544</td>
<td>14</td>
<td>107</td>
<td>2</td>
<td>95</td>
<td>1,527</td>
<td>2,603</td>
</tr>
<tr>
<td><strong>Census Tract 9105.01</strong></td>
<td></td>
<td></td>
<td></td>
<td>563</td>
<td>1,543</td>
<td>9</td>
<td>122</td>
<td>8</td>
<td>161</td>
<td>2,406</td>
<td>2,933</td>
</tr>
<tr>
<td><strong>Census Tract 9105.02</strong></td>
<td></td>
<td></td>
<td></td>
<td>667</td>
<td>506</td>
<td>2</td>
<td>54</td>
<td>4</td>
<td>74</td>
<td>1,307</td>
<td>2,779</td>
</tr>
<tr>
<td><strong>Census Tract 9105.04</strong></td>
<td></td>
<td></td>
<td></td>
<td>789</td>
<td>557</td>
<td>12</td>
<td>96</td>
<td>4</td>
<td>80</td>
<td>1,538</td>
<td>3,259</td>
</tr>
<tr>
<td><strong>Census Tract 9105.05</strong></td>
<td></td>
<td></td>
<td></td>
<td>570</td>
<td>322</td>
<td>16</td>
<td>62</td>
<td>2</td>
<td>67</td>
<td>1,039</td>
<td>2,025</td>
</tr>
<tr>
<td><strong>Census Tract 9106.02</strong></td>
<td></td>
<td></td>
<td></td>
<td>729</td>
<td>692</td>
<td>9</td>
<td>143</td>
<td>3</td>
<td>103</td>
<td>1,679</td>
<td>2,316</td>
</tr>
<tr>
<td><strong>Census Tract 9106.03</strong></td>
<td></td>
<td></td>
<td></td>
<td>1,438</td>
<td>861</td>
<td>9</td>
<td>196</td>
<td>9</td>
<td>140</td>
<td>2,653</td>
<td>4,422</td>
</tr>
<tr>
<td><strong>City of Palmdale</strong></td>
<td></td>
<td></td>
<td></td>
<td>37,390</td>
<td>21,595</td>
<td>477</td>
<td>6,223</td>
<td>211</td>
<td>3757</td>
<td>69,653</td>
<td>83,097</td>
</tr>
<tr>
<td><strong>LA Countyb</strong></td>
<td></td>
<td></td>
<td></td>
<td>2,728,321</td>
<td>815,086</td>
<td>18,886</td>
<td>1,325,671</td>
<td>22,464</td>
<td>220,288</td>
<td>5,130,716</td>
<td>4,687,889</td>
</tr>
<tr>
<td><strong>Percent</strong></td>
<td></td>
<td></td>
<td></td>
<td>27.8</td>
<td>8.3</td>
<td>0.2</td>
<td>13.5</td>
<td>0.2</td>
<td>2.3</td>
<td>52.3</td>
<td>47.7</td>
</tr>
</tbody>
</table>

*LA: Los Angeles*

- This number is shown as 0.0, but it is actually smaller than 0.1%.
- The US Census data and the California Department of Finance have slightly different population numbers for the County of Los Angeles in 2010. U.S. Census data was used in this table.

Source: US Census 2010
Table 15 and Figures 2-7 through 2-10 present minority and low-income populations in the study area census tracts, the City of Palmdale, and the County of Los Angeles. Table 16 presents comparison of the US Census category “One Race not Hispanics or Latino Population” to the US Census category “One Race Hispanics or Latino Population.”.

Based on the Council on Environmental Quality definitions described above, even though minority populations are present in the study area census tracts, they are not larger than 50 percent in any given census tract, and they are not meaningfully greater than the minority population percentage in the City of Palmdale. Actually the percentage of minorities is substantially less than the percentage of minorities in the city of Palmdale. Only one census tract—CT 9105.01—exhibits elevated percentages of minority populations over the City of Palmdale’s respective population, but the percentage is below the 50 percent threshold. The Hispanic population in the study area census tracts is larger than 50 percent; this is similar to the city of Palmdale population, which also has over 50 percent of Hispanic residents. In general, the percentage of Hispanics in the study area census tracts is higher than that of city’s Hispanic population. However, the relocations would not occur in Census Tract 9104.03 which has the highest level of Hispanics.

Low income populations are also present in the study area census tracts, mostly in Census Tracts 9105.01, 9104.03, and 9104.04.

The majority of the minority (i.e., African-American) and low income populations are located in Census Tracts 9104.03, 9105.01, and 9106.02. Residential and business relocations would be located in Census Tracts 9105.01, 9105.02, and 9105.04. As shown in Tables 15 and 16, these census tracts are characterized by higher percentages of Hispanics than the city population; a substantially lower median household income than the city and County populations; and/or higher poverty levels than those of the City and the County.

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

Caltrans Order 5610.2(a), Final Department of Transportation Environmental Justice Order (2012), updates the Environmental Justice order published in April 15, 1997.

U.S. Department of Transportation Order 5610.2(a) sets forth the U.S. Department of Transportation (DOT) policy to consider environmental justice principles in all (DOT) programs, policies, and activities. The Order sets forth steps to prevent
disproportionately high and adverse effects to minority or low-income populations through Title VI analyses and environmental justice analyses conducted as part of federal transportation planning and NEPA provisions. It also describes the specific measures to be taken to address instances of disproportionately high and adverse effects and sets forth relevant definitions.

Under this Order, adverse effects are the total significant individual and/or cumulative health and effects of any Caltrans actions. Disproportionately high and adverse effects on minority and low-income populations are defined as an adverse effect that

1. is predominately borne by a minority population and/or a low-income population or

2. will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

Based on these assumptions, the analysis first considered whether, at the Census Tract level, the effects of the Project would be substantially borne by minority or low-income groups. Secondly, the consideration was given regarding whether the effects would be more severe to the minority population and/or low-income population in comparison to non-minority population and/or non-low-income population.

The Project is part of the “Safe Routes to School Program”, and is located in the area where underprivileged communities exist; the Project goal is to improve safety, mobility, and thus quality of life to these communities. The Project would not be disproportionately limited to the part of the Project area located within the census tract that shows a higher percentage of minority populations or low income populations than in the City as a whole. The Avenue R improvements would occur within the entire two-mile segment of the Project site and along all census tracts, some of which do not exhibit elevated numbers of low-income and minority populations.
Figure 2-7
Avenue R Safety Improvement Project
ATPL-5378(038)
Source: Census 2010/2013

Minorities: Non-White Population in the Study Area Census Tracts

- Study Area
- Census Tract Boundary
- Percent Non-White Population
  - 14.2% to 14.5%
  - 14.5% to 16%
  - 16% to 17.8%
  - 17.8% to 23.4%
  - 23.4% to 33.7%
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Figure 2-8

Avenue R Safety Improvement Project
ATPL-5378(038)
Source: Census 2010/2013

Minorities: Hispanics in the Study Area
Census Tracts

Percent Hispanic Population
- 54.9%
- 54.9% to 58%
- 58% to 63%
- 63% to 68%
- 68% to 77.4%
Figure 2-9

Avenue R Safety Improvement Project
ATPL-5378(038)

Source: Census 2010/2013

Median Household Income in the Study Area Census Tracts

$17,761
$17,761 to $27,198
$27,198 to $37,321
$37,321 to $43,368
$43,368 to $51,866
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### Population in Poverty in the Study Area Census Tracts

<table>
<thead>
<tr>
<th>Percent Poverty Population</th>
<th>19.2%</th>
<th>19.2% to 24.2%</th>
<th>24.2% to 34.2%</th>
<th>34.2% to 37%</th>
<th>37% to 65.4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Census Tract Boundary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Boundary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Census 2010/2013

Avenue R Safety Improvement Project

ATPL-5378(038)

Figure 2-10
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Based on the Table 14 above, some properties to be removed are located in census tracts that contain minority, Hispanic, and low-income populations. However, the number of houses and businesses that will be directly impacted is a very small percentage of properties in the Project study area. Six residential properties and two businesses will be displaced. These relocations would occur in the census tracts that do not exhibit disproportionate numbers of environmental justice populations. Therefore, when considering displacements, it was determined that the Project would not result in minority and low income population impacts. Hispanics constitute a large population in the study area and the City’s Spanish Speaking Agent is recommended to be used during relocation coordination (See Minimization Measure EJ-1).

The Project would not result in permanent impacts to the community other than relocations mentioned above. However, in the long term the Project would provide benefits to the low-income and minority populations in terms of mobility, increased connectivity, and pedestrian safety.

Factors other than right-of-way impacts were also evaluated when assessing the potential for minority and low income populations impacts. Consideration was given regarding whether the Project would result in other environmental impacts—such as greater air emissions, noise, or modification to transit service—that would be most heavily borne by minority or low-income groups. The Project would not increase localized air pollution levels because (1) the Project would provide alternative means of transportation; (2) the Project would not add vehicles to the roadway system; and (3) the air emissions under Project conditions would be the same as the air emissions under the No-Build Alternative. In addition, special precautions will be observed during construction due to Valley Fever (See Section 2.2.5, Air Quality). Therefore, the Project would not result in health-related and air quality impacts to low income and minority populations. The Project would not require modifications to transit operations, which is often a greater concern to low-income groups who are more likely to be transit dependent. Existing bus lines and bus stops would continue to operate during construction. In the long term, the Project would improve access to bus service and would upgrade bus stops resulting in benefit to community, including low income and minority populations. Therefore, the Project would not result in impacts to facilities that provide services to minority or low-income groups.

As discussed above, the Project effects and benefits would be borne by the entire population along Avenue R, including minority and/or low-income populations.
These effects are not appreciably more severe or greater in magnitude in the locations where the minority and/or low-income populations exist.

The acquisitions related to the Project would be addressed by complying with the Uniform Relocation Act. Based on the above discussion and analysis, in accordance with EO 12898 regarding environmental justice, the Build Alternative (Preferred Alternative) will not cause disproportionately high and adverse effects on any minority or low-income populations.

**No-Build Alternative**
The No-Build Alternative would not provide any improvements to Avenue R. As such, this alternative would not improve access to schools to underprivileged communities.

**Avoidance, Minimization, and/or Mitigation Measures**
Refer to avoidance measure AIR-2 in Section 2.2.5 Air Quality. In addition, the following minimization measure would be warranted.

**EJ-1** During right-of-way acquisitions, a Spanish-speaking right-of-way agent shall be used to effectively communicate with displacees.

### 2.1.4 Utilities/Emergency Services

**Affected Environment**

**Utilities**
The Project is served by the following water, wastewater, gas, electricity, and telecommunications systems providers:

- **Water Service:** Palmdale Water District
- **Wastewater:** Sanitation Districts of Los Angeles County
- **Gas:** SoCalGas
- **Electricity:** Southern California Edison
- **Telecommunications:** AT&T Distribution, Level 3 Communications, MCI (Verizon Business), Sprint, Sunesys, Southern California Edison – Telecom, Time Warner, Wilshire Connection LLC

These service providers have utilities within the Project’s right-of-way.
Emergency Services

Fire protection services for Palmdale are provided by the Los Angeles County Fire Department (LACFD). The LACFD’s Fire Station 37 is located at 38318 9th Street East, approximately 0.4 mile north of the Project site. See Figure 2-5, Community Facilities. Fire Station 131 is located at 2629 East Avenue S, approximately 1.0 mile south of the Project site. Fire Station 37 is located at 38318 9th Street East, approximately 0.5 mile from the west end of the Project segment. There are no fire stations in the Project study area.

The Los Angeles County Sheriff Department’s (LASD’s) Palmdale Station provides law enforcement services for the City. The Station is located at 750 East Avenue Q, approximately 0.9 mile north of the Project site. There are no police stations located in the Project study area.

There are no hospitals located in the Project study area; however, the Antelope Valley Community Clinic is located at 2151 East Palmdale Boulevard, approximately 0.6 mile north of the Project site. The Project study area is served by 2 hospitals: Palmdale Regional Medical Center, located 1.7 miles northwest at 38600 Medical Center Drive, and a division of Antelope Valley Hospital, located 1.6 miles northeast at 38350 40th Street East.

Environmental Consequences

Build Alternative (Preferred Alternative)

Utilities

All the utility companies (power lines and poles, telephone lines, underground utilities, and storm drain facilities) identified above have facilities in the existing right-of-way. The Build Alternative (Preferred Alternative) would not involve the construction of new utility facilities or require existing facilities to be upgraded, but there may be the need to move some of these facilities as part of the Project due to ground disturbance. No long-term impacts are expected. Giving enough notice to the utility companies would allow them to plan for the relocation of their facilities. Refer to standard condition UES-1. This type of coordination is a standard process during the design phase. The improvements would be constructed without disrupting operations during construction. This would be done through standard engineering practices.
Emergency Services

None of the public services discussed above would be permanently affected by the Project, although public services (e.g., fire, ambulance, police) may experience temporary delays associated with construction activities. Temporary lane closures may occur during Project construction for a week or two at each block. Construction of the Project will likely be phased and limited to a block length at a time to minimize construction-related impacts. A TMP will be prepared during the Plans, Specifications, and Estimates Phase that establishes the framework for proper coordination with emergency service providers to ensure that these service providers are notified of construction activities and any expected traffic shifts. With implementation of the plan, short-term, construction-related impacts to emergency service providers would not be substantial. Refer to avoidance and minimization measures UES-2 and UES-3.

In the long-term, the Build Alternative (Preferred Alternative) would not affect circulation, travel patterns or emergency response times along Avenue R as it does not propose any changes to the existing roadway.

No-Build Alternative

The No-Build Alternative would not have any direct impact on utilities or construction delays that could affect emergency services.

Avoidance, Minimization, and/or Mitigation Measures

Standard conditions that would minimize any potential impact include coordinating with all affected utility providers to ensure avoidance of any notable service disruptions during the extension or relocation of facilities.

Standard Conditions

UES-1 During Project design, the City of Palmdale and the Caltrans Right-of-Way Utilities Coordinator shall coordinate with utility providers regarding relocation of utilities without interrupting service.

UES-2 Caltrans and the City would also require the contractor to follow a Traffic Management Plan (see UES-3 below) to avoid impacts related emergency service providers.

UES-3 The City of Palmdale shall develop a Traffic Management Plan during the Plans, Specifications, and Estimates Phase to ensure safe and efficient traffic flow throughout the Project study area during all phases of construction. The Traffic Management Plan shall optimize
roadway capacity, signal phasing, and timing during construction. The City of Palmdale shall ensure that emergency service providers are aware of each stage of construction and of any potential service delays. In addition, prior to each construction phase, the City of Palmdale shall coordinate with Los Angeles County Metropolitan Transportation Authority (METRO) to develop appropriate safety provisions during construction. The Traffic Management Plan will include public notification of any modifications to bus stop locations or operational procedures during construction.

2.1.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

**Regulatory Setting**

The Department, 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 Code of Federal Regulations [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 and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

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

**Affected Environment**

**Traffic and Transportation**

Transportation and traffic for the Project was evaluated using the Circulation Element and Parks, Recreation, and Trails Element of the City of Palmdale’s 1993 General Plan and The City of Palmdale’s 2012 Housing Element Update Final Environmental Impact Report.
The City of Palmdale is bisected by the north-south-trending SR-14 (Antelope Valley Freeway). The City of Palmdale's circulation system has, for the most part, developed around a grid system in which major arterials are spaced approximately every mile and secondary arterials are spaced every half-mile between the major arterials. This pattern has provided a solid foundation for serving the community’s mobility needs. The following provides a description of the major arterials within the Project limits:

- **Avenue R.** Avenue R is classified as a Major Arterial by the City of Palmdale General Plan. Major arterials are spaced at approximately one-mile intervals, and represent the major carrying capacity for traffic to and within the City. Avenue R crosses under SR-14, but does not have an interchange. In the Project limits, Avenue R is a two-lane arterial in each direction, with dedicated right- and left-turn lanes. The posted speed limit on Avenue R is 50 mph west of 5th Street East and 40 mph east of 5th Street East.

- **Sierra Highway.** Sierra Highway is classified as a Major Arterial, which runs north-south adjacent to SR-14 in the study area limits. In the study area limits, on-street parking is prohibited, and the posted speed limit is 50 mph. Sierra Highway connects to the City of Mojave in Kern County on the north and to the City of Sylmar on the south via I-5/SR-14.

Five signalized intersections exist along Avenue R within the Project limits; from west to east these are as follows: Sierra Highway, 10th Street East, 11th Street East, 20th Street East, and 25th Street East. Other side street intersections in the study area are stop-controlled. The closest SR-14 interchanges are the SR-14/Palmdale Boulevard interchange on the north and SR-14/Avenue S on the south. These arterials carry the majority of freeway-oriented traffic.

**Level of Service**

The General Plan Circulation Element (1993) provides a blueprint for construction and maintenance of a transportation network, which will accommodate growth, support economic development, allow safe and convenient access, and meet regional transportation goals. The General Plan Circulation Element identifies that Avenue R needs to be improved for transportation continuity within the community, but does not identify the roadway as in need of operational improvements. For its roadway segments like Avenue R, the City of Palmdale strives to maintain LOS C or better to the extent practical; in some circumstances, a LOS D may be acceptable for a short duration during peak periods.
LOS is commonly used as a qualitative description of roadway segment operation and is based on the capacity of the roadway segment and the volume of traffic using the roadway segment. The City of Palmdale utilizes the volume-to-capacity (V/C) analysis method to determine the operating LOS of the roadway segments. The V/C analysis method describes the operation of a roadway segment using a range of LOS from LOS A (free flow conditions) to LOS F (severely congested conditions), based on the corresponding V/C ratios.

The most recent traffic volume data for the Project area was provided in the City of Palmdale Housing Element Update Final Environmental Impact Report (2012), which evaluated several major arterial road segments and intersections; it measures average daily trips (ADT) and LOS in the City including Avenue R between Sierra Highway and 15th Street East. As shown in Table 17 below, under existing conditions (2012) the segment of Avenue R between Sierra Highway and 15th Street East operates at LOS A and has a V/C ratio between 0.48 and 0.51. According to the City of Palmdale Housing Element Update Final Environmental Impact Report (2012), in the forecasted year 2040, Avenue R will continue to operate at LOS A. In 2040 Avenue R would operate at the LOS B and LOS C with the planned growth that would occur under Housing Element Update buildout.

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<tbody>
<tr>
<td>Avenue R between Sierra Hwy and 10th St East</td>
<td>36,000</td>
<td>17,455</td>
<td>19,133</td>
<td>0.48</td>
<td>0.53</td>
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<td>A</td>
<td>B</td>
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<tr>
<td>Avenue R between 10th St East and 15th St East</td>
<td>36,000</td>
<td>18,350</td>
<td>20,601</td>
<td>0.51</td>
<td>0.57</td>
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LOS: level of service; ADT: average daily trips; V/C: volume-to-capacity
Source: City of Palmdale Housing Element Update Final Environmental Impact Report 2012.

Safety
The Project is not located on a Caltrans-owned highway; thus, the Traffic Accident Surveillance and Analysis System (TASAS) was not available. The City of Palmdale
data indicates that the subject segment of Avenue R has experienced 166 pedestrian and/or bicycle collisions with injuries or fatalities between January 1, 2009 and December 31, 2011; of these collisions, 25 resulted in severe injuries and 5 resulted in fatalities. In addition, research on the California Statewide Integrated Traffic Records System (SWITRS) Geographic Information Systems (GIS) map, as reported by Transportation Injury Mapping System (TIMS), shows 30 injury-related accidents within the subject segment of Avenue R between January 2012 and December 2014.

Due to the location of several schools along Avenue R, student safety is a primary concern for the City. Along the subject segment of Avenue R, several features exist (e.g., sidewalk gaps, lack of school zone crosswalks, dirt shoulders), all of which contribute to a less than optimal route of travel for students to nearby schools. In addition, utility poles are located in the middle of the sidewalks and disrupt the flow of the sidewalk while reducing the width of the pathway. None of these features promote an environment that enhances mobility for pedestrians and students in the area.

**Transportation System Management**

The City implements Transportation System Management techniques to increase capacity of the existing road system, including but not limited to signal coordination, access controls, and parking restrictions.

**Transportation Demand Management**

Consistent with the Congestion Management Plan (CMP) the City will adopt and implement a Transportation Demand Management (TDM) ordinance that includes ridesharing programs, carpool/vanpool programs, and park and ride facilities.

**Parking**

On street parking exists along Avenue R in the following locations:

- Along Avenue R eastbound, west of 24th Street East
- Along Avenue R westbound, west of 20th Street East
- Along Avenue R westbound, east of 17th Street East
- Along Avenue R eastbound, west of 17th Street East
- Along Avenue R westbound, east and west of 15th Street East

**Public Transportation**

Local bus service in the City of Palmdale is provided by the Antelope Valley Transit Agency (AVTA) whose members include the Cities of Palmdale and Lancaster as
well as the County of Los Angeles. In the Project limits, AVTA Bus Route 3 operates along approximately ten bus stops, located approximately every one mile along Avenue R, in both the eastbound and westbound directions. Route 3 (Avenue R) eastbound departs from the Antelope Valley Mall and arrives at 47th Street East and Avenue S. Route 3 (Avenue R) westbound departs from 47th Street East and Avenue S and arrives at the Antelope Valley Mall.

The Union Pacific-owned railroad, currently being leased by Metrolink/Southern California Regional Rail Authority (SCRRA) traverses the study area in the western limits west of Sierra Highway. No train stations are located within the Project limits.

**Pedestrian and Bicycle Facilities**

As discussed above, several sidewalk gaps exist within the Project segment of Avenue R (e.g., east and west of 10th Street East, 12th Street East, 15th Street East, 20th Street East, and 25th Street East). These gaps cause accessibility issues and do not support pedestrian activity, mobility, or optimal safety. Under existing conditions, where the gaps are present, pedestrians are forced to walk on the side of the roadway and within close proximity to moving vehicles. Pedestrian crossings are limited and not well identified.

According to the City of Palmdale Bikeway and Multi-Purpose Trail Plan, three types of bike lanes exist within the 0.5-mile Project study area.

- **Class I Bikeway (Off-Street Paved Bike Paths):** Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with crossflow by motorists minimized. A Class I bikeway is located in the Avenue R right-of-way and extends between 6th Street East and Sierra Highway.

- **Class II Bikeway (On-Street Striped and Signed Bicycle Lanes):** Provides a striped lane for one-way bike travel on a street or highway. A Class II bikeway is located along 10th Street East and extends between Avenue R and East Avenue R-4.

- **Class III Bikeway (On-Street Shared-Lane Signed Bicycle Routes):** Provides for shared use with pedestrian or motor vehicle traffic. A Class III bikeway is located on Palm Vista Avenue and extends between Avenue R and East Avenue R-4.

Avenue R is designated as an adopted master plan route for bike movement; however, no continuous bike lane exists within the Project limits. A Class II bicycle lane
extends east and west of the Project limits, thus creating a gap within the Project segment.

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

**Construction Impacts**

**Traffic and Transportation**

Construction of the Project would include providing a continuous bike lane; adding new sidewalks; restriping in the entire Project alignment, including refreshing crosswalks at Sierra Highway, 10th Street East, 11th Street East, 20th Street East, and 25th Street East; erecting five slough walls; and adding traffic calming features.

The majority of construction activities along Avenue R will impact the existing northern and southern parkways and curb lanes. The Project would add one lane at the midblock for conducting safe left-turn movement and a continuous bike lane and sidewalk along the entire Project segment. Construction will be accomplished in a rolling sequence in order to minimize inconvenience to adjoining residents and businesses. A TMP will be prepared for the Project and will address construction-related impacts. Implementation of standard condition UES-3 (see Section 2.1.4) regarding implementation of TMP would minimize construction delays. Special attention and coordination will be performed with local schools to minimize delay and queuing during school’s drop-off and pick-up times.

The Project’s construction-related impacts would involve potential traffic delays, local congestion, and short-term lane closures. However, no traffic detours or road closures are proposed during construction. Construction would be scheduled in the daytime hours between 7:00 AM and 3:00 PM and would last for approximately 10 to 15 months. Lane closures would occur as a phased approach where a couple of blocks would be closed at a time. Traffic congestion would temporarily affect both automobiles and transit operations.

**Safety, Pedestrian and Bicycle Facilities**

Implementation of standard condition UES-3 (see Section 2.1.4) regarding implementation of TMP would provide information for pedestrians regarding the schedule of construction along Avenue R. During construction, Avenue R in its entirety would remain open and pedestrians will be able to utilize the street. Since there are currently no bicycle facilities along Avenue R, bicycle traffic is not expected to occur during construction.
Parking
Temporary impacts to on-street parking would include temporary parking removal for the purpose of reconstructing lanes and constructing the slough wall. Parking restrictions during construction would be addressed in the TMP.

Public Transportation
During Project construction, bus stops would be relocated for approximately two weeks to an adjacent alternative location along the route. As part of the TMP, the City would coordinate with the AVTA to assess the need for short-term bus stop relocation to ensure safe access for transit riders during construction. Implementation of standard condition TR-1 regarding coordination with public transportation providers would minimize impacts during construction.

Long-Term Improvements
After Project completion, Avenue R will be a ‘complete street’ with continuous sidewalks on both the northern and southern sides of the street. Avenue R will feature a buffered Class II bike lane, which would allow multi-modal use of the street, as pedestrians and bicyclists alike would have facilities to commute to and from school and other destinations in the community. The Project will not result in changes to the existing LOS because it will not increase capacity and throughput in the corridor, and will not result in changes to traffic patterns in the area. In addition, the Project would not result in changes in existing traffic signals along the Project segment. Because the Project would not add traffic to Avenue R, it would not change Average Daily Traffic in terms of vehicular travel and would not affect the existing LOS along the Project segment.

Safety, Pedestrian, and Bicycle Facilities
After Project completion, safety along the Project alignment would be enhanced because the Project would provide continuous sidewalks, safe crosswalks to nearby schools, and a buffered bicycle lane; the community would be safer because the Project provides additional safety features that have not been consistently implemented in the Project area.

Currently, in the Project limits, Avenue R is designated as a bike route; however, the lane widths are not designed to effectively accommodate mixed bicycle and vehicle traffic. In addition, a Class II bike lane exists east and west of the Project limits, and the Project is designed to close this gap. The Project would provide a continuous bike lane that would allow students to safely travel to local schools. The Project is
expected to remove pedestrians and bicyclists from travel lanes and, as a result, to greatly reduce potential for collisions.

In addition, the Project would complete sidewalk gaps and provide ladder-style crosswalks to enhance pedestrian walkability and mobility. By connecting gaps in the sidewalk and bicycle facilities, the Project will encourage school children and commuters to use this form of active transportation. The Project also proposes ADA improvements to the sidewalk and crosswalk, and it would provide a bulb out and ADA-compliant curb ramp at the 11th Street East and East Avenue R-4 intersection to provide a safer environment for the pedestrians and students to Tumbleweed Elementary School. As a result of the Project improvements, the overall safety and connectivity along the Project alignment would be improved.

Parking
Following Project completion, no permanent parking restrictions would occur.

Public Transportation
After Project completion, all bus stops would be relocated to the original location and some would be upgraded to turnouts and bays to provide enhanced access to public transit. These upgraded bus stops, turnouts, and bays would be provided on the northern and southern sides of Avenue R and approximately 20 to 250 feet away from the following intersections: 10th Street East, 11th Street East, Palm Vista Avenue, 15th Street East, Lasker Street, 17th Street East, 20th Street East, and 25th Street East.

In a letter dated May 12, 2014, the AVTA presented its support to the Avenue R Safety Improvement Project and recognized that Avenue R is part of the METRO Strategic Arterial Network.

No impacts to the Union Pacific Railroad/Metrolink/SCRRA are expected because there would be no improvement within the rail right-of-way. All construction activities would be located outside the rail right-of-way.

Implementation of the Avenue R Safety Improvement Project would enable the connection to the neighborhoods with the Sierra Highway bike path and to the Palmdale Transportation Center (Palmdale Metrolink station). Bus turnouts and improved transit access will also connect public transit users to the AVTA bus system.
No-Build Alternative

The No-Build Alternative does not propose any changes to existing conditions and does not propose any roadway improvements. There would be no impacts to parking. Under the No-Build Alternative, no impacts would occur to the existing public transit system.

Avoidance, Minimization, and/or Mitigation Measures

One standard condition would apply to this Project.

Standard Condition

**TR- 1**  
Prior to the construction phase, the City of Palmdale shall coordinate with the Antelope Valley Transit Authority, the Union Pacific Railroad, Metrolink, and the Southern California Regional Rail Authority (SCRRA) to develop appropriate safety provisions during construction. The Transportation Management Plan will include public notification of any modifications to bus stop locations or operational procedures during construction.

2.1.6 Visual/Aesthetics

**Regulatory Setting**

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

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

**Affected Environment**

The following information is provided to discuss the visual environment and changes resulting from the Project. The terminology used in the assessment of the visual environment is comprised of several key terms such as viewshed, viewer groups, and visual resources. The viewshed is defined as all surface area that can be observed...
from one location. Viewer groups are individuals that have a view of the viewshed or are affected by the viewshed. Visual resources are unique features that define and/or contribute to the visual environment.

Changes to the existing viewshed’s quality and/or character may affect viewer groups. Identification of the viewers and the aspects of the visual environment to which they are likely to respond are necessary to understand and predict viewer response to the Project. The response to the visual environment determines the viewer exposure and is based on the viewer groups; the viewer groups’ sensitivity to the visual elements; and the duration of their view. The impacts occurring from the Project to the visual environment can be described as follows:

- **Low**: Minor adverse change to the existing visual resource with low viewer response to a change in the visual environment.
- **Moderate**: Moderate adverse change to the visual resource with moderate viewer response.
- **Moderately High**: Moderate adverse visual resource change with high viewer response or high adverse visual resource change with moderate viewer response.
- **High**: Excessive adverse visual change to the resource or a high level of viewer response to visual change such that architectural design and landscape treatment cannot mitigate the impacts. Viewer response level is high.

The Avenue R viewshed is relatively flat and suburban in nature due to the presence of large undeveloped parcels. The visual character of the Project study area is typical for suburban areas: a mix of single-family residential houses interspersed with schools, apartment complexes, and convenience stores. Few large vacant parcels are scattered throughout the Project alignment. No major natural features or landmarks are present. No scenic vistas or scenic highways are located in the viewshed. Avenue R is not designated as a scenic roadway on the City of Palmdale General Plan. The dominant features along the Avenue R viewshed include paved roads, sidewalks, dirt shoulders, community fences, utility poles, one-story residential units located along the street, and some ornamental landscaping. Residential properties located along Avenue R do not exhibit a unique architectural style or particular visual character and theme (See Section 2.1.7 Cultural Resources).

As described above, the Avenue R viewshed is not considered unique because it consists of a built-out environment that lacks a particular character and quality. Therefore, the quality of the viewshed is considered moderate to low.
The primary viewer groups along Avenue R are motorists; pedestrians/bicyclists; residents; and commercial employees, office employees, and customers. The sensitivity of these viewer groups depends on the duration of exposure to changes.

Figure 2-11 provides a photograph location map, and Figures 2-12a and 2-12c provide representative photographs of the various existing land uses and visual features in the Project study area.

**Environmental Consequences**

The Project viewshed includes the areas likely to be affected by the visual changes as a result of the Project. Because of the flat topography, Project views are mostly limited to those uses along the Project alignment and motorists on the roadway. There are no distance views of the roadway that would be affected.

**Build Alternative (Preferred Alternative)**

The Project would not result in major landform alteration. The Project would not introduce any major new visual elements into the Project area. Avenue R is a four-lane arterial along the segment. The Project would close sidewalk gaps by providing new sidewalk; providing buffered bicycle lanes; and enabling safe routes to schools located in the study area. Because of this, the addition of hardscape features would be minimal. The Project may relocate existing street lighting to accommodate sidewalks and bikeways; however, no new lighting elements are proposed.

To minimize right-of-way acquisitions, five 1- to 3-foot-high slough walls will be constructed along Avenue R in the following areas: east of 10th Street East; between Palm Vista Avenue and 13th Street East; just east of 13th Street East; east of 15th Street East; and west of 20th Street East. They will be constructed fronting the street, the residential properties, the two commercial businesses, and the vacant parcels to support the sidewalk and grade difference. After construction is completed, the walls would only protrude 6.0 inches or 1.5 feet above ground and thus their appearance would be minimal. The slough walls would enhance the physical definition of the neighborhood by providing a separation of the existing residential uses from the traffic of the arterial highway. Therefore, they would not substantially alter the existing visual environment.

With implementation of the Project, the character and the quality of this segment of Avenue R would not change, but the overall unity of the viewshed would be enhanced due to continuity of paved sidewalks instead of gaps with dirt road shoulders. After Project completion, this residential neighborhood would still retain
its suburban residential character. As a result, the aesthetics in terms of unity of Avenue R within the Project limits would be enhanced and the Project would not result in adverse visual impacts.

**Response of Viewer Groups**

Due to the Project’s nature, the response of the motorist viewer group would be low. The Project would not introduce new major structural elements that would substantially change the Project viewshed. After Project completion, Avenue R would remain a major arterial in the urban built out environment as it is under existing conditions.

The response of the pedestrians and bicyclists would be moderate as the Project area would be more visually cohesive and would provide clarity of the location of the designated paths for pedestrians and bicyclists. However, the overall visual quality would not substantially change. Pedestrians and bicyclists would directly benefit from the Project’s improvements.

The most sensitive viewer group would be residents; specifically, the owners of the first row of residential units facing the street after the Project is constructed. Currently, this viewer group faces the street’s unpaved shoulders. After Project implementation, there would be a continuous sidewalk and a bike lane; however, the area would retain its residential character. After the Project completion, approximately four residential properties, currently located as a second row of buildings, would be facing Avenue R alignment. These viewers would not be directly fronting the Avenue R sidewalks but they would experience views onto Avenue R. Thus, these viewers would experience a change in their viewshed, and their viewer response may be moderately high to high. However, as described above the overall visual quality of the viewshed of the Avenue R would remain relatively the same and the residents have habituated to it over time. The residents similar to other viewer groups would also benefit from the project visual enhancements.

Due to the Project’s nature, the response of the Commercial office employees and their customers would be low. The Project would not change the existing visual setting of this area, but will incorporate community features that they may utilize in the future
Photo 1: Facing West towards Avenue R.

Photo 2: Facing East towards Avenue R from 10th Street intersection.
Photo 3: Facing West from Avenue R towards community mortuary.

Photo 4: Facing East, sidewalk gaps and Planetarium visible on the westbound Avenue R.
Photo 5: Facing east towards 11 Street East.

Photo 6: Facing east towards 13 Street East.
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Chapter 2 • Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

No-Build Alternative

The No-Build Alternative would not impact visual resources. The views from and of the Project site would remain the same.

Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative (Preferred Alternative) would not result in major visual impacts. No avoidance, minimization, and/or mitigation measures would be required.

2.1.7 Cultural Resources

Regulatory Setting

The term “cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. 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. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation [36 Code of Federal Regulations (CFR) 800]. On January 1, 2014, the First Amended Programmatic Agreement between 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 referred to as the Section 106 PA, went into effect for Caltrans’s projects, both state and local, with FHWA involvement. The PA implements the Advisory Council’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as CA Public Resources Code (PRC) Section 5024.1, which
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established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet the National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

Affected Environment

The Cultural Resources studies completed for the Project include a Historic Property Survey Report (HPSR, 2015), which contains the Archaeological Survey Report (ASR) and the Historical Resources Evaluation Report (HRER). A Supplemental HPSR (2016) was prepared per request from Caltrans Professionally Qualified Staff (PQS) to include areas that were not previously evaluated in the cultural reports (i.e., the HPSR, the ASR, and the HRER). These changes included (1) restriping the road west of Sierra Highway and further east of 25th Street East and on several of the north-south trending intersections; (2) constructing five segments of slough walls; (3) including several temporary construction easements; and (4) adding minor changes in the full versus partial right-of-way acquisitions. The Supplemental Project’s Area of Potential Effects (APE) includes all areas that might be either directly or indirectly affected by the Project. In accordance with the First Amended Section 106 Programmatic Agreement, the APE for the Project was established in consultation with Joshua Knudson, Caltrans PQS Architectural Historian, and Steve Novotny, District Local Assistance Area Engineer (DLAE), on October 21, 2015. An APE map was signed on March 29, 2016. The Supplemental APE map is located in Attachment 1 of the Supplemental HPSR. The APE was established as the disturbance/direct impact area and the full and partial takes adjacent to the disturbance/direct impact area.

An archaeological and historical resources records search for the APE and the surrounding ½-mile radius was conducted on June 2, 2015, at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton (HPSR Attachment 3). The SCCIC is the designated regional repository of the California Historical Resources Information System (CHRIS) for records regarding archaeological and historical resources and associated studies in Los Angeles County. The CHRIS system provides data on the National Register of Historic Places.
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(NRHP), the California Register of Historic Places (CRHR), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), and Historical Landmarks of Los Angeles County; historical maps and photographs were also reviewed as needed.

An archaeological and historic resources records search for the Project indicated that 18 studies have been completed within ½ mile of the APE. Of those, four included portions of the APE; however, none of the four included the entire APE. No prehistoric sites were identified from the records search within a ½-mile radius of the APE.

A total of 45 cultural resources were recorded within a ½-mile radius of the APE. Of those, 43 are single- and multiple-family residences in a neighborhood to the west of the APE. The remaining two cultural resources consist of an historic archaeological refuse scatter approximately ¼ mile to the north of the APE and a historic cement and brick foundation with associated artifacts. The latter site is located on the southwest corner of East Avenue R and 10th Avenue East, immediately south of the APE.

However, the pedestrian archaeological survey of the APE conducted on August 27, 2015, confirmed that this site no longer exists. No other prehistoric or historic archaeological resources were identified within the Project APE during the survey.

Within the APE, there were six parcels, some with multiple buildings that required formal evaluation for the NRHP and CRHR. All other buildings and structures were exempt from the evaluation. Six evaluated resources in the APE were determined not eligible for the NRHP; therefore, none are historic properties for the purposes of compliance with Section 106 of the National Historic Preservation Act. SHPO concurred with this approach on December 2015.

In addition, no resources were identified within the APE that are listed in a local register of historical resources or that have been identified as significant in a historical resources survey, and none of the evaluated resources in the APE appear eligible for the CRHR; therefore, none appear to be historical resources for the purpose of CEQA compliance. The HRER report determined that no historic properties will be affected by the Project.

The Native American Heritage Commission (NAHC) was notified about the Project on May 26, 2015, and was asked to conduct a records search of its Sacred Lands Inventory. The NAHC responded on June 23, 2015, with negative results for the search and provided a list of tribes that they recommend be contacted for additional
Letters were mailed to the tribes on that list on July 13, 2015, requesting any information they may have regarding the Project area. One response was received via email from Daniel McCarthy, Director – Cultural Resources Management Department, San Manuel Band of Mission Indians. Mr. McCarthy stated that, while the Project is located within the Tribe’s ancestral territory, he is aware of no specific information about significant cultural resources at the Project location. If prehistoric cultural resources were identified during the survey, Mr. McCarthy requested a copy of the report for review and consultation.

The Project is subject to the requirements of AB 52, the CEQA Tribal Consultation law that went into effect July 1, 2015. As such, in addition to the initial Native American coordination, consultation under AB 52 was subsequently conducted. On September 29, 2015 NAHC sent information with the list of additional tribes for consultation pursuant to the AB 52. The City of Palmdale, as the CEQA lead agency, sent letters to five tribes listed on the NAHC Sacred Lands File search (the three tribes that received the first letter and the two additional tribes subsequently identified by the NAHC) to consult with City on October 26, 2015. No tribes responded as part of this subsequent contact.

On September 2, 2015, the West Antelope Valley Historical Society was notified in writing of the Project and was requested to provide an historical background that may be relevant to the Project area in general. To date, no response from the organization has been received. In addition, several other organizations were contracted to solicit information on known historic properties in the vicinity of the Project area: Los Angeles County Historical Records and Landmarks Commission, Palmdale City Library, Antelope Valley Genealogical Society, Los Angeles Conservancy, Antelope Valley College Library, West Antelope Valley Historical Society.

Laura Dominguez, Preservation Coordinator for the Los Angeles Conservancy, sent an email on August 26, 2015, regarding potential presence of the “significant” modern era resources that could be affected. None of these properties were included within the project APE as none have the potential to be affected by the undertaking based on the current plans. A copy of the email is included in Appendix C of the HRER.

Roy Sinclair of the Commission Services Division of the Los Angeles County Board of Supervisors initiated contact by phone on August 27, 2015. No further contact was initiated.
Thomas Vose of the Palmdale City Library initiated contact by phone on September 8, 2015. Follow-up phone calls were placed on September 4, 2015, to those organizations who had not responded by that date.

A field survey of the built environment was conducted by Laura O’Neill, Senior Architectural Historian, and Elysha Paluszek, Architectural Historian on August 18, 2015. The purpose of this initial field survey was to identify buildings and/or structures located in the APE that were more than 45 years of age and would require evaluation for historic significance. Andrea Galvin, Principal Architectural Historian, reviewed the buildings and structures for exemptions as defined in Attachment 4 of the PA. After review, a total of six properties, some containing multiple buildings, were identified as requiring evaluation for the NRHP and CRHR.

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 CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Quint Chemnitz 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.

An archaeological field survey of the APE was conducted on June 2, 2015, by Archaeologist David Smith. The survey was accomplished by vehicle and on foot where the APE warranted close inspection.

**Environmental Consequences**

*Build Alternative (Preferred Alternative)*

**Architectural Resources**

As discussed above, a records search and study, conducted for the HRER, indicated that six built properties in the APE were determined not eligible for listing in the NRHP and/or CRHP. This determination received concurrence from SHPO on December 15, 2016. This finding constitutes a “No Historic Properties Affected” determination. The changes in the Supplemental HPSR did not need additional SHPO
review and the “No Historic Properties Affected” finding still applies, thus completing the Section 106 process.

Because there are no eligible historic properties in the Supplemental APE, provisions of Section 4(f) would not be triggered.

**Archaeological Resources**

No archaeological sites were found within the APE that would need evaluation. Concurrence from SHPO was received on December 15, 2016 regarding No Historic Properties Affected. The changes in the Supplemental HPSR did not need additional SHPO review and the “No Historic Properties Affected” finding still applies, thus completing the Section 106 process.

Therefore, the Project would not result in impacts to recorded archaeological sites.

**Tribal Cultural Resources**

The NAHC did not identify the presence of any Native American cultural resources in the immediate vicinity of the APE. Additionally, none of the Native Americans contacted in regards to this Project had any specific knowledge of any cultural sites in the Project APE; however, one respondent to the first Native American mail out—Mr. McCarthy from San Manuel Band of Mission Indians requested a copy of the prehistoric cultural resources report for review and consultation, if they are uncovered during the project construction. No known tribal cultural resources have been identified through the AB 52 process and NAHC consultation and the Project would not result in impacts to tribal cultural resources. However, the avoidance measure (CUL-2) listed below was added to ensure that should unknown tribal resources be encountered the tribes would be consulted with.

**No-Build Alternative**

The No-Build Alternative would not result in impacts related to historical or archaeological resources.

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

Because of the Section 106 review’s finding of “No Historic Properties Affected”, no avoidance, minimization, and/or mitigation measures are necessary for cultural resources. One standard condition would be applicable, but no minimization or mitigation measures would be required.
CUL-1 If previously unidentified cultural materials are unearthed during construction, it is Caltrans’ policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if the Project limits are extended beyond the current survey limits. If human remains are unearthed during construction, Section 7050.5 of the California Health and Safety Code states that no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition of the remains pursuant to Section 5097.98 of the California Public Resources Code.

CUL-2 If, during ground disturbance activities, previously unidentified tribal cultural resources are unearthed during construction, the San Manuel Band of Mission Indians will be informed about those findings and provided with the copy of the findings report for review and consultation.

2.2 Physical Environment

2.2.1 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

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

- Sections 303 and 304 require states to issue 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 U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
• Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
• Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

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

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

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the USACE’s Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency’s Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations [CFR] 40 Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. 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 standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the U.S. In addition, every permit from the USACE, even if not subject to
the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

**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 U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of “waste” as defined, and this definition is broader than the CWA definition of “pollutant.” Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

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

**State Water Resources Control Board and Regional Water Quality Control Boards**

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWQCBs 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 (NPDES) Program**

  **Municipal Separate Storm Sewer Systems (MS4)**

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

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

  1. Caltrans must comply with the requirements of the Construction General Permit (see below);

  2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

  3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

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

**Construction General Permit**

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

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with Caltrans Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.
Local Agency Construction Activity Permitting
The City of Palmdale is responsible for obtaining the NPDES permit if required and for signing certification statements. The City of Palmdale will contact the appropriate RWQCB to determine what permits are required for their construction activity. The City of Palmdale will be also responsible for ensuring that all permit conditions are included in the construction contract and fully implemented in the field.

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 the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

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

Local Assistance
Because the City of Palmdale is the owner/operator of the transportation facility, it is responsible for:

1. Obtaining all necessary permits, agreements, and approvals from resource and regulatory agencies (401/404, Encroachment, and U.S. Coast Guard (USCG) Bridge Permit, etc.) prior to advertisement for construction.
2. Fully complying with the conditions of permits.
3. Achieving all performance standards.
4. Preparing all required reports.
5. Providing a copy of each permit to the Caltrans District Local Assistance office for recording in LP2000.
Chapter 2 • Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

**Affected Environment**

Information in this section comes from the 2013 update of the Antelope Valley Integrated Regional Water Management Plan (IRWM), Water Quality Control Plan For the Lahontan Region (September 2015), and Caltrans Water Quality Planning Tool (2012).

The City of Palmdale is under the Jurisdiction of Lahontan Regional Water Quality Control Board (RWQCB Region 6). The study area is within Antelope-Fremont Valleys Hydrologic Unit in the South Lahontan Hydrologic Region. Within this hydrologic unit, the study area lies within the Lake Palmdale – Piute Ponds Watershed, specifically in the Lake Palmdale Subwatershed. The Antelope Valley Watershed encompasses 1,220 square miles, and Lake Palmdale Subwatershed is 1 of numerous small subwatersheds contributing to the region. The Lake Palmdale Subwatershed is one of the most urbanized, with residential, commercial, and industrial uses in the Antelope Valley. Therefore, it is a major contributor of man-made pollutants of concern, in comparison to other subwatersheds that are not heavily urbanized.

The Antelope Valley Region is a closed topographic basin with no outlets to the ocean. The basin ranges in elevation from approximately 2,300 feet to 3,500 feet above mean sea level (msl) and is generally bound by faults and their associated mountain ranges (e.g., San Andreas Fault with San Gabriel Mountains to the south; Garlock Fault with Tehachapi Mountains to the west).

The three most hydrologically critical streams in the Antelope Valley begin in the San Gabriel Mountains on the southwestern edge of the Antelope Valley and include Big Rock Creek, Littlerock Creek, and Amargosa Creek. One creek—Oak Creek—begins in the Tehachapi Mountains.

Typically, runoff from the San Gabriel Mountains in the southern portion of the basin is conveyed north through the Little Rock Wash, west of the unincorporated area of Littlerock, east of Palmdale and the Palmdale Regional Airport, to its destination at Rosamond Dry Lake. The wash is well-defined in the southern end of the valley and becomes undefined as it reaches its destination.

All water that enters Antelope Valley either infiltrates into the groundwater basin, evaporates, or flows towards three dry lakes: Rosamond Lake, Buckhorn Lake, and Rogers Lake located in the basin’s northern portion (northwest of Lancaster).
Lake Palmdale with the nearby Little Rock Reservoir (which is created by Little Rock Dam) is located 1.3 miles south of the Project site. However, due to topography, none of the hydrological features from the study area drain to this lake. Lake Palmdale has a surface area of 535 acres and is located at elevation of approximately 2,820 feet above msl.

Rosamond Lake, the closest dry lake to the Project site and located approximately 14 miles north, covers approximately 21 square miles. It is a dry flat playa that lacks vegetation and can contain a few inches or feet of water after a heavy rainstorm. The soil in this lake is impervious and evaporation rates are high. Water that collects in this lake eventually evaporates rather than infiltrating into the groundwater.

**Drainage Pattern in the Project Area**

The existing impervious areas (i.e., roadways, residential structures, and driveways) were calculated at 81 percent within the Project’s 21.7-acre disturbance limits. In the Project area, existing off-site drainage patterns are generally from south to north. Drainage patterns within the street right-of-way are easterly from Sierra Highway to 10th Street East; westerly from 15th Street East to 10th Street East; easterly from 15th Street East to 20th Street East; and westerly from 25th Street East to 20th Street East.

Existing drainage facilities in the study area consist of a combination of a subsurface storm drain system (pipes) and overland street flow (gutters). In addition, there are four surface drainages that bisect the study area and typically flow in a northeast direction. The general regional drainage pattern of the area is towards Little Rock Wash, which is located approximately six miles to the west and ultimately drains to Little Rock Creek. Flows continue to be conveyed north where some drainages end in sheet flow and some continue into ephemeral desert streams that eventually drain north into Rosamond Lake.

Since drainages in the study area are surrounded by development, they have no jurisdictional connectivity with any jurisdictional water body including Palmdale Lake (Refer to Section 2.3.2 for more discussion on these features and jurisdictional exemption).

**Beneficial Uses**

The Basin Plan contains the water quality standards and control measures for surface water and groundwater of the Lahontan region. Additionally, the Basin Plan designates beneficial uses; establishes water quality objectives; and designates waste
discharge prohibitions. The Basin Plan also includes Nondegradation Objectives and adopted Total Maximum Daily Loads (TMDLs) for the region.

The Basin Plan for the Lahontan Basin designates existing, potential, and intermittent beneficial uses for all water bodies in the region, including inland surface waters. These uses are the foundation of the water quality protection measures in the Basin Plan.

The drainages in the Project area do not directly connect to the Little Rock Creek or Lake Rosamond; however, due to the regional northeast-trending drainage patterns, these waterbodies can be potentially considered receiving waterbodies for the study area. The Basin Plan identified water quality beneficial uses for Little Rock Creek as follows: Cold Freshwater Habitat, Commercial, Groundwater Recharge, Municipal and Domestic Supply, Non Contact and Contact Recreation, and Wildlife Habitat. Water Quality beneficial uses of Lake Rosamond include use of water for natural or artificial Groundwater Recharge, Non Contact Water Recreation, Warm Freshwater Habitat, Saline Water Habitat, and Wildlife Habitat.

**Pollutants of Concern**

The Basin Plan identifies toxic pollutants that are found in the Antelope Valley Region. These pollutants are mostly associated with the mobilization of urban contaminants during storm events and can transport naturally occurring contaminants such as arsenic and other heavy metals. Contaminants such as pesticides, trash, oil, gasoline, radiator fluid, and animal wastes accumulate during dry months and are then mobilized at concentrated levels during storm events. Implementation of control measures for different types of nonpoint sources are discussed in the Basin Plan to help prevent water quality problems associated with contamination.

Section 303(d) of the Clean Water Act identifies waters that fail to meet standards for specific pollutants. If a State determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (i.e., NPDES permits or Waste Discharge Requirements), the CWA requires the establishment of TMDLs. TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed. None of the surface waters in the Antelope Valley are on the 2012 303(d) list and none have TMDLs.

Los Angeles County, in conjunction of Los Angeles County Flood Control District, implements the Municipal Separate Storm Sewer System NPDES Permit, often referred to as the “MS4 Permit”. The most recent NPDES MS4 Permit (WQO 2013-
0001-DWQ) was adopted in 2012 and regulates discharges from small municipal sewer systems. However, in a letter dated January 18, 2005, the Lahontan RWQCB indicated that it does not intend to regulate the City of Palmdale, the City of Lancaster, or unincorporated portions of Los Angeles County within the Lahontan Region under this MS4 permit.

**Groundwater**

The Antelope Valley Groundwater Basin is part of the Mojave Desert and is bordered on the southwest by the San Gabriel Mountains and on the northwest by the Tehachapi Mountains. Groundwater recharge in the basin is dependent on infiltration of return flow from agricultural irrigation and infiltration of runoff from the surrounding mountains.

Of the 12 groundwater subbasins in the Antelope Valley Groundwater Basin, the study area is within the Lancaster Subbasin, which is the largest subbasin in Antelope Valley. Water in this subbasin is largely used for agriculture, urban, and industrial applications. Groundwater flows to several pumping depressions and partially flows towards Rosamond and Rogers Lakes. In general, groundwater flows northeasterly from the mountain ranges to the dry lakes and depth to the groundwater varies dramatically within the subbasin.

According to the California Department for Water Resources’ online Water Data Library, a total of four groundwater monitoring stations are located within the 0.5-mile study area. According to the 2016 *Preliminary Environmental Site Assessment*, in proximity to the Project site, the depth to groundwater was measured at 243.78 feet below the ground surface in 2004 in a well located approximately 0.28 mile southeast of the Project site.

**Dam Inundation and Seiches**

As described in the City’s General Plan, a seismic event could cause a water wave or seiche to occur at Lake Palmdale, located approximately 1.3 miles south of the Project site, which could potentially overtop the dam. Wave volume above the dam would not be substantial (approximately one acre-foot) and would not result in damaging floods. According to the Aqueduct Failure Flow Direction (Exhibit S-7) in the 1993 General Plan, Avenue R is not depicted in the zone of the aqueduct failure.
Environmental Consequences
Build Alternative (Preferred Alternative)

Surface Waters
As discussed above, under existing conditions, the storm water from the area drains from south to north.

During the construction phase, excavation and grading activities would occur in the areas where sidewalks gaps are located. Excavation and grading would be conducted pursuant to the City of Palmdale’s Landscape and Erosion Control Standards; the requirements of the federal Clean Water Act; and the approved SWPPP to ensure that drainage through and near the Project site follows historic drainage patterns and that historic water volumes and velocity do not change from existing conditions. The Project will be required to prepare an SWPPP and to notify the SWRCB via the Storm Water Multiple Application and Report Tracking System (SMARTS) database.

During construction, soils adjacent to the existing alignment would be disturbed for the purpose of extending the sidewalk. This may result in erosion and thus, appropriate BMPs will be incorporated. The Project would be subject to the City of Palmdale Zoning Ordinance, which outlines general standards of development, including erosion-control and water-quality protection requirements. Adhering to these standards and requirements would ensure that soil exposed or disturbed by grading activities is properly stabilized and contained on the Project during construction and after completion, thus minimizing the Project’s impacts from soil erosion or loss of topsoil.

Construction of the headwalls in the drainage features is expected to be completed within a month. The existing culverts will be extended to accommodate the proposed pavement, bike lane, and sidewalk. No dewatering will be required. Extension of the drainage structure will be accomplished by joining the existing headwall with in-kind, beveled, reinforced concrete openings at both inlet and outlet points. Construction-related BMPs will be implemented to ensure that all stream flows would be diverted away from construction activities and would not create additional runoff.

The Project will be required to obtain a NPDES Construction General permit (WQO 2009-0009-DWQ) from the SWRCB because construction of the Project would result in 4.33 acres of soil disturbance. It will also be required to file a Notice of Intent with the SWRCB prior to construction. The Project will be required to prepare a Standard Urban Stormwater Mitigation Plan (SUSMP).
The Project will be required to obtain a Caltrans NPDES Stormwater permit (WQO 2012-0011-DWQ) from the SWRCB, which regulates municipal storm water discharges by Caltrans.

The Project may be required to obtain a Los Angeles County NPDES MS4 Permit (WQO 2013-0001-DWQ). However, in a letter dated January 18, 2005, the Lahontan RWQCB indicated that they do not intend to regulate the City of Palmdale, City of Lancaster, or unincorporated portions of Los Angeles County within the Lahontan Region under the MS4 permit.

During the operation phase, the Project would result in a very slight increase in the quantity of runoff generated in a storm event due to the increase in impervious surface area associated with the added pavement along the expanded street corridor. The quantity of additional runoff generated from the Project would not be substantial, and storm drains from subsequent projects would be sized and constructed in accordance with City of Palmdale standards. Because the Project would not add an additional vehicle travel lane, but rather a bike lane and a two-way left-turn lane, the Project is not expected to deposit an additional amount of heavy metals, engine oil, or other automobile wastes (e.g., antifreeze, transmission fluid, rubber) that can be transported by surface water runoff during storm events. Therefore, no additional sources of urban runoff and resulting adverse impacts to water quality are anticipated. Implementation of standard conditions WQ-1 and WQ-2 will ensure compliance with State and federal standards.

**Beneficial Uses**

There would be no water quality impacts affecting beneficial uses because construction and operational BMPs will be implemented during Project construction and operation. These BMPs are discussed below. Due to the Project nature and as a result of implementing these BMPs, no adverse impacts to beneficial uses are expected.

**Pollutants of Concern**

Runoff quality from roadways is highly variable depending on various factors, including climatic conditions; annual average daily traffic (AADT); roadway and shoulder material and conditions; surrounding land uses; and other factors. The typical pollutants of concern identified for roadway projects are as follows:

- Heavy metals
• Nutrients
• Pesticides
• Organic compounds, including petroleum hydrocarbons and oil and grease
• Sediment
• Trash and debris
• Oxygen-demanding substances (pesticides and petroleum hydrocarbons)

These pollutants of concern are already present in the Project area, and the Project would not result in additional new pollutants to the Project site. The Project will not result in incremental addition of these pollutants because the Project is not increasing capacity on the roadway or increasing traffic using the roadway. The Project would add a bicycle lane and not a traffic lane, and thus would not contribute to depositing additional amount of vehicle related pollutants of concern.

**Groundwater**

The depth to the historical shallowest occurrence of groundwater in the area is approximately 243.78 feet. Due to the depth to the groundwater, impacts are not anticipated due to the limited grading required for Project construction. No dewatering would be required. Should it be determined that dewatering is required, the dewatered effluent shall be trucked off site and disposed of according to existing laws and regulations. Since the Project does not anticipate any contact with groundwater, there would be no impacts associated with exposure to the contaminants in the groundwater.

The impact of the Project would be minimal in terms of adverse effects on groundwater resources or recharge because the Project is not adding residential units or contributing to substantial population growth, and the Project will not deplete groundwater supplies nor interfere substantially with groundwater recharge. No effects to the groundwater recharge from the Project is expected.

The proposed improvements will not violate any water quality standards or waste discharge requirements, nor will it 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.
Chapter 2 • Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Drainage Patterns
As discussed above, the existing drainage patterns are generally from south to north. Due to the small areas of improvement along the roadway alignment, the Project would not result in alteration of the existing drainage pattern.

The existing Project area covers approximately 21.7 acres, of which 17.7 acres is impervious. The Project will result in a net increase in impervious area of approximately 2.3 acres. The resulting runoff will be subject to appropriate BMPs including, but not limited to, sand and gravel bag barriers, silt fences, inlet protection, and infiltration facilities. Runoff from the Project in excess of existing flows will be captured by a storm drain system to be constructed in Avenue R, under separate contract, but concurrent with this Project.

Consistent with the City’s Master Plan of Drainage, subsequent, independent projects will construct 36-inch to 54-inch underground storm drain pipes to join a 96-inch-diameter storm drain on 15th Street East. A 78-inch-diameter pipe will collect drainage east of 15th Street East and will channel it underground to join a 9.0-foot by 8.5-foot Reinforced Concrete Box (RCB) structure north of Avenue R on 20th Street East.

Dam Inundation and Seiches
The potential for dam inundation or by seiche already exists on the site and, by its nature, the Project would not result in increase of this hazard. No potential for aqueduct failure is expected.

No-Build Alternative
The No-Build Alternative would not result in any water quality impacts.

Avoidance, Minimization, and/or Mitigation Measures
The following avoidance and minimization measures are warranted to ensure the Project complies with all rules and regulations.

WQ-1
The City of Palmdale shall prepare and implement construction site Best Management Practices (BMPs) in compliance with the provisions of the Construction General Permit; the Municipal Separate Storm Sewer System (MS4) Permit (if applicable); the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity; and any subsequent permit as
they relate to construction activities for the Project. This will include submittal of Permit Registration Documents (PRDs) on the SMARTS System in order to obtain permit coverage, preparation, and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and submission of a Notice of Construction Completion (NCC) to the California Department of Water Resources’ Storm Water Multiple Application and Report Tracking System (SMARTS) upon completion of construction and stabilization of the project site.

WQ-2 Prior to construction, an SWPPP, along with erosion control-specific elements, shall be prepared by the contractor and submitted to the City for approval. The erosion-control measures shall be designed to limit the effects of soil erosion and water degradation during construction. This plan shall be prepared and implemented in accordance with the requirements of the RWQCB’s NPDES permit requirements.

2.2.2 Geology/Soils/Seismic/Topography

Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under the California Environmental Quality Act (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 the Department’s 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 the Caltrans’ Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

Affected Environment

Information in this section comes from the City of Palmdale’s 1993 General Plan, the California Division of Mines and Geology, the 2015 Avenue R Vertical Area of
Geologic Formations and Soils

Topography of the area is gently sloping with an elevation of approximately 2,630 to 2,680 feet above mean sea level (msl). The surface geology in the area is composed of three units: artificial fill and disturbed areas; younger, undissected Quaternary surficial sediments; and older dissected Quaternary surficial sediments. The majority of the Project is on younger Quaternary alluvium surficial sediments of alluvial gravel; on sand; and on silt/clay of valleys and canyon flood plains (Qa). There are three short sections on older Quaternary surficial sediments, which include the dissected remnants of alluvial gravel and sand of mostly schist detritus (Qos). The Qos is located generally between 13th Street East and Melton Avenue, a short distance to the east and west of 17th Street East, and in proximity to Palmdale High school.

The soils along Avenue R consist of gravelly sandy loams in the eastern portion of the Project site, transitioning to loamy soils in the western portion of the Project study area. Specifically, soils include Adelanto coarse sandy loam, Hanford sandy loam, Ramona coarse sandy loam, Ramona gravelly sandy loam, Sorrento loam, and Vernalis loam. The majority of undeveloped parcels are located on Adelanto coarse sandy loams, Ramona sandy loams, and Sorrento loams.

The City of Palmdale General Plan’s Exhibit S-11, Soil Erosion Potential, depicts that the majority of the Avenue R Project’s western segment is located in a zone determined to have “Moderate” erosion potential. The east side of the Avenue R is determined to have a “None to Slight” erosion potential.

Seismicity and Faults

Avenue R is located in the southwestern corner of the Antelope Valley which is bound by the Garlock Fault to the northwest and the San Andreas Fault to the southwest. The Tehachapi Mountains extend in northeast-southwest direction, and adjoin the Garlock Fault. The San Gabriel Mountains, which extend in a northwest-southeast direction, adjoin the San Andreas Fault. Elevations within the Antelope Valley range from 2,300 to 3,500 feet above msl (San Gabriel Mountains) and 7,981 feet above msl (Tehachapi Mountains).

The area’s seismicity is dominated by the intersection of the northwest-trending San Andreas Fault system with the east-west-trending faults that are part of the Transverse Ranges system and the northeast-trending Garlock Fault system. These fault systems
are responding to strain produced by the relative movement of the Pacific and North American crustal plates. According to the California Division of Mines and Geology map (1979), Avenue R is located approximately 0.5 mile north of the San Andreas Fault. The San Andreas Fault extends over 600 miles from the Salton Sea, northwest toward the Pacific Ocean at Point Arena. This fault is considered one of the most dangerous in the state in terms of destructive potential and has been known to generate an earthquake of Maximum Probably Magnitude (MPM) of 8+. Therefore, the site would potentially be subject to strong seismic ground shaking due to future earthquakes on regionally active faults.

Areas subject to the Alquist-Priolo Earthquake Fault Zoning (Alquist-Priolo Act) typically include zones located within 1/8 mile of an active fault. The City of Palmdale implements the Alquist-Priolo Act by means of the development review process, in which every proposed development within the seismic hazard zone is required to prepare a detailed geotechnical report and fault rupture survey. Although the Avenue R Project is not a development project, a Geotechnical Report will be prepared in conjunction of or prior to approval of final plans and specifications.

Additionally, according to the 2003 California Seismic Hazard Zones Map, the Project is located outside the liquefaction and earthquake-induced landslide zones. The Project will have to comply with the requirements of the California Building Code seismic standards.

**Liquefaction, Soils Expansion, and Subsidence**

The State of California Seismic Hazards Zones map depicts the effects of earthquake-triggered ground failure as required by the Seismic Hazards Mapping Act.

Liquefaction occurs when the affected soil layer loses its primary characteristics and behaves as a liquid. Susceptibility to liquefaction is based on geologic and geotechnical data. River channels and floodplains are considered most susceptible to liquefaction, while alluvial fans have a lower susceptibility. Depth to groundwater is an additional factor in liquefaction susceptibility. Groundwater shallower than 30 feet results in high to very high susceptibility to liquefaction, while deeper water results in low and very low susceptibility.

According to the State of California Seismic Hazards Zones Map (2003), Avenue R is located outside of areas subject to liquefaction, earthquake-induced landslides, and areas subject to both liquefaction and landslides, which are known as “overlapping areas”.
In addition, the City of Palmdale General Plan provides supplemental information of other earthquake-related effects such as soils expansion and subsidence. According to the Soil Expansion Potential Map (General Plan, Map S-10), the majority of Avenue R east of Sierra Highway is located within a moderate soils expansion potential zone. Low soils expansion potential is delineated on the east side of Avenue R towards 25th Street East.

The City of Palmdale General Plan Subsidence Map (Exhibit S-14) depicts that the western portion of Avenue R in vicinity of Sierra Highway is located on soils unclassified for subsidence, whereas the eastern portion is located in soils with Low to Moderate potential for subsidence.

**Surface Waters and Groundwater**

Four drainages cut through the central portion of Avenue R in a generally north-south direction. However, surface water was observed only in two of them, and none of them are blueline streams. One drainage feature crosses Avenue R between 15th Street East and 17th Street East. Another drainage crosses Avenue R approximately 300 feet west of 20th Street East. Both streams flow from south to north. The drainages convey urban water runoff from adjacent residential and commercial land uses and were observed to contain a high amount of trash.

The General Plan describes groundwater movement in a generally northwesterly direction, from the foothills of the San Gabriel Mountains towards the Lancaster depression. The Project’s 2016 *Draft Limited Environmental Site Assessment* does not provide information regarding specific depth to groundwater as it was not available for the Project area. No wells were observed in the Project area during the site survey. However in a nearby well, located 0.28-mile southeast of the Project area, depth to groundwater (measured on March 30, 2004), was measured at 243.78 feet below the ground surface. Groundwater flow was determined to flow northeast.

**Extraction of Minerals**

According to the City’s 1993 General Plan, Avenue R is located outside the mineral extraction area (Exhibit LU-6 Sand and Gravel Resource Area).

**Environmental Consequences**

*Build Alternative (Preferred Alternative)*

**Geologic Formations and Soils**

The Project would not change the existing geologic setting of the site. As discussed above, the Project is located in a relatively flat area that is not subject to slope failure
or landslides, nor is it located on any geologic unit that is unstable. Because the Project is not located on any unstable geologic units, it would not result in a substantial adverse effect to a geologic unit or soil that is unstable, or that would become unstable as a result of the Project. The majority of the site is paved; however, exposed soils exist along the street shoulders. Implementation of the Project would result in disruption of 4.33 acres of soils during construction, but the Project’s operational phase would not result in any impacts to top soils. If the Project disturbs over one acre of soils, it would be required to prepare a Standard Urban Storm Water Mitigation Plan (SUSMP), as required by the Lahontan RWQCB (See Section 2.2.1, Water Quality).

**Seismicity and Faults**

The Project site is located in California, which is subject to seismic events as a result of numerous seismic faults in Los Angeles County and Southern California. In addition, the Project site is located in close proximity to San Andreas Fault. The Project segment is not located within the published Palmdale Quadrangle Alquist-Priolo Earthquake Fault Zone dated January 1, 1979, and no known active faults are shown on current geologic maps for the site. Areas subject to Alquist-Priolo Act typically include zone located within 1/8 mile of an active fault, and the Project is located just outside this zone. Therefore, no additional seismic investigations are required. However, given the Project’s the proximity to these and numerous other active and potentially active faults, the area would likely be subjected to earthquake ground motions in the future. Depending on the soil substrate, earthquake shaking can generate a variety of geological effects and thus, preparation of Geotechnical Report is required. The Project includes roadway improvements and does not propose any habitable structures that would expose people or structures to seismic events, including the risk of loss, injury, or death more than what occurs under existing conditions. In addition, the Project will adhere to Caltrans’ standard seismic practices. Implementation of avoidance and minimization measures GEO-1 and GEO-2 would ensure compliance with geotechnical specifications. With implementation of the avoidance and minimization measures, the Project would not expose people or structures to potential substantial adverse effects including the risk of loss, injury, death due to rupture of known fault. No substantial adverse effects are expected.

**Liquefaction, Soils Expansion, and Subsidence**

The Project would not increase the potential for liquefaction, soils expansion, or subsidence because the Project does not propose dwelling units. No effects are expected to occur with respect to subsidence and liquefaction. However, in areas with
moderate soil expansion potential, a detailed geotechnical investigation is recommended. Refer to avoidance and minimization measure GEO-1. Caltrans and City standard seismic practices will be implemented to ensure that soil expansion potential is minimized. Therefore, the Project would not result in substantial adverse effect related to expansive soils and would not create a substantial risk to life or property.

**Surface Waters and Groundwater**

For descriptions of impacts to surface waters and groundwater see Section 2.2.1, Water Quality and Storm Water Runoff.

**Mineral Extraction**

Avenue R is located outside the mineral extraction area, and the Project would not necessitate use of minerals. Therefore, no adverse effects are expected to occur.

**No-Build Alternative**

The No-Build Alternative would not improve this roadway segment and the existing potential for soil expansion would remain as it is under existing conditions.

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

The following avoidance and minimization measures are warranted.

- **GEO-1**
  
  Prior to Final Design, a Geotechnical Report will be prepared and approved by Caltrans and City geologist.

- **GEO-2**
  
  During construction, a geotechnical consultant shall be retained to provide soil engineering services.

**2.2.3 Paleontology**

**Regulatory Setting**

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects (e.g., Antiquities Act of 1906 [16 U.S. Code 431-433], Federal-Aid Highway Act of 1960 [23 U.S. Code 305]), and the Omnibus Public Land Management Act of 2009 [16 U.S. Code 470aaa]). Under California law, paleontological resources are protected by the California Environmental Quality Act.
Affected Environment

The information in this section is based on the Paleontological Resources Identification Report and Evaluation Report (September 2015).

Physical Geography

Paleontological resources (fossils) are defined as any trace of a past life form. While wood, bones, and shells are the most common fossils, under certain conditions, soft tissues, tracks, and trails may be preserved as fossils. Fossils are most commonly found in sedimentary rock layers. The study area extends along Avenue R from Sierra Highway on the west to 25th Street East on the east.

Geology

The Project study area is within the Mojave Desert Geomorphic Province, which is a broad interior region of isolated mountain ranges separated by expanses of desert plains. It has interior enclosed drainages with many playas or dry lakes.

There are two important fault trends that control topography: a prominent northwest-southeast trend and a secondary east-west trend. The Mojave Desert province is wedged in a sharp angle between the Garlock Fault (southern boundary of the Sierra Nevada) and the San Andreas Fault, where it bends east from its northwest trend. The northern boundary of the Mojave Desert is separated from the prominent Basin and Range by the eastern extension of the Garlock Fault.

Paleontological Sensitivity

A formation or rock unit has paleontological sensitivity if it previously has produced or if it shows properties favorable for vertebrate fossils and associated or regionally uncommon invertebrate and plant fossils. All sedimentary rocks and certain volcanic and mildly metamorphosed rocks are considered to have sensitivity for paleontological resources.

Per Caltrans environmental standards, the sensitivity of a formation or unit can be designated in one of three categories: high potential, low potential, or no potential. In addition, the Society of Vertebrate Paleontology (1995) provides definitions of sensitivity, including Paleontological Sensitivity and Paleontological Potential.

Literature Review

A paleontological records search was requested of Dr. Sam McLeod at the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County (NHMLAC). Dr. McLeod responded on June 17, 2015. The records search revealed
that, although there are no recorded fossil localities in the current Project area, the NHMLAC does have record of fossil localities from sedimentary units similar to those that occur in the Project area.

The surface deposits in the Project area consist of younger Quaternary alluvium, predominantly as alluvial fan deposits. These younger Quaternary deposits typically do not contain significant vertebrate fossils, at least in the uppermost layers, but they may be underlain at relatively shallow depth by older Quaternary deposits that do contain significant fossil vertebrate remains. Just east of the Project area, along Avenue S from Little Rock eastward, localities LACM 5942 through LACM 5953 (which were discovered during pipeline excavations in the Quaternary alluvium and older Quaternary sediments) produced a fauna of small vertebrates, including gopher snake (*Pituophis*), kingsnake (*Lampropeltis*), leopard lizard (*Gambelia wislizenii*), cottontail rabbit (*Sylvilagus*), pocket mouse (*Chaetodipus*), kangaroo rat (*Dipodomys*), and pocket gopher (*Thomomys*).

The next closest vertebrate fossil locality from these Quaternary deposits is LACM 7884 (which was uncovered just northeast of the Project area on the northern side of Lancaster near Avenue I), which produced a fossil specimen of camel (*Camelops hesternus*) from four feet below the surface. The next closest fossil vertebrate locality from these deposits is LACM 7853 (which is further northeast of locality LACM 7884 near Avenue F), which produced a suite of fossil vertebrates at a three-foot depth; some of these include smelt (*Osmeridae*), whipsnake (*Masticophis*), leaf-nosed snake (*Phyllorhynchus*), lyre snake (*Trimorphodon biscutatus*), desert iguana (*Dipsosaurus dorsalis*), alligator lizard (*Elgaria*), desert spiny lizard (*Sceloporus magister*), side-blotched lizard (*Uta stansburiana*), horned lizard (*Phrynosomatidae*), skink (*Plestiodon*), western whiptail (*Aspidoscelis tigris*), desert night lizard (*Xantusia vigilis*), rabbit (*Sylvilagus audubonii*), wood rat (*Neotoma*), deer mouse (*Peromyscus*), pocket gopher (*Thomomys bottae*), kangaroo rat (*Dipodomys*), pocket mouse (*Perognathus*), ground squirrel (*Ammospermophilus leucurus*), and camel (*Camelops*).

Table 18 rates the potential of the underlying rock units to yield fossils during earth-moving activities.
Table 18  Paleontological Potential of the Surficial Units Underlying Portions of the Avenue R Safety Improvement Project

<table>
<thead>
<tr>
<th>Stratigraphic Unit</th>
<th>Paleontological Potential</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artificial Fill (Af)</td>
<td>No</td>
<td>Modern fill deposits are associated with previous construction along Avenue R. These areas have no potential to yield significant paleontological resources.</td>
</tr>
<tr>
<td>Quaternary surficial deposits (Qa)</td>
<td>High</td>
<td>Present along most of Avenue R, and are probably Late Holocene in age deposits. At greater depths, there is a potential to yield significant fossils.</td>
</tr>
<tr>
<td>Quaternary older dissected surficial sediments (Qos)</td>
<td>High</td>
<td>Present in lobes along Avenue R. These sediments are from the remnants of older alluvial fan deposits. Nearby, these sediments yielded a fauna of small vertebrates.</td>
</tr>
</tbody>
</table>

Source: Paleontological Resources Identification Report and Evaluation Report 2015

Field Inspection

On September 13, 2015, a field survey for paleontological resources was conducted by Senior Paleontologist Mark A. Roeder. Mr. Roeder has over 30 years of experience preparing paleontological resource documents and conducting field surveys in Los Angeles County. Most of the Supplemental APE was developed, but there were several areas where the underlying geology could be examined. No fossils were observed.

There are no previously recorded paleontological resources in the study area, nor are there any known paleontological resources within a one-mile radius of the Project site.

The area is underlain by three rock units: artificial fill, Quaternary older dissected surficial sediments (Qos) and Quaternary surficial sediments (Qa). The latter two geologic units are exposed at the surface and are considered sensitive resources.

Environmental Consequences

Build Alternative (Preferred Alternative)

Impacts to paleontological resources even those occurring from construction activities are considered permanent, not temporary.

Shallow excavations in the younger Quaternary Alluvium exposed in most of the Project area are unlikely to uncover significant vertebrate fossils. Deeper excavations in those younger Quaternary deposits extend down into older Quaternary deposits. The paleontological potential for yielding significant fossils for artificial fill is non-existent, but high for the Quaternary older dissected surficial sediments (Qos) and
Quaternary surficial sediments (Qa). Therefore, monitoring is recommended during Project construction when grading will expose Quaternary older dissected surficial sediments (Qos) and Quaternary surficial sediments (Qa). Securing a paleontologist during Project construction (refer to avoidance and minimization measure PAL-1) and implanting construction monitoring (refer to avoidance and minimization measure PAL-2) would ensure that Project impacts to paleontological resources would be minimized.

Any substantial excavations in the Project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Any fossils recovered during construction should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

Based on these assumptions, prior to the start of construction, it is recommended that a Paleontologist be retained to review construction plans to ascertain areas that, because of the grading depth, may have to be monitored for paleontological resources. A Paleontological Mitigation Plan (PMP) will be developed from that information. Refer to avoidance and minimization measure PAL-3.

**No-Build Alternative**

The No-Build Alternative would not include any excavation in the study area. Therefore, the No-Build Alternative would not result in any adverse impacts related to paleontological resources.

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

The following avoidance and minimization measures are recommended.

**PAL-1**

Prior to the start of construction, it is recommended that a paleontologist be retained to review construction plans to ascertain areas that, because of the grading depth, may have to be monitored for paleontological resources.

**PAL-2**

Paleontological monitoring shall be conducted by a qualified individual. Based on field reviews and the paleontological literature available, it does not appear that full-time monitoring would be required at all of the proposed excavation sites in the Project study area. It is anticipated that only minor monitoring and spot checks...
would be necessary where soil disturbance occurs below a depth of five feet in native sediments.

**PAL-3**

Before completion of final engineering and in accordance with the guidelines in the Caltrans Standard Environmental Reference, a Paleontological Mitigation Plan shall be prepared by a qualified paleontologist for inclusion in the Plans, Specifications, and Estimate and be implemented during the Project’s excavation phase. The qualified principal paleontologist shall attend pregrading meetings and consult with grading and excavation contractors. The construction contractor’s employees shall attend paleontological resource awareness training session(s) if they will be involved in earth-moving Project activities. The Paleontological Mitigation Plan shall generally discuss fossil discovery, recovery, and subsequent handling.

### 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, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

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

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

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

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

**Affected Environment**

This section was prepared based on the results of the *Limited Phase I Environmental Site Assessment* (ESA) (January 2016). The study was done in conformance with the scope and limitations of American Standards for Testing and Materials (ASTM) Designation E1527-13.

The purpose of the ESA was to assess, to the extent practical, the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum product into structures, soil, and/or groundwater beneath the Project site (i.e., “recognized environmental conditions” or REC).

The ESA included a review of environmental regulatory agency database records; standard historical sources (historical topographic maps and aerial photographs, city directories, Sanborn Maps, and oil and gas well information); the physical setting sources; and other documents.
As part of the ESA evaluation, known electronic database (EDR, GeoTracker) listings were reviewed for possible hazardous waste generating establishments in the vicinity of the site and for adjacent sites or facilities with known environmental concerns.

Aerial photographs of the Project site dating from 1928 to 2012 were reviewed to identify historical land uses and surface conditions. Topographic maps from 1915 to 1974 were also reviewed.

A Project site reconnaissance was performed on January 8, 2016, to physically observe the Project study area and adjoining properties for conditions indicating a potential recognized environmental concern. No environmental concerns such as distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage and/or handling were observed.

**On-Site Land Uses**
Based on the historical documents reviewed (historical topographic maps and aerial photographs, city directories, Sanborn Maps, and oil and gas well information), the land use history of the site includes undeveloped vacant land and/or agricultural usage since at least 1928. A review of aerial photographs indicates that the Project site and vicinity contained orchards and other agricultural uses (row crops) from at least 1928 to 1948. During this time, Avenue R was an unpaved road. Between 1968 and 1979, Avenue R was paved and several other local streets (e.g., Sierra Highway, 10th Street East, 20th Street East) were constructed and paved in their existing configurations. Several buildings—including two schools (Sage Elementary School and Palmdale High School), four local churches, and several residential and commercial buildings—were constructed. In addition, adjoining residential neighborhoods near Sierra Highway and 17th Street East were built.

**Site Conditions**

**Pesticides**
The Project area and/or adjoining properties were used for agricultural purposes until at least 1948. Therefore, there is a potential for persistent pesticides, herbicides, and other agricultural chemicals to be present in soil as a result of historical agricultural use of the area.

**Aerially Deposited Lead**
Aerially Deposited Lead (ADL) refers to lead deposited along highway shoulders from past leaded fuel vehicle emissions. Even though leaded fuel has been prohibited
in California since the 1980s, ADL can still be found along highways that were in use prior to that time. Based on a review of historical sources, a roadway at the location of Avenue R, Sierra Highway, and 10th Street East was present since at least 1915. Therefore, there is likelihood that ADL may be present in the area.

**Lead-Based Paint**

Based on a review of historical sources, the majority of buildings along Avenue R were constructed between 1937 and 1974. Older structures constructed before 1978 may contain lead-based paint (LPB), therefore there is a potential for LBP to be present in the area.

**Asbestos-Containing Materials**

Asbestos, a natural fiber used in the manufacturing of a number of different building materials, has been identified as a human carcinogen. Most friable (i.e., easily broken or crushed) asbestos-containing materials (ACMs) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed nonfriable ACMs (i.e., flooring, roofing, and mastics/sealants) from the market. These materials, however, were not banned completely. Based on a review of historical sources there is a potential for ACM to be present in the area because many buildings were constructed prior to 1978.

**Yellow Thermoplastic Stripes**

Due to the commercial nature of the roadway, yellow thermoplastic striping may be present on street surfaces. This type of striping may contain hazardous levels of lead chromate and markings should be removed and sampled for lead chromate prior to construction.

**Treated Wood Waste**

Treated wood waste (utility poles and signs posts) are located in the Project area. These types of materials may have been treated with preserving chemicals that protect against fungal decay. These types of materials must be disposed of at an appropriately permitted disposal facility or reused in the Project area in a manner consistent with the intended use.

**Database Search Results**

To ascertain reported areas of possible environmental impairment on or in the vicinity of the Project area, 113 federal, State, local, tribal, and proprietary records databases were reviewed.
The ESA reported one hazardous materials release site, located 0.21 mile north of the Project study area at 38206 Sierra Highway, which has not received regulatory agency closure. In 1990, Petro-Lock Inc. had a gasoline leak that resulted in an unspecified contamination. The last reported status of this case was from 1991 as “verification monitoring and pollution characterization.” A note in the file dated 2015 states that this case meets closure criteria; however, the underground storage tank (UST) needs to be removed prior to official closure. Based on the distance of the Petro-Lock Inc. gasoline leak from the Project area and the fact that this case reportedly meets closure criteria, this site is not considered an REC for the Project.

Two spills occurred in the Project area: one in 2007 involving a sewage release at the intersection of East Avenue R and Palm Vista Avenue and second one in 2008 resulting in release of mineral oil and polychlorinated biphenyls (PCBs) at the intersection of East Avenue R and 13th Street East. Although, the release was contained and cleaned, however, there is a likelihood that the spill may also have trickled down thru the cracks and joints of the pavement and may pose a threat while disturbance during construction. Should staining be found it should be handled in accordance with minimization measure HAZ-7.

Seven properties were identified along the Avenue R alignment as using, storing, or disposing of hazardous materials. These properties include the following:

1. Tumbleweed Elementary School located at 1100 East Avenue R-4
2. Palmdalia Apartments located at 38040 11th Street East
3. A historic automobile station located at 915 East Avenue R
4. An unidentified business located at 843 East Avenue R
5. Clark and Howard located at 840 East Avenue R
6. A-1 Rentals and Equipment/Cal Grove Equipment located at 831 East Avenue R
7. Lucky Stores #881 located at 2303 East Avenue R

However, none of them were reported for hazardous materials release, and therefore they are not considered an REC.

One closed leaking underground storage tank (LUST) case was reported for Palmdale High School, located adjacent to Avenue R, and three additional closed LUST cases.
were reported within ¼ mile of Avenue R, and neither of them reached groundwater. Due to their closure status, they are not considered RECs.

**Limitations**

No access to individual properties and/or residences in the Project right-of-way was provided, and the facilities were only inspected from the property boundaries. In addition, no direct contact with property owners was being made as part of the ESA.

**Emergency/Evacuation Routes**

According to the General Plan Wildfire Hazard Zone map (Exhibit S-16), Avenue R is located outside Fire Zone 4 (Brush Area). According to the General Plan, the City operates four emergency shelters/evacuation care sites in the Project area:

- Palmdale School District (General Plan Table S-1)
- Courson Senior Center at 1002 E Avenue Q-12 (General Plan Table S-1)
- Courson Activity Center at 38334 10th Street West (General Plan Table S-1)
- Cultural Center at 704 East Palmdale Boulevard (General Plan Table S-2)

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

Based on the findings of the ESA, there is no evidence of RECs under and/or on the Project site; thus no avoidance, minimization, or mitigation measures are recommended.

Construction of the Project may temporarily affect traffic flow along Avenue R; however, a TMP will be implemented and alternative travel routes will be identified (e.g., Avenue S and Palmdale Boulevard). The Project does not propose improvements adjacent to the emergency shelters. Therefore, implementation of the Project would not impair implementation of the adopted emergency response plan and would not conflict with emergency shelters.

**Use and Transport of Hazardous Materials**

The Project site is located along Avenue R generally between Sierra Highway and 25th Street East. Avenue R is recognized as a Major Arterial by the City of Palmdale General Plan. Major arterials represent the major carrying capacity for traffic to and within the City. As a major designated arterial, Avenue R has the potential to be used to transport hazardous materials; however, the City’s General Plan Existing Designated Truck Route Map does not designate Avenue R as a designated truck
route. Therefore, the Project would not increase the frequency of hazardous materials transport, nor would it directly result in the release of hazardous materials.

There would be no greater risk of an accidental explosion or release of hazardous substances than what exists under current conditions. Therefore, Project impacts related to use and transportation of hazardous materials would not be considered adverse. The Project’s ground-disturbance and demolition activities are not expected to generate hazardous wastes. However, during construction, some standard chemicals and hazardous materials may be used. All activities would be conducted in compliance with applicable regulations pertaining to the handling, transport, and disposal of hazardous materials. No avoidance, minimization, or mitigation measures are recommended.

**Pesticides**

Because agricultural production occurred on site many years ago, there is a potential for persistent pesticides, herbicides, and other agricultural chemicals to be present in the soil as a result of historical agricultural use of the area. Prior to ground disturbance activities, soil samples shall be conducted for the potential presence of persistent pesticides. Refer to avoidance and minimization measure HAZ-1.

**Aerially Deposited Lead**

ADL may be present in the soils. Therefore, it is recommended that the soils to be impacted be assessed for the presence of ADL prior to disposal. ADL concerns need to be investigated in subsequent stages of the Project by collecting soil samples and performing laboratory analysis. A Lead Compliance Plan may be required to be prepared prior to the start of construction activities. Refer to avoidance and minimization measure HAZ-2.

**Lead Based Paint**

Approximately eight buildings will be demolished as part of the Project. The structures to be demolished may contain lead based paint (LPB). Therefore, the Project will be required to perform an LBP survey prior to demolition. Refer to avoidance and minimization measure HAZ-3.

**Asbestos-Containing Materials**

The buildings to be demolished may contain ACM and thus, the Project will be required to perform ACM survey prior to demolition of these structures. Refer to avoidance and minimization measure HAZ-4.
Yellow Thermoplastic Stripes

The Project has the potential to remove yellow thermoplastic stripes from the street surfaces. As such there is a likelihood of exposure of construction workers and inspectors to lead and chromium. Therefore, sampling and laboratory testing are required for proper handling and disposal of yellow thermoplastic stripes and paints. Refer to avoidance and minimization measure HAZ-5.

Treated Wood Waste

Treated Wood Waste was observed during the survey, and the ESA recommended that it is disposed of appropriately at a permitted disposal facility. Refer to avoidance and minimization measure HAZ-6.

No-Build Alternative

Under the No-Build Alternative, there would be no impacts associated with hazardous wastes and materials.

Avoidance, Minimization, and/or Mitigation Measures

The City of Palmdale and/or its consultant will be responsible for preparing, developing, and implementing the avoidance, minimization, and/or mitigation measures. Standard condition HAZ-1 will ensure that the Build Alternative (Preferred Alternative) will be in compliance with all local and federal regulations as they relate to hazardous waste/materials:

**Standard Condition**

HAZ-1 Prior to ground disturbance activities, soil samples shall be conducted for the potential presence of persistent pesticides. The samples should be analyzed for organochlorine pesticides (OCPs) using US EPA Method 8081.

Avoidance, Minimization, and/or Mitigation Measures

HAZ-2 Prior to ground disturbance activities, soil shall be assessed for the presence of aerially deposited lead (ADL) prior to disposal. A Lead Compliance Plan should be prepared prior to the start of construction activities.

HAZ-3 Prior to demolition of the buildings structures, a lead-based paint (LBP) survey will be required to be conducted.

HAZ-4 Prior to demolition of the building structures, an asbestos-containing materials (ACMs) survey will be required.
HAZ-5  If yellow traffic markings are removed separately from the adjacent pavement, the markings should be removed and sampled for lead chromate prior to construction, consistent with Caltrans’ SSP 14-11.12. If the paint is nonhazardous, then SSP 36-4 should be followed.

HAZ-6  If, during Project construction, treated wood waste is found on the site and is not reused in the Project area in a manner consistent with the intended use for the preservative, it must be disposed of as a hazardous waste at an appropriately permitted disposal facility.

HAZ-7  If, during Project construction, signs of discolored soils is found on site and in the Project area, a certified consultant should conduct a polychlorinated biphenyls (PCBs) survey. Discolored soils should be considered a potential PCB hazards unless tested and should be handled accordingly.

2.2.5  Air Quality

Regulatory Setting
The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. 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 state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (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 lead (PB) and state standards exist for visibility reducing particles, 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 (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.
Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel “Conformity” requirement under the FCAA also applies.

**Conformity**
The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation (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 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. U.S. EPA regulations at 40 Code of Federal Regulations (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 carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM₂.₅), and in some areas (although not in California) sulfur dioxide (SO₂). California has attainment or maintenance areas for all of these transportation-related “criteria pollutants” except SO₂ and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (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 TIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (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 FCAA.
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 are the same as described in the RTP and FTIP, then the project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a “hot-spot” analysis if an area is “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter (PM$_{10}$ or PM$_{2.5}$). A region is “nonattainment” if one or more of the monitoring stations in the region measures a violation of the relevant standard and the U.S. 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 U.S. EPA and are then called “maintenance” areas. “Hot-spot” analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for 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 particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

**Affected Environment**

The Project site is located in the Mojave Desert Air Basin (MDAB) portion of the Antelope Valley Air Quality Management District (AVAQMD), which includes the desert portions of Los Angeles and San Bernardino Counties, the eastern desert portion of Kern County, and the northeastern desert portion of Riverside County. The MDAB primarily contains pollutants from other air basins, dust raised by construction, travel on unpaved roads, and paved roads with silty debris. The MDAB consists of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains throughout the MDAB rise from 1,000 to 4,000 feet above the valley floor. Additionally, air masses are pushed onshore in southern California by differential heating and are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California Valley regions by mountains. The Antelope Valley is bordered to the northwest by the Tehachapi Mountains, separated from the Sierra Nevada Mountains to the north by the Tehachapi Pass, and bordered to the south by the San Gabriel Mountains.
Chapter 2 • Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Climate and Meteorology
The climate around the Project site, as with all of southern California, is controlled largely by the strength and position of the subtropical high pressure cell over the Pacific Ocean. The climate is characterized by moderate temperatures and comfortable humidity.

During the summer, a Pacific Subtropical High cell that is located off the coast inhibits cloud formation and encourages daytime solar heating in the MDAB. Desert moisture primarily arrives from infrequent warm, moist, and unstable air masses from the south. An uplifting of wind masses occurs where warm moist air from Pacific Ocean storms is lifted upward by the San Gabriel Mountains and Sierra Palona Mountains. This uplifting creates heavier precipitation in the Los Angeles Basin and less precipitation with greater temperature variation throughout the year in the MDAB.

According to the Western Regional Climate Center’s website for Palmdale, California Station Number 046624, the prevailing winds in the Project study area, as measured at Palmdale Airport, are from the west and southwest with an annual average wind speed of 10.1 miles per hour. The average annual maximum temperature is 77.2 degrees Fahrenheit (°F) with a range from 58.5°F in January to 97.6°F in July. The average annual minimum temperature is 47.2°F with a range from 32.4°F in January to 65.3°F in July. According to the Western Regional Climate Center’s Period of Record Monthly Climate Summary, average annual precipitation (i.e., all rain and no snow) is 7.61 inches.

Attainment Status
Regional air quality is defined by whether the area has attained or not attained State and federal standards, as determined by monitoring. Areas that are in nonattainment are required to prepare plans and implement measures that will bring the region into attainment. When an area has been reclassified from nonattainment to attainment for a federal standard, the status is identified as “maintenance,” and there must be a plan and measures established that will keep the region in attainment for the following ten years. Table 19 below lists the current attainment designations for the MDAB.

The USEPA designates an area as “Unclassified” if, based on available information, it cannot be classified as either meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant. For the California Air Resources Board (CARB), an “Unclassified” designation indicates that the
air quality data for the area are incomplete and do not support a designation of attainment or nonattainment. As noted in Table 19, many of the criteria pollutants have been designated as Unclassified: PM10, PM2.5, SO2, lead, Particulate Sulfate, Hydrogen Sulfide, and visibility reducing particles.

Table 19 also shows that the USEPA has designated the AVAQMD portion of MDAB as being in Severe-15 Nonattainment for ambient O3 concentrations. Pursuant to the approved 2008 Federal Ozone Attainment Plan and given the Severe-15 Nonattainment designation, the AVAQMD has 15 years from the 2004 plan approval (i.e., year 2019) to achieve attainment. To be designated as an Attainment area by the State, the AVAQMD portion of the MDAB will need to achieve both the one-hour and eight-hour O3 standards.

In 2007, the USEPA revoked the annual PM10 standard as research had indicated that there were no considerable health effects associated with long-term exposure to PM10. With this change, the basin is technically in attainment of the federal PM10 standards, although the re-designation process has not yet begun. The USEPA has designated the AVAQMD portion of the MDAB as being an Unclassified area for PM10. The State has designated the AVAQMD portion of the MDAB as being in nonattainment for the State PM10 standard.

### Table 19  State And Federal Criteria Air Pollutant Standards, Effects, and Sources

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<tbody>
<tr>
<td>Ozone (O3)</td>
<td>1 hour</td>
<td>0.09 ppm⁴</td>
<td>--- ⁴</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 toxic air contaminants. Biogenic VOC may also contribute.</td>
<td>Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) 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</td>
<td>No Standard (O3 1 hour)</td>
</tr>
<tr>
<td></td>
<td>8 hours</td>
<td>0.070 ppm</td>
<td>0.070 ppm (4th highest in 3 years)</td>
<td></td>
<td></td>
<td></td>
<td>Nonattainment; Severe-15 (O3 8 hours)</td>
</tr>
</tbody>
</table>
### Table 19  State And Federal Criteria Air Pollutant Standards, Effects, and Sources

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<tbody>
<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 ozone. Colorless, odorless.</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>Unclassified/Attainment</td>
</tr>
<tr>
<td></td>
<td>8 hours</td>
<td>9.0 ppm</td>
<td>9 ppm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Lake Tahoe)</td>
<td>6 ppm</td>
<td>--</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Respirable Particulate Matter (PM_{10})</td>
<td>24 hours</td>
<td>50 μg/m³</td>
<td>150 μg/m³</td>
<td>Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic &amp; other aerosol and solid compounds are part of PM_{10}.</td>
<td>Dust- and fume-producing industrial and agricultural operations; combustion smoke &amp; 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/m³</td>
<td>--</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Fine Particulate Matter (PM_{2.5})</td>
<td>24 hours</td>
<td>---</td>
<td>35 μg/m³</td>
<td>Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the PM_{2.5} size range. Many toxic &amp; other aerosol and solid compounds are part of PM_{2.5}.</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>Unclassified/Attainment</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>12 μg/m³</td>
<td>12.0 μg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 hours</td>
<td>---</td>
<td>65 μg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(conformity process)</td>
<td>---</td>
<td>15 μg/m³</td>
<td>(98 percentile over 3 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary Standard (annual; also for conformity process)</td>
<td>---</td>
<td>---</td>
<td>15 μg/m³</td>
<td>(98 percentile over 3 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO\textsubscript{2})</td>
<td>1 hour</td>
<td>0.18 ppm</td>
<td>0.100 ppm\textsuperscript{vi}</td>
<td>Imitating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain &amp; nitrate contamination of stormwater. Part of the &quot;NOx&quot; group of ozone precursors.</td>
<td>Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.</td>
<td>Attainment</td>
<td>Unclassified/Attainment</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>0.030 ppm</td>
<td>0.053 ppm</td>
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</tbody>
</table>
## Table 19  State And Federal Criteria Air Pollutant Standards, Effects, and Sources

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</thead>
<tbody>
<tr>
<td>Sulfur Dioxide (SO₂)</td>
<td>1 hour</td>
<td>0.25 ppm</td>
<td>0.075 ppm&lt;sup&gt;xix&lt;/sup&gt; (99&lt;sup&gt;th&lt;/sup&gt; percentile over 3 years)</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>Unclassified</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.5 ppm&lt;sup&gt;x&lt;/sup&gt;</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>3 hours</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>24 hours</td>
<td>0.04 ppm</td>
<td>0.14 ppm&lt;sup&gt;x&lt;/sup&gt; (for certain areas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>---</td>
<td>0.030 ppm&lt;sup&gt;x&lt;/sup&gt; (for certain areas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead (Pb)&lt;sup&gt;xv&lt;/sup&gt;</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 toxic air contaminant and water pollutant.</td>
<td>Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.</td>
<td>Unclassified/ Attainment</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Calendar Quarter</td>
<td>---</td>
<td>1.5 μg/m³&lt;sup&gt;x&lt;/sup&gt; (for certain areas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rolling 3- month average</td>
<td>---</td>
<td>0.15 μg/m³&lt;sup&gt;xvi&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfate</td>
<td>24 hours</td>
<td>25 μg/m³</td>
<td>---</td>
<td>Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.</td>
<td>Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.</td>
<td>Unclassified</td>
<td>N/A</td>
</tr>
<tr>
<td>Hydrogen Sulfide (H₂S)</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 like volcanic areas and hot springs.</td>
<td>Unclassified</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Table 19  State And Federal Criteria Air Pollutant Standards, Effects, and Sources

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>State(^i) Standard</th>
<th>Federal(^ii) Standard</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>Visibility Reducing Particles</td>
<td>8 hours</td>
<td>Visibility of 10 miles or more (Tahoe: 30 miles) 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 Clean Air Act, 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 particulate matter above. May be related more to aerosols than to solid particles.</td>
<td>Unclassified</td>
<td>N/A</td>
</tr>
<tr>
<td>Vinyl Chloride11</td>
<td>24 hours</td>
<td>0.01 ppm</td>
<td>---</td>
<td>Neurological effects, liver damage, cancer.</td>
<td>Vinyl Chloride11</td>
<td>24 hours</td>
<td>0.01 ppm</td>
</tr>
</tbody>
</table>

Adapted from Sonoma-Marin Narrows Draft EIR and California ARB Air Quality Standards chart [link](http://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

**Greenhouse Gases and Climate Change:** Greenhouse gases do not have concentration standards for that purpose. Conformity requirements do not apply to greenhouse gases.

\(^i\) State standards are “not to exceed” or “not to be equaled or exceeded” unless stated otherwise.

\(^ii\) Federal standards are “not to exceed more than once a year” or as described above.

\(^iii\) ppm = parts per million

\(^iv\) Prior to 6/2005, the 1-hour ozone NAAQS was 0.12 ppm. Emission budgets for 1-hour ozone are still in use in some areas where 8-hour ozone emission budgets have not been developed, such as the S.F. Bay Area.

\(^v\) Annual PM\(_{10}\) NAAQS revoked October 2006; was 50 μg/m\(^3\). 24-hr. PM\(_{2.5}\) NAAQS tightened October 2006; was 65 μg/m\(^3\). Annual PM\(_{2.5}\) NAAQS tightened from 15 μg/m\(^3\) to 12 μg/m\(^3\) December 2012 and secondary annual standard set at 15 μg/m\(^3\).

\(^vi\) μg/m\(^3\) = micrograms per cubic meter

\(^vii\) The 65 μg/m\(^3\) PM\(_{2.5}\) (24-hr) NAAQS was not revoked when the 35 μg/m\(^3\) NAAQS was promulgated in 2006. The 15 μg/m\(^3\) annual PM\(_{2.5}\) standard was not revoked when the 12 μg/m\(^3\) standard was promulgated in 2012. The 0.08 ppm 1997 ozone standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (7/20/2013). 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 a 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 vs. no build, build vs. baseline, or compliance with prior emission budgets for the same pollutant.

\(^viii\) Final 1-hour NO\(_2\) NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. 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 vs. no build, build vs. baseline, or compliance with prior emission budgets for the same pollutant.

\(^ix\) 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 9/2012.

\(^x\) Secondary standard, set to protect public welfare rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.

\(^xi\) The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM\(_{10}\) and, in larger proportion, PM\(_{2.5}\). Both the ARB and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and PM\(_{2.5}\) as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, 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.

\(^xii\) Lead NAAQS are not considered in Transportation Conformity analysis.
Air Quality Attainment and State Implementation Plans
The AVAQMD’s current air quality planning documentation, pursuant to SIP and California Clean Air Act (CCAA) requirements applicable at the Project site, includes the following separate documents: the AVAQMD 2004 Ozone Attainment Plan (State and Federal); the AVAQMD List and Implementation Schedule for District Measures to Reduce PM Pursuant to Health & Safety Code §39614(d); the 8-Hour Reasonably Available Control Technology – State Implementation Plan Analysis; the 2014 8-Hour Reasonably Available Control Technology RACT State Implementation Plan (SIP) Analysis – Supplemental Analysis; and the AVAQMD Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area). The AVAQMD adopted the 2004 Ozone Plan in response to the designation of the western portions of the MDAB, including the Antelope Valley, as in nonattainment areas for the ozone NAAQS and California Ambient Air Quality Standards (CAAQS) and in accordance with the FCAA requirement to prepare plans demonstrating attainment. The overall control strategy for the 2004 Ozone Plan is to implement all federal Reasonable Available Control Technology (RACT) rules to reduce ozone precursors in the Antelope Valley. The Antelope Valley has not yet demonstrated attainment status for ozone, largely due to the transport of pollutants from the Los Angeles Basin and San Joaquin Valley.

Sensitive Receptors
According to the 2011 Antelope Valley AQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines, residences, schools, daycare centers, playgrounds and medical facilities are considered sensitive receptor land uses. Single-family residences and apartments are located on both sides of the Project alignment between Sierra Highway and 25th Street East. Other sensitive receptors, including three schools, are located between 17th Street East and 25th Street East (See Figure 2-13).

Valley Fever
This analysis also addresses the impacts of the San Joaquin Fever (Coccidioidomycosis), or “Valley Fever,” which is not a criteria air pollutant, but a disease that can result from inhalation of airborne particulates when they carry fungal spores of the disease. As defined by the Los Angeles County Department of Public Health (LACDPH), San Joaquin Fever is the common name for a fungal disease caused by inhalation of Coccidioides immitis spores that are carried in dust. According to the California Department of Health Services (CDHS), it is found in parts of the southwestern United States, Mexico, and South and Central America,
where soil and climactic conditions are conducive to the presence of the Valley Fever fungus.

According to the California Department of Public Health (CDPH), the fungus can become airborne when soil that contains *C. immitis* spores is disturbed, either by natural or man-made means, including wind, natural disaster (earthquakes, fires, landslides), farming, and grading. Valley Fever is diagnosed by an antibody blood test or culture and is treatable with a variety of oral and injectable anti-fungal agents. The majority of people (approximately 60 percent) exposed to Valley Fever spores develop no symptoms. If symptoms develop, individuals generally develop a mild respiratory illness with flu-like symptoms that can last about a month. A small proportion of infected individuals develop more severe symptoms that spread outside the lungs to the bone, brain, and/or skin; this is known as “disseminated Valley Fever”.

According to the CDHS, at highest risk for exposure to Valley Fever are farmers, construction workers, military personnel, archaeologists, and others who are likely to engage in activities that actively disturb soils in areas where Valley Fever may be present. The LACDPH states that persons at the highest risk of developing disseminated Valley Fever include the very young (under 1 years old); adults over 60 years; immunocompromised individuals; people with diabetes; women in the third trimester of pregnancy; and certain ethnic groups, including African-Americans and Filipinos. Generally, once an individual contracts Valley Fever, this individual will likely gain immunity to further Valley Fever contraction.

The LACDPH maintains an inventory of reported cases of notifiable diseases in Los Angeles County as a whole. From 2008 to 2013, reported cases of Valley Fever averaged 4.4 percent of all notifiable diseases reported within the County. The LACDPH emphasizes dust control in endemic areas as the primary means of prevention.
Environmental Consequences

Build Alternative (Preferred Alternative)

Conformity

The Project is exempt from conformity because the Project is a safety improvement Project, as described in Table 2 of 40 CFR 93.126. The Project would increase safety and mobility by completing sidewalk gaps and providing ladder-style crosswalks and bus turnouts to provide enhanced access to public transit. It would also provide a Class II Bike Lane along the Project segment.

California Environmental Quality Act Air Quality Analysis

Build Alternative (Preferred Alternative)

Conflict with or Obstruct Implementation of the Applicable Air Quality Plan

The AVAQMD’s current air quality plans, pursuant to the SIP and CCAA requirements, that are applicable to the Project site are the AVAQMD 2004 Ozone Attainment Plan (State and Federal) and the AVAQMD Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area).

As stated in the AVAQMD’s 2011 CEQA and Federal Conformity Guidelines, “A project is deemed to not exceed this threshold, and hence not be significant, if it is consistent with the existing land use plan.” The Project would not change land use patterns or long-range development plans because it is a safety improvement Project, as discussed in Section 2.1.1.1, Existing and Future Land Uses. The Project would not generate traffic. Thus, the Project would remain consistent with the land use designation for the site, as contained in the Palmdale General Plan. There would be no impact.

Violate Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation

Long-Term (Operational) Impacts. The Project would not increase capacity, would not generate traffic, and would result in negligible changes in traffic volumes and speeds. There would be no change or only a negligible change in pollutant emissions and no potential for exceedance of AVAQMD quantitative CEQA significance thresholds. The long-term impact to regional emissions would be less than significant.
Short-Term Construction Impacts. Criteria pollutant emissions would occur from operation of construction equipment; generation of fugitive dust from grading and earth-moving activities; import of construction materials; and operation of vehicles driven to and from the site by construction workers. Construction emissions were calculated with the Road Construction Emissions Model, version 7.1.5.1. The Road Construction Emissions Model was developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) for calculating emissions from linear construction projects. Table 20 includes the results of the calculations for the estimated peak daily construction emissions for each construction activity. As shown, there would be no exceedance of AVAQMD daily significant emissions thresholds. Impacts would be less than significant and no mitigation is required.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Emissions (lbs/day)</th>
<th>VOC</th>
<th>NOx</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grubbing/Land Clearing</td>
<td></td>
<td>3</td>
<td>20</td>
<td>17</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Grading/Excavation</td>
<td></td>
<td>9</td>
<td>90</td>
<td>55</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Drainage/Utilities/Sub-Grade</td>
<td></td>
<td>6</td>
<td>48</td>
<td>34</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Paving</td>
<td></td>
<td>3</td>
<td>24</td>
<td>20</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Maximum (pounds/day)</strong></td>
<td></td>
<td>9</td>
<td>90</td>
<td>55</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td><strong>AVAQMD Daily Thresholds</strong></td>
<td></td>
<td>137</td>
<td>137</td>
<td>548</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

Exceeds AVAQMD Thresholds? No No No No No

| lbs/day: pounds per day; VOC: volatile organic compound; NOx: nitrogen oxides; CO: carbon monoxide; PM10: respirable particulate matter with a diameter of 10 microns or less; PM2.5: fine particulate matter with a diameter of 2.5 microns or less; AVAQMD: Antelope Valley Air Quality Management District.

Sources: Antelope Valley AQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines 2011 (thresholds). Emissions calculations can be found in Appendix E.
combination of the short range (distance) of particulate dispersion (especially when compared to gaseous pollutants) and (2) the AVAQMD’s required dust control measures, which further limit particulate dispersion from a Project site. There are no identified projects within ¼ mile of the Project site that would occur concurrently with the Project. Therefore, cumulative PM10 and PM2.5 impacts would be less than significant.

As shown in Table 20, maximum daily emissions of O₃ precursors volatile organic compounds (VOC) and nitrogen oxides (NOx) would be less than AVAQMD significance thresholds for all construction activities. VOC and NOx emissions of regional cumulative projects that would occur concurrently with the Project are not known. However, because the Project would between 10 – 15 months, it is concluded that the VOC and NOx emissions would not be cumulatively considerable, and therefore cumulative O₃ impacts would be less than significant.

**Expose Sensitive Receptors to Substantial Pollutant Concentrations**

Several sensitive receptors are located within the Project alignment and in the general Project vicinity. All construction activities will be conducted in compliance with all applicable AVAQMD rules and regulations, which would minimize potential exposure of these receptors to airborne pollutants. These rules and regulations include but are not limited to the following:

- Rule 403, Fugitive Dust, for controlling fugitive dust and avoiding nuisance. This rule requires measures such as watering for the purpose of dust control and control of track-out from the site.

- Rule 402, Nuisance, which states that a project shall not “discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.”

Therefore, the Project is not expected to expose sensitive receptors to substantial pollutant concentrations during construction.
As described above, the Project would result in negligible changes in traffic volumes and speeds. Thus, the Project would not increase traffic congestion and there would be a negligible change or no change to local concentrations of CO and other pollutants. There would be no long-term exposure of sensitive receptors to substantial pollutant concentrations and no potential for exceedance of federal or State ambient air quality thresholds.

**Mobile Source Air Toxics**

The FHWA states in its 2012 Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents that projects exempt under the Clean Air Act conformity rule under 40 CFR 93.126, which is the case for the Project, have no meaningful potential for mobile source air toxics impacts.

The purpose of this Project is to provide a safer corridor along Avenue R for local students by constructing bike lanes, a left-turn lane, and ADA-compliant continuous pavement and ramps at all intersections. This Project has been determined to generate minimal air quality impacts for Clean Air Act Amendment (CAAA) criteria pollutants and has not been linked with any special Mobile Source Air Toxic (MSAT) concerns. As such, this Project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the No-Build Alternative.

Moreover, USEPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with USEPA’s MOBILE6.2 model forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSAT from 1999 to 2050 while vehicle-miles of travel are projected to increase by 145 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this Project.

**Valley Fever**

The greatest potential risk for Valley Fever exposure is during construction, particularly to workers on site, where construction-related activities may cause Valley Fever spores to be released from dormancy. Valley Fever fungal spores may be released through natural wind or ground-disturbing activities on undeveloped land. Valley Fever has been a concern in the Antelope Valley for many years. Although not a criteria air pollutant, Valley Fever fungal spore infections develop through inhalation of airborne fungal spores contained in windblown dust, and is recognized to be endemic in areas with dry, alkaline soil conditions. The Project’s construction
would involve short-term bulk storage of soils, earth moving, construction and
demolition, and man-made conditions that can cause fugitive dust emissions. Grading
or other soil-disturbing activities have been known to release the spores into the air,
thereby increasing the risk that nearby people could inhale the spores. Construction
workers are at a higher risk of contracting Valley Fever, due to construction-related
activities that disturb the soil on site.

All construction activity for the Project would be conducted under a Dust Control
Plan prepared in accordance with the AVAQMD’s Rule 403 (see standard condition
AIR-1). Examples of AVAQMD Rule 403 regulations include using chemical
stabilizers; pre-watering the construction site; ensuring there is no visible dust outside
the property line; using wind barriers, fences or tarps; limiting soil, sand, and gravel
track-out to within 25 feet of the active operation; establishing vegetative ground
cover within 30 days after construction has finished; and restricting periods of active
construction. This standard condition requires that Project construction activities be
conducted in compliance with all dust suppression measures as set forth in the Dust
Control Plan.

Compliance with the standard condition would ensure that potential impacts
associated with on-site construction workers’ exposure to Valley Fever would be less
than significant and no mitigation is required. Although the AVAQMD’s Rule 403
sets rigorous regulations to minimize fugitive dust and airborne hazards, due to the
potential hazards associated with exposure to Valley Fever spores and in order to
provide accurate and up-to-date information about health protection measures for on-
site workers, avoidance and minimization measure AIR-2 would be incorporated into
the Project.

The Project would not expose sensitive receptors to Valley Fever in the long term
because the Project proposes to pave additional areas along the Avenue R alignment
for the purpose of bike lane construction and sidewalks; thus, there would be fewer
opportunities for on-site soils to produce airborne dust.

*Naturally Occurring Asbestos*

Asbestos occurs naturally in ultramafic rock (which includes serpentine). When this
material is disturbed in connection with construction, grading, quarrying, or surface
mining operations, asbestos-containing dust can be generated. Exposure to asbestos
can result in health ailments such as lung cancer, mesothelioma (cancer of the linings
of the lungs and abdomen), and asbestosis (scarring of lung tissues, which results in
constricted breathing). The California Department of Conservation (2000) prepared a
map showing areas more likely to contain naturally occurring asbestos (NOA) in California. The map shows no NOA areas in Los Angeles County. Therefore, the Project site is not in an area likely to contain NOA.

**Create Objectionable Odors Affecting a Substantial Number of People**

The Project would not develop or place sensitive receptors near major odor sources such as landfills, wastewater treatment plants, or dairies. There would be no change in long-term odor exposure.

Project construction equipment and activities would generate odors. Potential odors include diesel exhaust emissions and paving operations. There may be situations where construction activity odors would be noticeable by persons nearby, but these odors would not be unfamiliar or necessarily objectionable. Any odors would be temporary and would dissipate rapidly from the source with an increase in distance, and would not be expected to be objectionable to a substantial number of people. Therefore, the impacts would be less than significant and no mitigation is required.

After completion of the road improvements, there would be no potential for increased odors, compared to existing conditions, attributable to the Project.

**No-Build Alternative**

Because no improvements would be constructed, there would be no construction-related air quality impacts.

**Climate Change**

Climate change is analyzed at the end of this chapter. Neither the USEPA nor the FHWA has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. As stated on FHWA’s climate change website, climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will aid decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.
Because there have been more requirements set forth in California legislation and executive orders on climate change, the issue is addressed in a separate California Environmental Quality Act (CEQA) discussion at the end of this chapter. The four strategies set forth by the 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 travelled.

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

Standard condition AIR-1 will ensure that the Build Alternative (Preferred Alternative) will be in compliance with all local and federal regulations as they relate to air quality.

**AIR-1**

All construction activities will be conducted in compliance with the Antelope Valley Air Quality Management District’s Rule 403, Fugitive Dust.

The following avoidance and minimization measures are recommended to further reduce health-related potential air quality impacts.

**AIR-2**

The following administrative controls and hazard awareness actions will be included in the Contractor’s Specifications:

- Prior to Project construction initiation, and for any personnel additions after Project construction initiation, the City’s contractor shall be informed of the following California Department of Public Health (CDPH) materials on Valley Fever, or any updated materials as applicable. The following materials will be distributed to worksite supervisors:
  
• Prior to Project construction initiation, and for any personnel additions after Project construction initiation, the City’s contractor shall be informed of the following CDPH materials on Valley Fever, as well as any updated materials as applicable. The following materials will be distributed to construction workers:


2.2.6 Noise

Regulatory Setting
The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (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.

California Environmental Quality Act
CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The CEQA noise analysis is included at the end of this section.

National Environmental Policy Act and 23 CFR 772
For highway transportation projects with FHWA (and the Department, 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 dBA) is lower than the NAC for commercial areas (72 dBA). Table 21 lists the noise abatement criteria for use in the NEPA 23 CFR 772 analysis. Table 22 lists Typical A-Weighted Noise Levels.

### Table 21 Activity Category and Noise Abatement Criteria

<table>
<thead>
<tr>
<th>Activity Category</th>
<th>NAC, Hourly A-Weighted Noise Level, dBA $L_{eq}(h)$</th>
<th>Description of Activities</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, day care 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>
<tr>
<td>D</td>
<td>52 (Interior)</td>
<td>Auditoriums, day care 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 (water resources, water treatment, electrical, etc.), 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.
Table 22  Typical A-Weighted Noise Levels

<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),</td>
<td>90</td>
<td>Food Blender at 1 m (3 ft)</td>
</tr>
<tr>
<td>at 80 km (50 mph)</td>
<td></td>
<td>Garbage Disposal at 1 m</td>
</tr>
<tr>
<td>Noisy Urban Area, Daytime</td>
<td>80</td>
<td>(3 ft)</td>
</tr>
<tr>
<td>Gas Lawn Mower, 30 m (100 ft)</td>
<td>70</td>
<td>Vacuum Cleaner at 3 m</td>
</tr>
<tr>
<td>Commercial Area</td>
<td></td>
<td>(10 ft)</td>
</tr>
<tr>
<td>Heavy Traffic at 90 m (300 ft)</td>
<td>60</td>
<td>Normal Speech at 1 m</td>
</tr>
<tr>
<td>Quiet Urban Daytime</td>
<td>50</td>
<td>Large Business Office</td>
</tr>
<tr>
<td>Quiet Urban Nighttime</td>
<td>40</td>
<td>Dishwasher Next Room</td>
</tr>
<tr>
<td>Quiet Suburban Nighttime</td>
<td>40</td>
<td>Theater, Large Conference</td>
</tr>
<tr>
<td>Quiet Rural Nighttime</td>
<td>30</td>
<td>Room (Background)</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Library</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Bedroom at Night</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Concert Hall (Background)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Broadcast/Recording Studio</td>
</tr>
<tr>
<td>Lowest Threshold of Human Hearing</td>
<td>10</td>
<td>Lowest Threshold of Human</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hearing</td>
</tr>
</tbody>
</table>

According to the Department’s *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. This document discusses noise abatement measures that would likely be incorporated in the Project.
The Department’s Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 7 dBA reduction (for projects using the 2011 Noise Protocol) 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.

**City of Palmdale**
The City of Palmdale Municipal Code (specifically Chapter 8.28 Building Construction Hours and Operation and Noise Control, Section 8.28.30) contains provisions that restrict construction between the hours of 8:00 PM and 6:30 AM in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park. Section 8.28.40 allows exceptions to the prescribed hours “pursuant to the express written permission of the City Engineer . . . if he finds that: (A). The work proposed to be done is affected with public interest”.

**Affected Environment**
**Surrounding and Noise-Sensitive Land Uses**
The Project site is located along more than a two-mile-long segment of Avenue R, a major east-west arterial between Sierra Highway and 25th Street East in the City of Palmdale.

Noise-sensitive locations include areas where an excessive amount of noise would interfere with normal operations or activities and where a high degree of noise control may be necessary. Examples include schools, hospitals, and residential areas. Recreational areas may be considered noise-sensitive where quiet and solitude may be an important aspect of the specific recreational experience. Commercial land uses are generally not considered noise-sensitive. Single-family residences and apartments are located on both sides of the Project boundary between Sierra Highway and 25th Street East. Other noise-sensitive receptors (including three schools and four churches) are situated between 17th Street East and 25th Street East (See Figure 2-13, Noise Monitoring Locations).
Noise Sources
The primary on-site noise source is roadway traffic noise on Avenue R and its cross streets. The speed limit is generally 45 to 50 mph in residential and commercial areas along Avenue R. In the school areas, the speed limit reduces to 20 mph. Off-site noise sources include occasional aircraft overflights and typical residential noise (e.g., air conditioners and barking dogs, apartment roof maintenance).

Existing Noise Levels
A noise survey was conducted at the Project site on December 2, 2015. Noise level measurements were taken using a Larson Davis Laboratories Model 831 integrating sound level meter (LD 831). The LD 831 sound level meter and microphone were mounted on a tripod, approximately five feet above the ground and equipped with a windscreen during all measurements. The LD 831 was calibrated before and after use with a Larson Davis Model CAL200 acoustical calibrator to ensure that the measurements would be accurate. The sound level meter was programmed to record noise levels in “slow” mode in A-weighted form. Meteorological conditions during all measurement periods were favorable, with clear skies; the temperature was approximately 32°F to 47°F. There was little or no wind for most of the measurement period. Noise level measurements were collected at six locations, as described and summarized in Table 23. Noise survey locations are shown on Figure 2-13. The complete noise monitoring results are included in Appendix F.

As shown in Table 23, the average noise levels (Leq) ranged from 56 to 70 A-weighted decibels (dBA), which represented typical noise levels measured adjacent to a roadway in urban environment. Monitoring Site No. 1 was measured inside the apartment complex, and traffic noise was partially blocked by surrounding apartment buildings. Monitoring Site Nos. 2 and 3 were measured in the front yards of the residential properties. Due to immediate proximities to the roadway, the measurements were dominated by high traffic noise. Monitoring Site Nos. 4, 5, and 6 were measured further from the roadway, and measured noise levels all had an equivalent noise level (Leq) in the high 50s dBA.
Table 23 Summary of Existing Short-Term Noise Level Measurements

<table>
<thead>
<tr>
<th>Measurement Number*</th>
<th>Location</th>
<th>Start Time (Duration)</th>
<th>Noise Levels (dBA)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>L&lt;sub&gt;eq&lt;/sub&gt;</td>
<td>L&lt;sub&gt;max&lt;/sub&gt;</td>
</tr>
<tr>
<td>1</td>
<td>Near the swimming pool inside the Palmdalia Apartments</td>
<td>10:11 AM (20 minutes)</td>
<td>58</td>
<td>63</td>
</tr>
<tr>
<td>2</td>
<td>Front yard of first row residence at 1116 E Ave R</td>
<td>9:47 AM (20 minutes)</td>
<td>66</td>
<td>77</td>
</tr>
<tr>
<td>3</td>
<td>Front yard of a first row residence at 1510 E Ave R</td>
<td>9:12 AM (20 minutes)</td>
<td>70</td>
<td>81</td>
</tr>
<tr>
<td>4</td>
<td>Exterior hallway of the Horizon Community Church</td>
<td>8:42 AM (20 minutes)</td>
<td>58</td>
<td>70</td>
</tr>
<tr>
<td>5</td>
<td>Lawn area next to a Palmdale High School building</td>
<td>8:09 AM (20 minutes)</td>
<td>56</td>
<td>70</td>
</tr>
<tr>
<td>6</td>
<td>Near the swimming pool inside the Living Praise Early Learning Academy</td>
<td>7:36 AM (20 minutes)</td>
<td>59</td>
<td>69</td>
</tr>
</tbody>
</table>

dBA: A-weighted decibels; L<sub>eq</sub>: equivalent noise level; L<sub>max</sub>: maximum noise level; L<sub>min</sub>: minimum noise level; N/A: not applicable.
* See Figure 2-13 for measurement locations.

For typical urban and suburban roads that have morning and evening peak traffic, the Community Noise Equivalent Level (CNEL) is estimated at approximately 2 dBA higher than the average daytime hourly noise level. Therefore, the existing noise levels at noise-sensitive areas based on measurements at Monitoring Site Nos. 5 and 6 are estimated between 58 and 61 dBA CNEL. Noise levels reduce with further distance away from Avenue R.

The purpose of measurements at Monitoring Site Nos. 2 and 3 is to provide traffic noise data. Noise levels were measured at approximately 30 feet away from the nearest travel lane on Avenue R in residential front yards. These residences use backyards as frequent human use areas and the front yards abutting the roadway were not considered as frequent exterior use area in this situation.
Environmental Consequences

Build Alternative (Preferred Alternative)

The purpose of the Project is to increase walking and biking along the street and to increase safety and mobility by providing pedestrian sidewalks, crosswalks, and bike lanes. Therefore, the Project would not increase roadway capacity. The Project would not involve a substantial horizontal or vertical alteration of the existing roadway.

According to Section 3 of the Traffic Noise Analysis Protocol (May 2011), this Project is not a Type I project and, as a result, it is exempt from analysis under NEPA (see Code of Federal Regulations [CFR] Title 23, Part 772). No traffic noise impacts under NEPA (23 CFR 772) are predicted, and no noise abatement is required.

No-Build Alternative

With the No-Build Alternative, no roadway improvements would be implemented. There would be no noise impact and no noise abatement is required.

California Environmental Quality Act Noise Analysis

Build Alternative (Preferred Alternative)

When determining whether a noise impact is significant under CEQA, comparison is made between the baseline noise level and the noise level after Project completion. The CEQA noise analysis is completely independent of the NEPA analysis discussed above, which is centered largely on noise abatement criteria. Under CEQA, the study looks at the setting of the noise impact and then how large or perceptible any noise increase would be in the given area. Key considerations include the uniqueness of the setting; the sensitive nature of the noise receptors; the magnitude of the noise increase; the number of residences affected; and the absolute noise level.

Not all land uses would be considered noise sensitive under CEQA. Noise-sensitive land uses are generally residences, schools, hotels, churches, and libraries. The study area is in an urban environment.

Permanent Change in Noise Levels in Excess of Established Standards

The City of Palmdale General Plan Noise Element recognizes 65 dBA CNEL as the standard for residential noise-land use compatibility. Neither the General Plan nor the Noise Ordinance has quantitative standards for noise level limits. An increase of 3 dBA is barely perceptible to most persons, and an increase of 5 dBA is readily perceptible.

A noise level of 70 dBA was monitored at a first-row residence front yard (Monitoring Site No. 3) with a distance of 30 feet from the nearest travel lane. This
location is representative of many residences along Avenue R and also is the closest sensitive receptor to Avenue R. The noise-sensitive areas for the residences facing Avenue R are the backyards of the homes.

The FHWA’s TNM 2.5 noise model was used to determine existing noise levels. The modeled noise level at the residence’s backyard is 59 dBA Leq (61 dBA CNEL) based on the following assumptions:

- The noise receiver was modeled in the backyard 100 feet from the nearest travel lane.
- The residences were modeled with an average height of 12 feet with an assumed 20 percent space between the first row of residences.
- The privacy side wall height was modeled at 6 feet.

The predicted noise level of 61 dBA CNEL for this residence, which is representative of other residences adjacent to Avenue R, is less than the 65 dBA CNEL noise-land use compatibility standard.

The Project would not increase traffic volumes. The Project would move the through lane closer to the sensitive receptors in some areas. For example, on the westbound roadway segment between 12th Street East and 13th Street East, the through lane would move approximately 12 feet closer to the sensitive receptors. The noise level increase due to the lane shift would be less than 1 dBA, and the projected With-Project noise levels would be less than 65 dBA CNEL. Other noise-sensitive receptors in the Project vicinity (e.g., churches and schools) have existing noise levels that do not exceed 61 dBA CNEL. The projected noise level increase of less than 1 dBA due to the lane shift would not result in noise levels exceeding 65 dBA CNEL. No noise standards would be exceeded; the noise impact of the Project would be less than significant.

**Groundborne Vibration and Noise**

There are no applicable standards for structural damage from vibration. However, Caltrans published the Transportation and Construction Vibration Guidance Manual (2013), which provides the vibration damage guideline thresholds that are shown in Table 24.
The nearest structures to the Project site are the houses abutting the Project boundary. In terms of the classifications in Table 24, these structures are “older residential structures”. Therefore, the criteria for a significant impact is 0.5 peak particle velocity (ppv) inch per second (in/sec) for transient sources and 0.3 ppv in/sec for continuous or frequent intermittent sources.

There are no applicable standards for human annoyance from vibration. The Caltrans vibration annoyance potential guideline thresholds are shown in Table 25. Based on the guidance in Table 25, the “strongly perceptible” vibration level of 0.9 ppv in/sec is considered as a threshold for a potentially significant vibration impact for human annoyance. However, because the structural damage thresholds of 0.5 and 0.3 ppv in/sec are lower than the annoyance threshold, the structural damage thresholds govern the impact assessment.

**Table 24  Guideline Vibration Damage Potential Threshold Criteria**

<table>
<thead>
<tr>
<th>Structure and Condition</th>
<th>Maximum ppv (in/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transient Sources</td>
</tr>
<tr>
<td>Extremely fragile historic buildings, ruins, ancient monuments</td>
<td>0.12</td>
</tr>
<tr>
<td>Fragile buildings</td>
<td>0.2</td>
</tr>
<tr>
<td>Historic and some old buildings</td>
<td>0.5</td>
</tr>
<tr>
<td>Older residential structures</td>
<td>0.5</td>
</tr>
<tr>
<td>New residential structures</td>
<td>1.0</td>
</tr>
<tr>
<td>Modern industrial/commercial buildings</td>
<td>2.0</td>
</tr>
</tbody>
</table>

ppv: peak particle velocity; in/sec: inch(es) per second

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.


**Table 25  Guideline Vibration Annoyance Potential Criteria**

<table>
<thead>
<tr>
<th>Average Human Response</th>
<th>ppv (in/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe</td>
<td>2.0</td>
</tr>
<tr>
<td>Strongly perceptible</td>
<td>0.9</td>
</tr>
<tr>
<td>Distinctly perceptible</td>
<td>0.24</td>
</tr>
<tr>
<td>Barely perceptible</td>
<td>0.035</td>
</tr>
</tbody>
</table>

ppv: peak particle velocity; in/sec: inch(es) per second

In the Build Alternative (Preferred Alternative), the vibration level from construction would be less than significant.

Construction of the Project has the potential to generate vibration to the adjacent residences and their occupants. Operation of heavy construction equipment (e.g., large bulldozers) and impact equipment (e.g., pile drivers, jackhammers) creates seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance to structural damage. Construction that can result in significant levels of ground vibration generally falls into two categories that are best characterized by the cause of the vibration and its duration. Vibration that is steady-state and more or less continuous can be caused by vibratory compaction of soil, vibratory pile driving, movement of large equipment, and other sources. In contrast, vibration that is much more transient in nature and intermittent due to impulsive forces can be caused by pile driving and blasting. The Project would not include blasting and vibratory pile driving.

Table 26 summarizes Caltrans’ typical vibration levels measured during construction activities for various vibration-inducing pieces of equipment at a distance of 25 feet.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>ppv at 25 ft (in/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pile driver (impact)</td>
<td></td>
</tr>
<tr>
<td>upper range</td>
<td>1.518</td>
</tr>
<tr>
<td>typical</td>
<td>0.644</td>
</tr>
<tr>
<td>Pile driver (vibratory)</td>
<td></td>
</tr>
<tr>
<td>upper range</td>
<td>0.734</td>
</tr>
<tr>
<td>typical</td>
<td>0.170</td>
</tr>
<tr>
<td>Vibratory roller</td>
<td>0.210</td>
</tr>
<tr>
<td>Large bulldozer</td>
<td>0.089</td>
</tr>
<tr>
<td>Caisson drilling</td>
<td>0.089</td>
</tr>
<tr>
<td>Loaded trucks</td>
<td>0.076</td>
</tr>
<tr>
<td>Jackhammer</td>
<td>0.035</td>
</tr>
<tr>
<td>Small bulldozer</td>
<td>0.003</td>
</tr>
</tbody>
</table>


Operation of large bulldozers and vibratory rollers near the residences is anticipated. The distance from the residences to the roadway edge can be as close as 25 feet. The vibration levels would be 0.089 ppv in/sec and 0.210 ppv in/sec, respectively, for
bulldozers and vibratory rollers. These values are less than the transient threshold of 0.5 ppv in/sec and less than significant. Loaded trucks would travel adjacent to the residences to bring various construction materials to locations on the site. Based on the assumption that loaded trucks would be as close as 10 feet to adjacent residences, the estimated transient vibration is 0.25 ppv in/sec. This value is less than the transient threshold of 0.50 ppv in/sec; the impact would be less than significant and no mitigation is required.

According to the Washington State Department of Transportation’s 2013 *Final Construction Noise and Vibration Report SR 520, West Connection Bridge Project*, a compactor may generate steady vibration level of 0.03 ppv in/sec at a distance of 100 feet. The vibration level would be 0.14 ppv in/sec as close as 25 feet to adjacent residences and would be less than the threshold of 0.3 ppv in/sec for Continuous/Frequent Intermittent Sources. As a result, vibration levels from the compactor would be less than significant.

**Construction Noise**

The primary noise sources during typical construction activities are the construction equipment diesel engines and the impact noise from operations such as pile driving, blasting, and jackhammering. The Project would not include blasting or vibratory pile driving. Variation in power is an element in characterizing the noise source level from construction equipment and is accounted for by describing the full power or maximum noise level and the duty cycle. The duty cycle is the percent of time that the equipment is operating at full power. Typical maximum noise levels and duty cycles of representative types of equipment are listed in Table 27.
Table 27  Typical Maximum Noise Levels and Duty Cycles for Construction Equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Noise Level (dBA) at 50 ft</th>
<th>Typical Duty Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auger Drill Rig</td>
<td>85</td>
<td>20%</td>
</tr>
<tr>
<td>Backhoe</td>
<td>80</td>
<td>40%</td>
</tr>
<tr>
<td>Chain Saw</td>
<td>85</td>
<td>20%</td>
</tr>
<tr>
<td>Compactor (ground)</td>
<td>80</td>
<td>20%</td>
</tr>
<tr>
<td>Compressor (air)</td>
<td>80</td>
<td>40%</td>
</tr>
<tr>
<td>Concrete Mixer Truck</td>
<td>85</td>
<td>40%</td>
</tr>
<tr>
<td>Concrete Pump</td>
<td>82</td>
<td>20%</td>
</tr>
<tr>
<td>Concrete Saw</td>
<td>90</td>
<td>20%</td>
</tr>
<tr>
<td>Crane (mobile or stationary)</td>
<td>85</td>
<td>20%</td>
</tr>
<tr>
<td>Dozer</td>
<td>85</td>
<td>40%</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>84</td>
<td>40%</td>
</tr>
<tr>
<td>Excavator</td>
<td>85</td>
<td>40%</td>
</tr>
<tr>
<td>Front End Loader</td>
<td>80</td>
<td>40%</td>
</tr>
<tr>
<td>Generator (25 KVA or less)</td>
<td>70</td>
<td>50%</td>
</tr>
<tr>
<td>Generator (more than 25 KVA)</td>
<td>82</td>
<td>50%</td>
</tr>
<tr>
<td>Grader</td>
<td>85</td>
<td>40%</td>
</tr>
<tr>
<td>Jackhammer</td>
<td>85</td>
<td>20%</td>
</tr>
<tr>
<td>Mounted Jackhammer (hoe ram)</td>
<td>90</td>
<td>20%</td>
</tr>
<tr>
<td>Paver</td>
<td>85</td>
<td>50%</td>
</tr>
<tr>
<td>Pneumatic Tools</td>
<td>85</td>
<td>50%</td>
</tr>
<tr>
<td>Pumps</td>
<td>77</td>
<td>50%</td>
</tr>
<tr>
<td>Rock Drill</td>
<td>85</td>
<td>20%</td>
</tr>
<tr>
<td>Scraper</td>
<td>85</td>
<td>40%</td>
</tr>
<tr>
<td>Tractor</td>
<td>84</td>
<td>40%</td>
</tr>
<tr>
<td>Vacuum Excavator (vac-truck)</td>
<td>85</td>
<td>40%</td>
</tr>
<tr>
<td>Vibratory Concrete Mixer</td>
<td>80</td>
<td>20%</td>
</tr>
<tr>
<td>Vibratory Pile Driver</td>
<td>95</td>
<td>20%</td>
</tr>
</tbody>
</table>

dBA: A-weighted decibels; ft: feet; KVA: kilovolt amps

Note: Machinery equipped with noise-control devices or other noise-reducing design features do not generate the same level of noise emissions as those shown in this table.


Project construction would occur over a period of approximately 10 to 15 months. At most locations, construction activities would not occur between the hours of 8:00 PM and 6:30 AM in order to limit the noise impact to adjacent residences per the City Municipal Code.
During construction, nearby receptors would be exposed to noise levels associated with the operation of heavy equipment, including excavators, compactors, backhoes, forklifts, and dump trucks. Noise from this equipment is primarily associated with diesel engines. Impact noise may also occur from pavement breaking with jackhammers. Construction equipment noise would not be constant because of the variations of power, cycles, and equipment location.

Assuming a compactor, a water truck, and a dozer would be used simultaneously during the daytime along Avenue R, at a distance as close as 50 feet from the residences, a combined average noise level of 84 dBA $L_{eq}$ could be generated at the front of the residences. Noise levels at the backyards would be reduced by 10 to 15 dBA because of distance and the location of the buildings. Construction noise would be heard in the residences above the ambient noise levels. Because construction would be limited to the hours specified in the City noise ordinance (i.e., 6:30 AM to 8:00 PM), the temporary, intermittent noise increase would not be substantial. The impact would be less than significant; no mitigation is required.

To minimize construction noise levels, the noise management practices included in avoidance and minimization measure NO-1 would be included in the Project.

It is also recommended that residents near the Project site be notified of construction and provided with a means to report excessive noise, as described in avoidance, and minimization Measure NO-2.

**Noise in Relation to Airport Proximity**

The closest airport to the Project site is the Palmdale Regional Airport, located approximately 2.8 miles to the north. There are no private airstrips, heliports, or helistops in the vicinity of the Project site. The Project would not generate aircraft noise, nor would it locate persons in an area where they would be exposed to excessive aircraft noise levels. There would be no impact.

**No-Build Alternative**

In the No-Build Alternative, no roadway improvements are assumed on the Project site. Therefore, no construction noise, vibration, or operational noise would occur under this alternative.
**Avoidance, Minimization, and/or Abatement Measures**

The following avoidance and minimization measures would be warranted.

**NO-1**

Prior to approval of grading plans and/or prior to issuance of demolition, grading, and building permits, the following noise-reduction measures shall be identified in the construction plans or specifications:

- The construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers’ standards. Stationary equipment shall be equipped with noise enclosures or shall be screened to minimize noise impact.
- The construction contractors shall place all stationary construction equipment so that the equipment is as far as practicable from noise-sensitive receptors and oriented so emitted noise is directed away from noise-sensitive receptors.
- The construction contractors shall locate equipment and material staging in areas that will create the greatest distance between staging area noise sources and noise-sensitive receptors.
- Construction activities shall be limited to between the hours of 6:30 AM and 8:00 PM, Monday through Saturday.
- Equipment maintenance and staging area activities shall be limited to between the hours of 6:30 AM and 8:00 PM.
- No radios, boom boxes, or similar audio equipment shall be operated during construction.

**NO-2**

At least 30 days, but no more than 45 days, prior to the start of demolition and construction activities, all property owners and occupants within 100 feet of the Project site shall be notified of the pending construction of the project. The notification shall include the construction start date, days and hours of work, and estimated completion date. The notification shall also state that the Project will include typical and sometimes loud noise, and it shall provide mobile phone and email contact information.
2.3 Biological Environment

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

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Threatened and Endangered Species, Section 2.3.5. Wetlands and Other Waters are discussed in Section 2.3.2.

Affected Environment
Information in this section is summarized from the Natural Environment Study (November 2015). The following natural communities and other areas occur in the BSA: Rubber Rabbitbrush Scrub, Black Willow Thicket, Disturbed Rubber Rabbitbrush Scrub, Ruderal, Ornamental, and Developed. Effects on these areas are discussed below. Figure 2-14, Biological Resources Impacts, shows the Biological Study Area (BSA) for the Project. The BSA was delineated with a 500-foot buffer, which includes potential for direct and indirect impacts. The Project is located in a relatively developed area and outside any habitat conservation plans.

Most of the biological study area consists of developed areas with landscaping (Developed, Ornamental) that provides low habitat value to wildlife. Undeveloped areas in the biological study area consist of Rubber Rabbitbrush Scrub, Black Willow Thicket, Disturbed Rubber Rabbitbrush Scrub, Ruderal, and Black Willow Thicket. Black Willow Thicket is the only riparian vegetation type present in the BSA (Figure 2-14). Riparian vegetation types, along with unvegetated drainages, are typically under the jurisdiction of the USACE, the California Department of Fish and Wildlife (CDFW), and/or the RWQCB (discussed in more detail in Section 2.3.2). Riparian vegetation can also be used by several special status wildlife species.

Environmental Consequences
Build Alternative (Preferred Alternative)
The Project’s permanent and temporary impacts to natural communities are shown in Table 28 below.
Table 28  Project Impacts to Natural Communities in the Biological Study Area

<table>
<thead>
<tr>
<th>Habitat types</th>
<th>Total Acreage (acres)</th>
<th>Permanent Impacts (acres)</th>
<th>Temporary Impacts (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber Rabbitbrush Scrub</td>
<td>11.41</td>
<td>0.13</td>
<td>0.38</td>
</tr>
<tr>
<td>Black Willow Thicket</td>
<td>1.02</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Disturbed Rubber Rabbitbrush Scrub</td>
<td>5.66</td>
<td>0.00</td>
<td>0.13</td>
</tr>
<tr>
<td>Ruderal</td>
<td>21.38</td>
<td>0.06</td>
<td>0.43</td>
</tr>
<tr>
<td>Ornamental</td>
<td>1.35</td>
<td>0.06</td>
<td>0.10</td>
</tr>
<tr>
<td>Developed</td>
<td>188.52</td>
<td>18.45</td>
<td>12.10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>229.34</strong></td>
<td><strong>18.72</strong></td>
<td><strong>13.19</strong></td>
</tr>
</tbody>
</table>

Source: Natural Environment Study 2015

The Project’s impacts to the natural communities would be minimal as the Project would impact the edges of the natural communities already adjacent to the existing roadway. The Project would impact minimal amounts of native communities—a total of 0.15 acre of permanent impacts to Rubber Rabbitbrush Scrub and Black Willow Thicket, followed by 0.06 acre of permanent impacts to Ruderal vegetation. Because Black Willow Thicket is considered a sensitive plant community by CDFW due to its association with jurisdictional areas, avoidance and minimization measures BIO-1 through BIO-3 are recommended. Approximately 18.51 acres of permanent impacts would occur in Ornamental and Developed lands.

No wildlife corridors were identified in the BSA. Undeveloped parcels with native habitats are scattered and fragmented by development and they do not connect to open desert areas north and south of Palmdale. Due to this isolation, these slivers of habitat adjacent to Avenue R do not function as a primary wildlife habitat or wildlife corridors. Because of this, the Project would not result in impacts to wildlife movement. The BSA is isolated from open desert areas, and no wildlife movement exists. The temporary impacts of the Project would include construction noise, dust, generation of trash and, potentially, water runoff. These impacts already exist in the BSA. Appropriate avoidance and minimization measures will be implemented to avoid and minimize those impacts. (Refer to Sections 2.2.1, Water Quality and Storm Water Runoff; 2.2.5, Air Quality; and 2.2.6, Noise). With implementation of avoidance and minimization measures, no adverse effects to natural communities would occur.
Chapter 2 • Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

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Biological Study Area (BSA)

Impacts
- Permanent
- Temporary

Vegetation Types and Other Areas
- Black Willow Thicket
- Rubber Rabbitbrush Scrub
- Disturbed Rubber Rabbitbrush Scrub
- Ornamental
- Ruderal
- Developed

Figure 2-14
Avenue R Safety Improvement Project
ATPL-5378(038)
Aerial Source: LAR-JAC 2014
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**No-Build Alternative**
The No-Build Alternative would not result in any impacts because there would be no change from existing conditions.

**Avoidance, Minimization, and/or Mitigation Measures**
The following measures will be incorporated to avoid and minimize effects on Black Willow Thicket.

**BIO-1**
Prior to construction, highly visible barriers (e.g., orange construction fencing) shall be installed around the Black Willow Thicket habitat adjacent to the Project footprint to designate this Environmentally Sensitive Area (ESA) to be preserved. No grading or fill activity of any type shall be permitted in this ESA unless authorized through permitting with the California Department of Fish and Wildlife (CDFW) and/or the Regional Water Quality Control Board (RWQCB) (see Section 2.3.2). No construction activities, materials, or equipment shall be allowed in the ESA. All construction equipment shall be operated in such a manner as to prevent accidental damage to this ESA. No structure of any kind or incidental storage of equipment or supplies shall be allowed in the ESA. In areas where vegetation is immediately adjacent to planned grading activities, silt fence barriers shall be installed at the ESA boundaries to prevent accidental deposition of fill material in the ESA.

**BIO-2**
All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities shall occur in Developed or designated non-sensitive habitat areas (e.g., Ruderal, Developed) and outside Black Willow Thicket areas and any associated drainages.

**BIO-3**
A construction Storm Water Pollution Prevention Plan (SWPPP) and Soil Erosion and Sedimentation Plan (SESP) will be developed to minimize erosion and to identify specific pollution prevention measures that will eliminate or control potential point and non-point pollution sources on site during the Project’s construction phase and during Project operation. The SWPPP will identify specific Best Management Practices (BMPs) to be implemented during Project construction to protect water quality. In addition, the SWPPP will contain provisions for changes to the plan such that alternative
mechanisms can be used, if necessary, during Project design and/or construction to achieve the stated goals and performance standards.

2.3.2 Wetlands and Other Waters

**Regulatory Setting**

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

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

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

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

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

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

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

Information contained in this section is summarized from the *Natural Environment Study* (November 2015) and the *Jurisdictional Delineation Report* (October 2015). A total of four drainage features were identified for analysis. As a result of an approved jurisdictional determination dated June 7, 2013, the USACE considers drainages in the Antelope Valley Area to be non-jurisdictional unless they drain into Lake Palmdale. Due to the topography of the BSA sloping away from Lake Palmdale and that all mapped features are isolated from other water bodies that may drain into Lake Palmdale, no portion of the BSA contains a wetland “water of the U.S.,” or a non-wetland waters of the U.S. that is subject to the jurisdiction of the USACE.

**Environmental Consequences**

*Build Alternative (Preferred Alternative)*

The following permits will be required to implement the Project:

- Regional Water Quality Control Board Section 401 Water Quality Certification
- California Department of Fish and Wildlife Section 1602 Streambed Alteration Agreement.

A detailed summary of the regulatory approval process is provided in Section 5.0 of the *Jurisdictional Delineation Report*. In addition, a summary of regulatory requirements is provided in Section 2.1 of the *Natural Environment Study*.

The potential jurisdictional drainages are shown on Figure 2-15, and RWQCB jurisdictional acreage is shown in Table 29. As shown in Table 29, the total area of potential RWQCB jurisdiction is approximately 0.14 acre. Temporary impacts of the Project would consist of 0.004 acre and permanent impacts of the Project would consist of 0.002 acre. Because the Project would impact waters under the jurisdiction of the RWQCB, a Section 401 Water Quality Certification permit will be required. Refer to mitigation measure BIO-4.
Figure 2-15
Jurisdictional Resources Impacts
Avenue R Safety Improvement Project
ATPL-5378(038)
Aerial Source: LAR-IAC 2014
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Table 29  Project Impacts on Waters Under the Jurisdiction of the Regional Water Quality Control Board

<table>
<thead>
<tr>
<th>RWQCB Jurisdiction</th>
<th>Existing</th>
<th>Permanent Impact (Acres)</th>
<th>Temporary Impact (Acres)</th>
<th>Total Impact (Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature 1</td>
<td>0.040</td>
<td>0.001</td>
<td>0.001</td>
<td>0.002</td>
</tr>
<tr>
<td>Feature 3</td>
<td>0.100</td>
<td>0.001</td>
<td>0.003</td>
<td>0.004</td>
</tr>
<tr>
<td>Total</td>
<td>0.140</td>
<td>0.002</td>
<td>0.004</td>
<td>0.006</td>
</tr>
</tbody>
</table>

RWQCB: Regional Water Quality Control Board
Source: Psomas

As shown in Table 30, approximately 1.32 acres of CDFW jurisdictional water resources occur in the Project area. Temporary impacts of the Project would consist of 0.054 acre and permanent impacts of the Project would consist of 0.023 acre. Because the Project would impact waters under the jurisdiction of the CDFW, a Notification to the CDFW regarding streambed alternation under Section 1602 of the California Fish and Game Code will be required. Refer to mitigation measure BIO-4.

Table 30  Project Impacts on Waters Under the Jurisdiction of the California Department of Fish and Wildlife

<table>
<thead>
<tr>
<th>CDFW Jurisdiction</th>
<th>Existing (Acres)</th>
<th>Permanent Impact (Acres)</th>
<th>Temporary Impact (Acres)</th>
<th>Total Impact (Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature 1 (including Black Willow Thicket)</td>
<td>1.14</td>
<td>0.022</td>
<td>0.047</td>
<td>0.069</td>
</tr>
<tr>
<td>Feature 3</td>
<td>0.18</td>
<td>0.001</td>
<td>0.007</td>
<td>0.008</td>
</tr>
<tr>
<td>Total</td>
<td>1.32</td>
<td>0.023</td>
<td>0.054</td>
<td>0.077</td>
</tr>
</tbody>
</table>

Source: Psomas

No-Build Alternative
There would be no change from existing conditions with the No-Build Alternative so there would be no impact to jurisdictional waters from this alternative.
Avoidance, Minimization, and/or Mitigation Measures

Avoidance, minimization, and mitigation measures BIO-1 through BIO-3 (located on page 205) would be applicable. In addition to the avoidance, minimization, and mitigation measures discussed in the previous section, the following measure is recommended.

**BIO-4**

Prior to initiation of Project activities, City of Palmdale shall obtain all necessary permits for impacts to RWQCB and/or CDFW jurisdictional areas. Mitigation for the loss of jurisdictional resources shall be negotiated with the resource agencies during the regulatory permitting process. Potential mitigation options shall include one or more of the following: (1) payment to a mitigation bank or regional riparian enhancement program (e.g., invasive plant or wildlife species removal) and/or (2) restoration of riparian habitat either on site or off site at a ratio of no less than 1:1, determined through consultation with the above-listed resource agencies. If in-lieu mitigation fees are required, prior to the initiation of any construction-related activities, the City of Palmdale shall pay the in-lieu mitigation fee to a mitigation bank/enhancement program for the in-kind (equivalent vegetation type and acreage) replacement of impacted jurisdictional resources. If a Restoration Program is required, prior to the initiation of any construction-related activities, the City of Palmdale shall prepare and submit a Riparian Habitat Mitigation and Monitoring Program (HMMP) for RWQCB and CDFW approval. If a Riparian HMMP is required, it shall state that riparian vegetation shall be removed during the non-nesting bird season (i.e., September 1 to February 28) and shall contain the items discussed below.

a. **Responsibilities and Qualifications.** The responsibilities and qualifications of the City of Palmdale, ecological specialists, and restoration (landscape) contracting personnel who will implement the plan shall be specified. At a minimum, the HMMP shall specify that the ecological specialists and contractors have performed successful installation and long-term monitoring and maintenance of southern California native habitat mitigation/restoration programs, which were implemented under natural resource agency permit conditions. A successful program...
shall be defined as one that has been signed off by the resource agencies.

b. **Performance Criteria.** Mitigation performance criteria to be specified in the HMMP shall include native vegetation percent coverage and diversity (minimum), non-native vegetation percent coverage (maximum), and the cessation of irrigation a minimum of two years prior to eligibility for sign-off.

c. **Site Selection.** Site selection for habitat restoration and/or enhancement shall be determined in coordination with the City of Palmdale, the RWQCB, and the CDFW.

d. **Native Plant and Seed Materials Procurement.** One to two years prior to mitigation implementation (or as far in advance as practicable prior to planting/seeding implementation), the City of Palmdale or its consultants/contractors shall initiate collection of the native seed materials specified in the HMMP. It is highly recommended that all seed mixes be of local origin (i.e., collected within the same subwatershed as the selected mitigation site).

e. **Wildlife Surveys and Protection.** The HMMP shall specify any wildlife surveys (e.g., nesting bird surveys, focused surveys for special status species) and biological monitoring that are required to avoid adverse impacts to wildlife species during the performance of mitigation site preparation, installation, or maintenance tasks. The HMMP shall also describe potential restrictions on these tasks due to sensitive wildlife conditions on the mitigation site (e.g., suspension of these tasks during the nesting bird season).

f. **Site Preparation and Plant Materials Installation.** Mitigation site preparation shall include (i) protection of existing native species and habitats (including compliance with seasonal restrictions, if any); (ii) installation of protective fencing and/or signage (as needed); (iii) initial trash and weed removal (during the non-nesting bird season); (iv) soil treatments, as needed (i.e., imprinting, decompacting); (v) installation of erosion-control measures (i.e., fully natural/bio-degradable [not ‘photo-degradable’] fiber roll); (vi) application of salvaged native plant materials (i.e., duff) as available; (vii) temporary irrigation
installation; (viii) a minimum one-year preliminary ‘grow-and-kill’
weed abatement program (prior to the installation of native plant
and seed materials), including specification of approved
herbicides; (ix) planting of container species; and (x) seed mix
application.

g. **Schedule.** An implementation schedule shall be developed that
includes planting and seeding to occur in late fall and early winter
(i.e., between November 1 and December 31) and the frequency of
long-term maintenance and monitoring activities (including the
dates of annual quantitative surveys, as described below).

h. **Maintenance Program.** The Maintenance Program shall include
(i) protection of existing native species and habitats (including
compliance with seasonal restrictions, if any); (ii) maintenance of
protective fencing and/or signage; (iii) trash and weed removal,
including specification of approved herbicides; (iv) maintenance of
erosion-control measures; (v) inspection/repairs of irrigation
components; (vi) replacement of dead container plants (as needed);
(vii) application of remedial seed mixes (as needed); (viii)
herbivory control; and (ix) removal of all non-vegetative materials
(i.e., fencing, signage, irrigation components) upon Project
completion. The mitigation site shall be maintained for a period of
five years to ensure the successful establishment of riparian habitat
in the restored and created areas; however, the City of Palmdale
may request that the RWQCB and the CDFW release it from
maintenance requirements prior to five years if the mitigation
program has achieved all performance criteria.

i. **Monitoring Program.** The Monitoring Program shall include
(i) qualitative monitoring (i.e., general habitat conditions, photo-
documentation from established photo stations); (ii) quantitative
monitoring (e.g., randomly placed point-intercept transects); (iii)
annual monitoring reports, which shall be submitted to the resource
agencies for five years or until project completion; and (iv) wildlife
surveys and monitoring, as described above. The annual
monitoring reports shall include a detailed discussion of mitigation
site performance (e.g., measured vegetation coverage and
diversity) and compliance with required performance criteria; a
discussion of wildlife species’ use of the restored and/or enhanced habitat area(s); and a list of proposed remedial measures to address non-compliance with any performance criterion. The site shall be monitored for five years or until the RWQCB and CDFW have released the City of Palmdale from maintenance requirements.

j. **Long-Term Preservation.** Long-term site preservation shall be outlined in the HMMP to ensure the mitigation site is not impacted by future projects.

### 2.3.3 Plant Species

#### Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (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 Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species section 2.3.5 in this document for detailed information about these species.

This section of the document discusses all the 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 United States Code 16 (USC), Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), CA Public Resources Code, Sections 2100-21177.

#### Affected Environment

Information contained in this section is summarized from the *Natural Environment Study* (November 2015).
In addition to those that are formally listed as Threatened or Endangered (described in Section 2.3.5), special-status plant species include plants that occur on the CDFW’s State and Federally Listed Endangered, Threatened, And Rare Plants Of California; that have a California Rare Plant Rank ([CRPR], formerly known as California Native Plant Society); and that are listed in the Palmdale Native Desert Vegetation Ordinance. Three non-listed, rare plant species have the potential to occur in the Project region and were evaluated in the Natural Environment Study. These species include the following:

- Peirson’s morning-glory (*Calystegia peirsonii*), a California endemic species that has a CRPR of 4.2, which means that it is of limited distribution and is “fairly endangered” in California.
- White pygmy-poppy (*Canbya candida*), a California endemic species that has a CRPR of 4.2.
- The Mojave spineflower (*Chorizanthe spinosa*), a California endemic species that has a CRPR of 4.2.

None of the plant species listed above were observed on March 17, April 16, or May 5, 2016, in the BSA during focused surveys that were conducted pursuant to protocols established by the CDFW. However, due to low rainfall in 2015, these plant species may not have been detectable during surveys (i.e., it may not have germinated in 2015). Habitat in the BSA is considered only marginally suitable for these species; therefore, they have a limited potential to occur in the BSA.

No desert plants protected under the Palmdale Native Desert Vegetation Ordinance (e.g., Joshua trees [*Yucca brevifolia*]) were observed in the BSA.

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

Since none of these plant species were found in the BSA during focused surveys, no impacts to these species would be expected. However, due to low rainfall in 2015, these plant species may not have been detectable during surveys, and thus avoidance and minimization measure BIO-5 is recommended.

**No-Build Alternative**

There would be no change from existing conditions with the No-Build Alternative.
Avoidance, Minimization, and/or Mitigation Measures

Avoidance, minimization and mitigation measure BIO-5 would be applicable.

BIO-5 A pre-construction focused survey shall be conducted for Peirson’s morning-glory, white pygmy-poppy, and Mojave spineflower during their respective blooming periods in a year of adequate rainfall (as determined by monitoring a reference population of this species to confirm germination). If this species occurs in the impact area, Project design shall avoid and minimize impacts to the extent practicable. If impacts cannot be avoided, in the spring before construction begins, seed shall be collected by a qualified biologist or qualified seed collector from plants that would be impacted; seed shall be used in revegetation efforts or at the mitigation site.

2.3.4 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries Service) and the California Department of Fish and Wildlife (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 the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5 below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

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

Information contained in this section is summarized from the Natural Environment Study (November 2015).

Special-status species include CDFW Fully Protected species and Species of Special Concern, in addition to those that are formally listed as Threatened or Endangered. Thirteen special-status wildlife species (including four Threatened or Endangered species) are known to occur in the Project region and were evaluated in the Natural Environment Study. Eight non-listed special status species have some potential to occur in the study area or have potential habitat in the area. These species include silvery legless lizard (Anniella pulchra pulchra), coast horned lizard (Phrynosoma blainvillii), Bell’s sage sparrow (Artemisiospiza belli belli), loggerhead shrike (Lanius ludovicianus), burrowing owl (Athene cunicularia), ferruginous hawk (Buteo regalis), merlin (Falco columbarius), and Cooper’s hawk (Accipiter cooperii).

- Silvery legless lizard is a California Species of Special Concern. Marginally suitable habitat for this species is present in the BSA. This species was not found during the field survey conducted on March 17, 2015, and was not incidentally observed during focused surveys for other species on April 2, April 14, May 19, June 1, June 22, July 13, or July 14, 2015.

- Coast horned lizard is a California Species of Special Concern. Marginally suitable habitat for coast horned lizard is present. Additionally, the remnant patches of habitat in the BSA are highly fragmented (i.e., separated from larger areas of habitat), so this species has a limited potential to occur. This species was not found during the field survey conducted on March 17, 2015, and was not incidentally observed during focused surveys for other species on April 2, April 14, May 19, June 1, June 22, July 13, or July 14, 2015.

- Bell’s sage sparrow is a CDFW Watch List species. Limited marginally suitable habitat is present in the biological study area; therefore, Bell’s sage sparrow has limited potential to occur, although it was not found in the BSA during surveys. This species was not found during the field survey conducted on March 17, 2015, and was not incidentally observed during focused surveys for other species on April 2, April 14, May 19, June 1, June 22, July 13, or July 14, 2015.

- Loggerhead shrike is a California Species of Special Concern. Limited suitable foraging and nesting habitat for this species is located in the BSA. This species was not found during the field survey conducted on March 17, 2015, and was not
incidentally observed during focused surveys for other species on April 2, April 14, May 19, June 1, June 22, July 13, or July 14, 2015.

- Burrowing owl is a California Species of Special Concern. Suitable foraging and nesting habitat for this species is present in the BSA. This species was not found during focused surveys conducted on March 17, May 19, June 22, or July 14, 2015.

- Ferruginous hawk is a CDFW Watch List species. These hawks winter in Antelope Valley, foraging in the open fields and often using power poles as perches, which are found in the BSA. This species was not found during the field survey conducted on March 17, 2015, and was not incidentally observed during focused surveys for other species on April 2, April 14, May 19, June 1, June 22, July 13, or July 14, 2015.

- Merlin is a CDFW Watch List species. Marginally suitable foraging habitat for this species is present in the BSA. This species was not found during the field survey conducted on March 17, 2015, and was not incidentally observed during focused surveys for other species on April 2, April 14, May 19, June 1, June 22, July 13, or July 14, 2015.

- Cooper’s hawk is a CDFW Watch List species. Suitable foraging and nesting habitat are present in the biological study area; therefore, Cooper’s hawk may occur. This species was not found during the field survey conducted on March 17, 2015, and was not incidentally observed during focused surveys for other species on April 2, April 14, May 19, June 1, June 22, July 13, or July 14, 2015.

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

The loss of nesting and/or foraging habitat for the eight non-listed special status wildlife species in the BSA would be minor since work is scheduled to occur along the existing roadway edge where patches of marginal habitat is present. The Project would have the following impacts on the eight species discussed below.

**Silvery Legless Lizard:** The Project would permanently affect 0.21 acre and temporarily affect 0.52 acre along the drainages. Implementation of avoidance and minimization measure BIO-6, along with implementation of BMPs while working in and around waterways, would ensure that the proposed Project would not directly injure or kill any silvery legless lizards or affect their habitat.
Coast Horned Lizard: The Project would permanently affect 0.15 acre and temporarily affect 0.52 acre of suitable habitat for coast horned lizard. Implementation of avoidance and minimization measures BIO-7 and BIO-8 would ensure that the Project will result in minimal loss of suitable habitat relative to the amount available in the Project region.

Bell’s Sage Sparrow: The Project would permanently affect 0.13 acre and temporarily affect 0.48 acre of suitable foraging habitat for Bell’s sage sparrow. Limited marginally suitable habitat for this species occurs in the Project vicinity; therefore this species has a limited potential to occur. Implementation of avoidance and minimization measure BIO-9 would ensure that the Project will result in minimal loss of suitable habitat relative to the amount available in the Project region.

Loggerhead Shrike: The Project would permanently affect 0.27 acre and temporarily affect 1.05 acres of foraging habitat for the loggerhead shrike. The loss of habitat for this species would be limited relative to the availability of similar habitat in the region. Loggerhead shrike could nest in trees and shrubs in the BSA, and vegetation removal and/or nearby construction could adversely affect nesting efforts for this species. Construction during the nesting season could disturb nesting activities, possibly resulting in nest abandonment, loss of young, and reduced health and vigor of eggs and/or nestlings. Implementation of avoidance and minimization measure BIO-9 would ensure that the Project will result in minimal loss of suitable habitat relative to the amount available in the Project region.

Burrowing Owl: No impacts to this species are expected because this species was not observed in the Project vicinity during 2015 focused surveys. However suitable foraging and nesting habitat for this species is present in the Project vicinity. Since burrowing owls move seasonally and could potentially move into the Project vicinity, construction activities that crush burrowing owl burrows or disturb burrowing owl nesting activities (e.g., keeping adult or young owls from normal foraging activities due to nearby noise and disturbance) could adversely affect the owls. Implementation of avoidance and minimization measures BIO-10 and BIO-11 would ensure that the Project will result in minimal loss of suitable habitat relative to the amount available in the Project region.

Ferruginous Hawk: The Project would permanently impact 0.27 acre of foraging habitat for the ferruginous hawk. Because these hawks do not nest in California, no impacts to nests are anticipated and no mitigation is required.
Merlin: The Project would permanently impact 0.27 acre of foraging habitat for merlin. Because merlins only winter in California, no impacts to nesting activities are anticipated and no mitigation is required.

Cooper’s Hawk: The Project would permanently affect 0.27 acre and temporarily affect 1.05 acres of suitable foraging habitat for the Cooper’s hawk. Suitable foraging and nesting habitat are present in the Project vicinity. The Project would contribute to the regional ongoing loss of raptor foraging habitat in the region. However, the loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. Implementation of avoidance and minimization measures BIO-12 and BIO-13 would ensure that the Project will result in minimal loss of suitable habitat relative to the amount available in the Project region.

No-Build Alternative
There would be no change from existing conditions with the No-Build Alternative, and thus the No-Build Alternative would not result in adverse effects to Special Status Animal Species.

Avoidance, Minimization, and/or Mitigation Measures
Avoidance, minimization and mitigation measures BIO-6 through BIO-13 would be applicable.

Silvery Legless Lizard
BIO-6 A pre-construction survey for the silvery legless lizard shall be conducted by a qualified biologist in the proposed impact area. If this species is observed and is in imminent danger from construction activities, a qualified biologist (i.e., one holding the necessary permits and/or authorizations to handle this species) shall capture and relocate the silvery legless lizard to appropriate habitat outside the impact area. Prior to translocating any silvery legless lizards, the CDFW shall review and approve the translocation site and the methods by which the animals shall be moved. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.

Coast Horned Lizard
BIO-7 A qualified biologist shall be present during vegetation removal of Rubber Rabbitbrush Scrub and Disturbed Rubber Rabbitbrush Scrub. If this species is observed and is in imminent danger from construction activities, a qualified Biologist (i.e., one holding the necessary permits
and/or authorizations to handle this species) shall capture and relocate the coast horned lizard to appropriate habitat outside the impact area. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.

**BIO-8**

Prior to the start of the construction day and at the end of the construction day, a qualified Biologist shall inspect all open trenches, holes, or other excavations for the presence of small mammals and other wildlife. A qualified Biologist shall relocate any animals found trapped in excavated areas. Excavations that remain open overnight shall be covered to prevent wildlife from becoming trapped.

**Nesting Birds**

**BIO-9**

Vegetation clearing shall be conducted during the bird non-nesting season (i.e., September 1 to January 31). If vegetation clearing would be conducted during the bird nesting season (i.e., February 1 to August 31), a qualified biologist shall conduct a survey no more than three days prior to construction to determine whether any birds are nesting in or adjacent to the impact area. If nesting is not occurring, construction work can proceed. If an active nest is present, construction work will be restricted within a buffer area of 250 feet (or as otherwise determined by a qualified biologist based on the location of the nest) until fledglings have left the nest. Any encroachment into the buffer area shall only be allowed if a qualified biologist determines that the proposed activity will not disturb the nest occupants. Any active nests shall be mapped on an aerial photograph, and the location information shall be given to City of Palmdale. The location of active nests shall be marked on applicable construction plans as ESAs. A nesting bird survey report (including mapping of any active nests) shall be prepared by the biologist and shall be submitted to the City of Palmdale.

**Burrowing Owl**

**BIO-10**

At least 14 days prior to construction activities, a qualified Biologist shall conduct a pre-construction survey to determine if there are any active burrowing owl burrows and if any avoidance and minimization measures will be required. A final pre-construction survey shall be conducted within 24 hours prior to ground disturbance. If no active burrows are observed, construction work can proceed.
If an active burrow is observed outside the burrowing owl nesting season (i.e., September 1 to February 28) and the burrow is within the impact area, standard burrowing owl burrow closing procedures will be used to exclude burrowing owls (i.e., using passive relocation with one-way doors). Per CDFW’s 1995 recommendations, two artificial burrows will be provided for each burrow that is destroyed. The location of the artificial burrows will be determined in consultation with the CDFW.

If an active burrow is observed during the burrowing owl’s non-nesting season (i.e., September 1 to February 28) and the burrow is not within the impact area, construction work will be restricted to within 160 feet of the burrow (or as otherwise determined by the project biologist in consultation with the CDFW).

If an active burrow is present and nesting is believed to be occurring during the nesting season (i.e., March 1 to August 31), construction work and access will be restricted to within 250 feet of the burrow (or as otherwise determined by the project biologist in consultation with the CDFW) until fledglings have left the burrow to ensure compliance with Section 3503.5 of the California Fish and Game Code. Results of the surveys will be provided to the CDFW.

*Nesting Raptors*

Tree removal shall occur during the bird non-nesting season (i.e., September 1 to January 31). If construction activity begins during the raptor nesting season (i.e., February 1 to June 30), a qualified biologist shall survey within and adjacent to the construction limits for the presence of occupied raptor nests prior to the start of construction. The survey shall be conducted within seven days prior to the start of construction.

Any active raptor nests shall be mapped on an aerial photograph by the Biologist, and the location information shall be given to the City of Palmdale. The location of active nests shall be marked on applicable construction plans as an ESA. If no active nests are found, no further surveys shall be required. A nesting raptor survey report (including mapping of any active nests) shall be prepared by the Biologist and shall be submitted to City of Palmdale. Any active nest(s) shall be
protected as an ESA until nesting activity has ended to ensure compliance with the California Fish and Game Code (Sections 3503, 3503.5, and 3513) and the Migratory Bird Treaty Act (MBTA). To protect any active nest sites, the following restrictions on construction are required between February 1 and June 30 (or until nests are no longer active as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 500 feet in any direction from an active raptor nest (or as otherwise determined by a qualified biologist) and (2) access and surveying shall not be allowed within 100 feet of nests (or as otherwise determined by a qualified biologist).

**BIO-13**

Construction activities within 300 to 500 feet of potential nesting areas shall be scheduled to begin between July 1 and January 31 to avoid the raptor nesting season. If vegetation removal activities would occur during the raptor nesting season (February 1 to June 30), a pre-construction survey for nesting raptors shall be conducted by a qualified biologist within seven days prior to clearing of any vegetation. If any active nests are detected, the biologist shall designate a buffer around the nest (ranging from 300 to 500 feet depending on the sensitivity of the species and the location of the nest) that must be protected until the chicks have fledged or until the biologist has determined that the nest has failed.

### 2.3.5 Threatened and Endangered Species

**Regulatory Setting**

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

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

Information contained in this section is summarized from the *Natural Environment Study* (November 2015). A USFWS species list was obtained on May 21, 2015, and updated lists were obtained on November 4, 2015, May 13, 2016, and April 17, 2017.

Four federally and State-listed Threatened or Endangered wildlife species were reported in the CNNDDB database searches, and two of them are known to occur in the...
Project region or have their range in the BSA. No federally and State-listed Threatened or Endangered plant species were reported in the database searches.

One State-listed Threatened wildlife species—Swainson’s hawk (Buteo swainsoni)—has limited potentially suitable foraging and nesting habitat in the BSA. The Antelope Valley supports a breeding population of Swainson’s hawk. Swainson’s hawk nests are typically located in a solitary tree, shrub, or small grove of trees or a line of trees along a stream course; they can also be located on human-built structures such as power poles. Suitable foraging habitats consist of open grasslands, sparse shrublands, open woodlands, and agricultural areas such as wheat and alfalfa fields. Focused surveys were conducted between March and July 2015 to determine potential nesting activities. No Swainson’s hawks were observed in the BSA.

Another State-listed Threatened species—Mohave ground squirrel (Xerospermophilus mohavensis) —has its southern range in the BSA. A habitat assessment and visual observation survey was conducted on March 17, 2015. The habitat is largely unsuitable for the Mohave ground squirrels, and none were observed.

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

The project site lacks suitable habitat, nor is the area designated as critical habitat for the following federally threatened and endangered species; California Condor (Gymnogyps californianus), Least Bell’s Vireo (Vireo bellii pusillus), and Desert Tortoise (Gopherus agassizii). These species were not observed during the focused surveys conducted on (March 17, 2016; April 2, 2016; April 14, 2016; April 16, 2016; May 5, 2016; May 19, 2016; June 22, 2016; July 14, 2016, July 15, 2016). Additionally the project impacts would be limited to the edge of the roadway and it’s immediate surroundings and thus the project will have no effect on these species.

**Swainson’s Hawk:** Limited potentially suitable foraging and nesting habitats are present in the BSA. While mature trees provide suitable nesting habitat throughout the BSA, the potential foraging habitat (i.e., Rubber Rabbitbush Scrub, disturbed Rubber Rabbitbush Scrub, Ruderal) for the Swainson’s hawk in the survey area is limited in extent and generally appears to be of low quality. No impacts to this species would be expected because this species was not observed in the BSA (or within 0.5 mile of it) during focused surveys. However, because this species occurs in the region, it could move into the BSA in future years. With incorporation of the
avoidance and minimization measures BIO-14 through BIO-16, the Project is expected to have a less than substantial effect on the species.

**Mohave Ground Squirrel:** No impacts to this species would be expected because the habitat for this species is unsuitable and because this species was not observed in the BSA during the habitat assessment and visual observation survey. Project impacts would be limited to the edges of the existing roadway and thus would be limited in nature. The habitat in the BSA is isolated from the rest of Mojave Desert by surrounding development, which is degraded and unsuitable for supporting a population of Mohave ground squirrels. Therefore, the Project is not expected to have a substantial effect on this species. However, avoidance and minimization measures BIO-17 through BIO-20 were included for standard wildlife species monitoring during construction.

**No-Build Alternative**
There would be no change from existing conditions with the No-Build Alternative, and the No-Built Alternative would not result in adverse effects to Threatened and Endangered Species.

**Avoidance, Minimization, and/or Mitigation Measures**
Avoidance, minimization and mitigation measures BIO-14 through BIO-20 would be applicable.

**Swainson’s Hawk**

**BIO-14**
Tree removal shall occur during the Swainson’s hawk’s non-nesting season (i.e., September 1 to January 31). If construction would be initiated during the Swainson’s hawk nesting season (i.e., February 1 to August 31), a pre-construction survey for Swainson’s hawk nests shall be conducted by a qualified biologist within a 0.5-mile radius of the Project site for the presence of an active nest. The pre-construction survey shall be conducted in accordance with the Swainson’s Hawk Technical Advisory Committee’s (SHTAC’s) *Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley* (2000). If no active nests are found, no further surveys shall be required. A nesting raptor survey report (including mapping of any active nests) shall be prepared by the biologist and shall be submitted to the City of Palmdale and the CDFW.
BIO-15 If a Swainson’s hawk is nesting within 0.5 mile of the proposed impact area, the CDFW shall be consulted to evaluate the potential for disturbance of the nesting birds during construction and to approve measures that would avoid impacts on the active nest; authorization to proceed shall be obtained before work starts. The active nest site shall be protected until nesting activity has ended to ensure compliance with the California Endangered Species Act and Sections 3503.5 and 3513 of the California Fish and Game Code. Any Swainson’s hawk nests shall be mapped on an aerial photograph by the biologist, and the location information shall be given to the City of Palmdale. The location of active nests shall be marked on applicable construction plans as an ESA.

BIO-16 To protect an active nest site, the following restrictions on construction are required between February 1 and August 31 (or until nests are no longer active, as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 500 feet in any direction from any occupied Swainson’s hawk nest and (2) access and surveying shall be restricted within 300 feet of any occupied Swainson’s hawk nest. Any encroachment into the 500-/300-foot buffer area around the known nest shall be allowed only if a qualified biologist determines that the proposed activity will not disturb the nest occupants.

Mohave Ground Squirrel

BIO-17 A qualified Biologist shall be present during vegetation removal of Rubber Rabbitbrush Scrub and Disturbed Rubber Rabbitbrush Scrub. If Mohave ground squirrel is observed and is in imminent danger from construction activities, a qualified biologist (i.e., one holding the necessary permits and/or authorizations to handle this species) shall capture and relocate the Mohave ground squirrels to appropriate habitat outside the impact area. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.

BIO-18 All vegetation cleared from the impact area shall be removed immediately. No soils excavated from the Project site shall be kept on site unless secured. Stockpiled soils shall be secured with extra strength cover foil buried at least one foot underground to discourage wildlife from burrowing.
A worker environmental awareness program (WEAP) training shall be provided to construction personnel that discusses the Mohave ground squirrel, its habitat, and Best Management Practices (BMPs) to protect it during construction.

Prior to the start of the construction day and at the end of the construction day, a qualified biologist shall inspect all open trenches, holes, or other excavations for the presence of small mammals and other wildlife. A qualified biologist shall relocate any animals found trapped in excavated areas. Excavations that remain open overnight shall be covered to prevent wildlife from becoming trapped.

2.3.6 Invasive Species

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (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.” Federal Highway Administration (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 National Environmental Policy Act (NEPA) analysis for a proposed project.

Affected Environment

Information contained within this section is summarized from the Natural Environment Study (November 2015).

Exotic plant species exist within the non-native plant communities throughout the BSA in patches of native plant communities and in areas that have been disturbed by human use. The most dominant habitat type in the BSA is Developed, followed by Ruderal and Ornamental.

The FHWA issued guidance directing the use of the State of California List of Noxious Weed Species to comply with a NEPA analysis for a given project. This current list was reviewed to determine which of the species on the list were observed in the BSA. Although not mandated by FHWA guidance, the California Invasive Plant Council’s (Cal-IPC’s) 2015 Invasive Plant Inventory was also reviewed to
further assess the potential impacts of the Project on the introduction and spread of invasive species. The plant compendium from the 2015 special status plant surveys was used.

Nine plant species occurring on Cal-IPC’s Invasive Plant Inventory were observed in the BSA. Two of these species are rated as “High”: red brome (*Bromus madritensis*) and hairy tamarix (*Tamarix ramosissima*). Species in the “High” category have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically. One species found in the BSA, rigput brome (*Bromus diandrus*), is rated as “Moderate”. According to Cal-IPC’s Invasive Plant Inventory (2015), “Moderate” species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread. Six species found in the BSA are rated as “Limited”: wise tansy mustard (*Descurainia sophia*), five-hook bassia (*Bassia hyssopifolia*), variable burclover (*Medicago polymorpha*), redstem filaree (*Erodium cicutarium*), curly dock (*Rumex crispus*), and Mediterranean schismus (*Schismus barbatus*). According to Cal-IPC’s Invasive Plant Inventory (2015), “Limited” species “are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic”.

None of the plant species listed under Pest Rating A or B on the State of California List of Noxious Weed Species were observed in the BSA.

**Environmental Consequences**

**Build Alternative (Preferred Alternative)**

During construction, some exotic trees and other invasive plants may be removed and transported off site and their seeds could be inadvertently spread to adjacent areas during this process. The Project is located in a suburban area that lacks high quality habitats. However, four drainages traverse the BSA, which can serve as distribution pathways for non-native species. Implementation of avoidance and minimization measures BIO-21 through BIO-23 would ensure that exotic trees and other
landscaping to be removed from the Project site would be handled, transported, and disposed of at a green waste facility according to applicable laws and regulations and would not be dispersed into native habitats. Therefore, implementation of Minimization and Avoidance Measures would ensure that exotic trees and other landscaping to be removed from the site would be handled, transported, and disposed of at a green waste facility according to the applicable laws and regulations and would not be dispersed into the native habitats. As a result, the Project is not expected to disperse exotic plant species seeds and/or otherwise contribute to the invasion of exotic species into natural habitats.

In addition, the Project may include landscaping in the right-of-way. Federal requirements prohibit the planting of exotic species identified as invasive. Due to Caltrans’ policies, none of the species on the California List of Noxious Weeds would be used for erosion-control or landscaping purposes.

**No-Build Alternative**

There would be no change from existing conditions with the No-Build Alternative. Therefore, the No-Build Alternative would not result in adverse effects related to spread of invasive plant species.

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

No adverse impacts would occur, and no avoidance, minimization, and/or mitigation measures would be required. However the following standard conditions measures are recommended.

**BIO-21**

During Project construction, all invasive plant species found on site shall be handled, transported, and disposed of off site by a qualified contractor to minimize the potential for spreading invasive species and/or their seeds off site. All plants and their seed pods shall be secured in such a manner that no contamination of native soils or natural areas would occur.

**BIO-22**

A qualified biologist shall monitor vegetation removal and construction along the undeveloped parcel between 15th Street East and 17th Street East. The biological monitor shall be on site at all times during the approximate seven-day vegetation clearing and construction period for this segment. The biological monitor will ensure that construction will stay within marked boundaries; that no disturbance of the ESA occurs; and that BMPs are functioning.
properly. The biological monitor will prepare weekly monitoring memos with site photographs for the duration of the monitoring effort in this segment; the weekly monitoring memos shall be submitted to the City of Palmdale.

**BIO-23**

Prior to construction, if new landscaping is proposed, landscape designs shall be submitted by a qualified biologist to the City of Palmdale for review and approval. The review shall determine that no invasive exotic plant species are to be used in any proposed landscaping. Suitable substitutes shall be recommended by the reviewing biologist. All mulch, topsoil, and seed mixes used during landscaping activities and all erosion-control BMPs that are implemented shall be free of invasive plant species propagules.

### 2.4 Cumulative Impacts

**Regulatory Setting**

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act (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 the National Environmental Policy Act (NEPA) can be
found in 40 Code of Federal Regulations (CFR), Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

**Affected Environment**

The cumulative analysis focuses on the resources that the Project may affect. If the Project would not result in impacts to a resource, it could not contribute to a cumulative impact. The resources identified for cumulative analysis include biological resources and land use/community resources.

The affected environment for each of these resources has been previously discussed in their respective portions of Chapter 2.

This analysis considers known projects identified on the City of Palmdale’s website. In addition, the long-term growth projections for the area and the update of the City of Palmdale Housing Element are used because they provide for future projects that would contribute to potential cumulative impacts.

The analysis also looked at whether there were any large projects that would have a greater potential to contribute to cumulative impacts. There are at least two regional scale projects in the study area—the High Desert Corridor Project and High Speed Rail Project—that are important for cumulative impacts, especially with respect to biological and community resources. Each of the cumulative projects has prepared or is in the process of preparing its own environmental document. The following projects have the greatest potential to influence cumulative impacts:

- **The High Desert Corridor (HDC) Project** proposes the construction of a new, approximate 63-mile, east-west freeway/expressway linking SR-14 in Los Angeles County with SR-18 in San Bernardino County. This new freeway/expressway connection would link some of the fastest residential, commercial and industrial growth areas in southern California, including the cities of Palmdale, Lancaster, Adelanto, Victorville, and the Town of Apple Valley. In addition to addressing the issue of growth, the HDC project will address traffic safety and will support the growing need to move goods through the region.

- **The proposed High Speed Rail System** stretches from San Francisco, Oakland, and Sacramento in the north—with service to the Central Valley—to Palmdale and Los Angeles, and eventually San Diego in the south.
• The Palmdale Power Plant will be located 1/3 of a mile south of Avenue M, east of Sierra Highway, adjacent to Air Force Plant 42. The plant is located in a more remote location to avoid direct impacts to communities.

• The Transportation Enhancement Project would provide a Caltrans District 7 Corridor Master Plan (CoMP) for the SR-14 corridor from I-5 on the south to the Kern County line on the north.

• The SR-14 Mainline Project from Rancho Vista Boulevard to Palmdale Boulevard proposes to relieve traffic congestion on SR-14 between Palmdale Boulevard and Rancho Vista Boulevard. It is intended to be an interim operational improvement project to relieve traffic congestion along the southbound mainline and northbound off-ramp to Rancho Vista Boulevard. Recommended improvements include a new southbound auxiliary lane from Rancho Vista Boulevard to Palmdale Boulevard and an additional storage lane to the northbound SR-14 off-ramp at Rancho Vista Boulevard.

• The SR-138 (Palmdale Boulevard) from 5th Street East to 10th Street East Improvement Project proposes to widen and restripe Palmdale Boulevard to three lanes in each direction from 5th Street East to 10th Street East along SR-138. Caltrans proposes to improve the queuing (traffic congestion) through the railroad tracks located between 6th Street East and Sierra Highway.

• The SR-14/Palmdale Boulevard Interchange Improvement Project will improve operation of the interchange by widening the SR-14 on- and off-ramps and by improving Palmdale Boulevard.

**Environmental Consequences**

The Project has existed as a major arterial, providing access to neighborhoods and community schools, for the past 30 years. The Palmdale area has experienced substantial growth over the past few decades which, based on growth projections, is expected to continue to grow steadily but not as rapidly as it did in the past. The Project is one of many infrastructure and private development projects proposed or under construction in the Project region. All these projects would contribute to the local and regional loss of native and non-native vegetation types in the Project region that provide habitat for special-status plant and wildlife species.

The Avenue R Safety Improvement Project’s contribution to the loss of plant and wildlife resources is relatively small. Based on the acreage of disturbance, the types of the habitat impacted, and the Project location in a suburban environment, the
contribution to cumulative impacts are considered minimal. Each of the cumulative projects are required to prepare environmental documentation, and mitigation measures would be incorporated as required to protect the species. For those projects where potential impacts to Threatened and Endangered species or sensitive habitat is identified, appropriate permits would be required, which also assesses the impacts in the larger regional context. The measures identified in Section 2.3, Biological Environment, would serve to avoid or minimize the Project’s direct impacts and its potential contribution to cumulative impacts. Therefore, no additional avoidance, minimization, and mitigation measures are proposed.

Construction of the Avenue R Safety Improvement Project is expected to begin in 2017 and be completed in 2018. Based on the anticipated construction schedules for the Project and the cumulative projects proposed in the city of Palmdale, residents in the Project area would not experience a prolonged inconvenience as a result of construction of these projects. Some of these projects would convert existing uses into transportation land uses and result in displacements of residents. The Avenue R Project would displace two businesses and six residences. Because there is an adequate number of replacement properties and because Project schedules do not substantially overlap, no conflict in availability and timing of replacement properties is expected to occur. Acquisition of residential properties associated with the Project would not impact other cumulative projects due to the availability of replacement properties to accommodate the relocated residents of the Project. The Project addresses a need of both the community and the General Plan in terms of providing safety features along Avenue R. These improvements would benefit the entire community along the Avenue R segment, not only local students. For these reasons, the Avenue R Safety Improvement Project’s contribution to cumulative impacts is not expected to be adverse.

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

There are no anticipated cumulative impacts from the resources identified above. Therefore, no avoidance, minimization, and/or mitigation measures are required.

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

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

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 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, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., 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 (such as 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**

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

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1. [http://climatechange.transportation.org/ghg_mitigation/](http://climatechange.transportation.org/ghg_mitigation/)
With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (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.

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

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

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

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

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

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

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

Executive Order (EO) B-30-15 (April 29, 2015). The goal of this EO is to set an “interim” statewide emission target to reduce greenhouse emissions to 40 percent below 1990 levels by 2030. This goal was implemented by Senate Bill 350. However, SB 350 was signed into law and (as discussed below) it requires the state to double energy efficiency savings in electricity and natural gas by retail customers by 2030 and raises the Renewable Portfolio Standard (RPS) so that half of the state’s electricity must be procured from renewable sources by 2030.

Senate Bill 350 (SB 350). Signed October 7, 2015, Clean Energy and Pollution Reduction Act of 2015, SB 350 is the implementation of some of the goals of EO B-30-15. The objectives of SB 350 are to increase (from 33 percent to 50 percent), the procurement of electricity from renewable sources and to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (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 will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.
The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

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

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

U.S. EPA’s authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing *Clean Air Act* and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court’s ruling, U.S. EPA finalized an *endangerment finding* in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court’s interpretation of the existing Act and EPA’s assessment of the scientific evidence that form the basis for EPA’s regulatory actions. U.S. EPA in conjunction with NHTSA issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.

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

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

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

The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama’s 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

**Project Analysis**

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG emissions. In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (State CEQA Guidelines, Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the 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.

The ARB approved the final “First Update to the Climate Change Scoping Plan” on May 22, 2014. The first update describes California’s progress towards AB 32 goals, stating that “California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32”. The first update recalculated the 1990 GHG emissions level and revised the target for reductions needed by 2020 based on a revised projection of “business as usual” emissions.

ARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target established in Executive Order B-30-15.

Figure 2-16 California Greenhouse Gas Forecast

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, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.
California Environmental Quality Act Air Greenhouse Gas Emissions Analysis

Generate Greenhouse Gas Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment

The Antelope Valley Air Quality Management District’s (AVAQMD’s) CEQA and Federal Conformity Guidelines includes a “Significant Emissions Threshold” for GHG emissions of 100,000 tons (90,718 metric tons [MT]) of carbon dioxide equivalent (MTCO₂e) per year. A project with emission rates below this value is considered to have a less than significant effect.

Construction GHG emissions were calculated with the Road Construction Emissions Model, version 7.1.5.1, as previously described in the air quality impacts section. Construction GHG emissions are estimated at 671 tons (609 MT) MTCO₂e. This value is substantially less than the AVAQMD significant emissions threshold. The impact would be less than significant; no mitigation is required.

The Project would not increase capacity, would not generate traffic, and would result in negligible changes in traffic volumes and speeds. There would be no change, or a negligible change, in GHG emissions and no potential for exceedance of AVAQMD significant emissions threshold. The long-term impact to GHG emissions would be less than significant.

Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

As discussed above, AB 32 and Executive Orders S-3-05 and B-30-15 are important State regulations or policies adopted for the purpose of reducing GHG emissions. Statewide plans and regulations, such as GHG emissions standards for vehicles and the Low Carbon Fuel Standard, are being implemented at the statewide level. Therefore, the Project does not conflict with these plans and regulations.

As discussed in Section 1.2 of this IS/EA, the purpose of the Project is to encourage increased walking and biking to schools; to reduce the number of idling vehicles picking up and dropping off school students; and to provide enhanced access to public transit. To the degree that each of these goals is achieved, there would be a reduction in the use of fossil-fueled vehicles, and the Project would contribute to a reduction in GHG emissions. The Project would support and not conflict with applicable plans and policies to reduce GHG emissions. There would be no impact and no mitigation is required.


**Greenhouse Gas Reduction Strategies**

**City of Palmdale**

The Palmdale Energy Action Plan was adopted by the City in August 2011. The City developed this Plan to achieve energy independence, energy efficiency, and conservation; to encourage land uses that reduce transportation time and costs; to encourage jobs-creation; and to identify strategies to increase investment in the local economy. The Plan identifies how the City will use energy efficiency and independence strategies to achieve its GHG emission reduction target of 15 percent by the year 2020 consistent with the State’s overall target to reduce GHG emissions statewide to 1990 levels by 2020. This Plan provides goals and measures focused on energy use, water use, transportation, land use, and solid waste to reduce GHG emissions wherever possible while enhancing the local economy and reducing reliance on inefficient energy imports.

The Palmdale Transit Oriented Development Overlay Zone Project is a City effort whose purpose is to evaluate a variety of land uses and modes of transportation in its project area and to prepare a plan that will provide multi-modal connectivity in the vicinity of the Palmdale Transportation Center (PTC) and future California High Speed Rail Station. The Project seeks to create a Transit Oriented Development (TOD) Overlay Zone to accommodate a variety of land uses and to encourage mixed use and higher density residential development within walking distance of the PTC. When developed, TOD projects would reduce vehicle travel and GHG emissions.

**Caltrans**

Caltrans continues to be involved on the Governor’s Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger’s Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in 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 2-17: The Mobility Pyramid.
Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks. Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. EPA and 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 Senate Bill (SB) 375 (Steinberg 2008), SB 391 (Liu 2009) requires the State’s long-range transportation plan to meet California’s climate change goals under AB 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California’s future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private
sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State’s transportation needs.

Table 31 summarizes Caltrans and statewide efforts that Caltrans is implementing to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

### Table 31    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>
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<td>Agency</td>
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<td>Local governments</td>
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<td>Regional Agencies</td>
<td>Caltrans</td>
<td>Regional plans and application process</td>
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<td>Strategic Growth Plan</td>
<td>Caltrans</td>
<td>Regions</td>
<td>State ITS; Congestion Management Plan</td>
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<td>Office of Policy Analysis &amp; Research; Division of Environmental Analysis</td>
<td>Interdepartmental effort</td>
<td>Policy establishment, guidelines, technical assistance</td>
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<td>Mainstream Energy &amp; GHG into Plans and Projects</td>
<td>Office of Policy Analysis &amp; Research</td>
<td>Interdepartmental, CalEPA, ARB, CEC</td>
<td>Analytical report, data collection, publication, workshops, outreach</td>
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<td>Educational &amp; Information</td>
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<td>Program</td>
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<td></td>
<td></td>
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<td>Department of General Services</td>
<td>Fleet Replacement</td>
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<td></td>
<td></td>
<td>0.0225</td>
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<td>Green Action Team</td>
<td>Energy Conservation Opportunities</td>
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<td>Cement and Construction Industries</td>
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<tr>
<td><strong>Total</strong></td>
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<td>2.72</td>
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Climate Change (June 22, 2012): is intended to establish Caltrans policy that will ensure coordinated efforts to incorporate climate change into Caltrans decisions and activities.

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

The avoidance and minimization measure GHG-1 will also be included in the Project to reduce the GHG emissions and potential climate change impacts from the Project.

**Adaptation Strategies**

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

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011, 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.

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3  [http://www.whitehouse.gov/administration/eop/eop/ceq/initiatives/adaptation](http://www.whitehouse.gov/administration/eop/eop/ceq/initiatives/adaptation)
Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California’s vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, State and federal public and private entities to develop The California Climate Adaptation Strategy (Dec 2009), 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 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the State’s adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Reports 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 surges, and land subsidence rates.

• The range of uncertainty in selected sea level rise projections.

• A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.

• A discussion of future research needs regarding sea level rise. 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 Academies Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surges, 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 from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The Project NOP was not filed prior to EO S-13-08, nor is the Project a routine maintenance project. However, the Project is located outside the coastal zone, and direct impacts to Project transportation facilities due to projected sea level rise are not expected.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess the vulnerability of transportation systems to sea level rise affecting safety; the maintenance and operational improvements of the system; and the state’s economy. Caltrans continues to work on assessing the transportation system’s 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 Mitigation Measures**

Avoidance, minimization and mitigation measure GHG-1 would be applicable.

**GHG-1**

The Project would incorporate the use of energy-efficient lighting. Existing traffic signals will be upgraded to use light-emitting diode (LED) bulbs, which consumes ten percent of the electricity of traditional lights, thereby reducing indirect carbon dioxide (CO₂) emissions.
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Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this Project have been accomplished through a variety of formal and informal methods, including Project development team meetings, interagency coordination meetings, and contact with property owners immediately adjacent to the Project alignment. This chapter summarizes the results of Caltrans’ and the City of Palmdale’s efforts to identify, address, and resolve Project-related issues through early and continuing coordination.

3.1 Agency Coordination

Project Development Team
Project Development Team meetings have been held during preparation of this Initial Study/Environmental Assessment (IS/EA). Project Development Team members include representatives from Caltrans District 7 and the City of Palmdale, along with members of the consultant team. The team discusses alternatives; design options; factors to be considered during the environmental study process; and scheduling issues.

Resources and Regulatory Agencies
Communication with California Department of Fish and Wildlife (CDFW) staff occurred throughout the preparation of the IS/EA regarding the potential for wildlife species to be present on the Project site; the timeline of surveys; and habitat suitability. In an email dated July 9, 2015, the CDFW (Scott Harris) concurred with the fact that Mohave ground squirrel is unlikely to occur within the Project footprint.

Technical Studies
During surveys, contact with the property owners surrounding the site was made when necessary. The City of Palmdale drafted a letter informing the community about the environmental surveys schedule. When approached, the letter was presented to the interested individual. As part of preparation of the noise analysis, focused contact and coordination was made with property owners at a number of locations immediately surrounding the Project limits for noise-monitoring purposes.
3.1.1 Public Outreach

**Historical Resources Outreach**

Through the preparation of the technical studies for cultural resources, a request was made to the Native American Heritage Commission (NAHC) for a review of the Sacred Lands Inventory to determine if any known cultural properties are present within or adjacent to the Area of Potential Effect. The NAHC responded on June 23, 2015, stating that no Native American cultural resources are known to exist within or adjacent to the Area of Potential Effect. In addition, the NAHC provided a list of individuals/organizations that may have knowledge of cultural resources in the Project area. These individuals were subsequently contacted on July 13, 2015. Of the individuals contacted, one responded with comments. The comments have been summarized in Attachment 2 of the Historic Property Survey Report. Contact was also made with the West Antelope Valley Historical Society, the Los Angeles County Historical Records and Landmarks Commission, the Palmdale City Library, the Antelope Valley Genealogical Society (AVGS), the Los Angeles Conservancy, and the Antelope Valley College Library.

The HPSR (ASR, HRER) was prepared and sent to the State Historic Preservation Office (SHPO) for concurrence. Caltrans determined in the HPSR that none of the properties affected by the Project are eligible for inclusion on the National Register of Historic Places. Caltrans drafted a Request for Concurrence letter and submitted the HPSR to SHPO on November 25, 2016. On December 15, 2015, SHPO responded to Caltrans’ letter with the findings of the HPSR and received concurrence on its “No Historic Properties Affected” finding, thus ending the Section 106 process. Refer to Appendix G for the SHPO concurrence letter.

**Outreach Pursuant to AB 52**

AB52, which went into effect on July 1, 2015 proposes to include tribal cultural resources in the CEQA analysis, and introduces a new class of resources: Tribal Cultural Resources. The Project was subject to the requirements of AB 52. As such, in addition to the initial Native American coordination, consultation under AB 52 was subsequently conducted. On September 29, 2015 NAHC send additional mail with the list of additional tribes for consultation pursuant to the AB52. The City of Palmdale as the CEQA lead agency prepared a mail out to tribes inviting the tribes listed on the NAHC Sacred Lands File search to consult with City. The City of Palmdale sent the letters to five tribes on October 26, 2015 thus fulfilling the obligations under AB52. No tribes responded.
Other Agency Contacts
As part of the preparation of the City grant approval for the Project, local agencies were contacted to voice their opinion towards this Project. These agencies include the County of Los Angeles Sheriff’s Department, the Los Angeles County Metropolitan Transportation Agency, Palmdale High School, the Antelope Valley Union High School District, and Palmdale School District. These letters are included in Appendix J.

Environmental Document Outreach Process
In addition to consultation with participating agencies, the IS/EA process includes public participation in the form of public review of the environmental document. The 30-day public review period extended from December 16, 2016 to January 17, 2017. A Notice of Availability that the environmental document was available for public review was published in a section of general readership in the Antelope Valley Press on December 16, 2017. In addition, the notice was published four times on Sunday 12/18/16, 12/25/16, 1/1/17, and 1/8/17.

The draft IS/EA was also posted on the City of Palmdale website at http://www.cityofpalmdale.org/Businesses/Public-Works/CIP.

Copies of the Notice of Availability were sent via U.S. mail to property owners within 300 feet of the project limits. As indicated in Chapter 1, copies of the environmental document were available for review at the Palmdale City Library at 700 East Palmdale Boulevard, Palmdale, and at Caltrans District 7, Division of Environmental Planning at 100 S. Mains Street, Los Angeles, and at the City of Palmdale (http://www.cityofpalmdale.org/Businesses/Public-Works/CIP).

Upon completion of the 30-day public review period, written responses to all significant environmental issues raised were prepared and are available prior to the hearings before the City Council. These environmental comments and their responses are included in Appendix K and are part of the environmental record for consideration by decision makers for the Project.
Chapter 3 • Comments and Coordination

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Chapter 4 List of Preparers

4.1 Caltrans Staff

Quint Chemnitz, Associate Environmental Planner, Local Assistance, Division of
Environmental Planning, District 7, Contribution: Environmental Document
Oversight

4.2 City of Palmdale Staff

This document was prepared by the following staff from the City:

Michael Livingston, Public Works Project Manager, Bachelor of Science,
Construction Management, East Carolina University; 21 years of construction
experience on Federal Aid/State Highway Projects. Contribution: Reviewed
the Initial Study/Environmental Assessment.

Lynn Glidden, Senior Civil Engineer, Public Works Department

4.3 Consultant Staff

This document was prepared by the following BonTerra Psomas staff:

Kathleen Brady, AICP, Principal of Technical Services; Bachelor of Science,
Sociology, University of California, Riverside; 34 years environmental
planning experience. Contribution: Principal-In-Charge, managed the
preparation of the Initial Study/Environmental Assessment (IS/EA).

Agnieszka Napiatek, Project Manager; Master of Science, Environmental Studies,
California State University, Fullerton; 10 years environmental planning
experience. Contribution: Prepared the IS/EA.

James Kurtz, Director, Air Quality and Acoustical Programs; Bachelor of Science,
Engineering, University of California, Los Angeles; 33 years of air quality
analysis experience and 25 years of noise analysis experience. Contribution:
Prepared the Air Quality Analysis and reviewed the Noise Analysis.

Patrick Maxon, M.A., RPA, Director, Cultural Resources; Master of Arts,
Anthropology, California State University, Fullerton; Registered Professional
Chapter 4 • List of Preparers

Archeologist; 22 years of cultural resources experience. Contribution: Reviewed the Cultural Resources Analysis.

Laura Wrenn, GIS Specialist; Bachelor of Science, Geography, University of Georgia, Athens; 5 years of professional GIS experience. Contribution: Created graphics for the IS/EA.

Jonathan A. Zimmer, Senior GIS Analyst; Masters of Advanced Studies in Geographical Information Systems, Arizona State University, Tempe; 7 years of professional GIS experience and 5 years of professional Remote Sensing experience. Contribution: Created graphics for the IS/EA.

Julia R. Black, Technical Writer; Bachelor of Arts, English, California State University, Fullerton; 14 years writing and editing experience. Contribution: Performed technical editing of the IS/EA.

Sheryl A. Kristal, Word Processor; 12 years word processing experience. Contribution: Formatted the IS/EA.
Chapter 5  Distribution List

The draft Initial Study/Environmental Assessment was distributed to the following agencies, elected officials, service providers, and utility companies. Paper copies and CDs were provided to the public libraries. In addition, a Notice of Availability of the document has been sent to adjacent property owners within 500 feet of the Project limits.

FEDERAL AGENCIES

U.S. Army Corps of Engineers
Project Planning Branch
915 Wilshire Boulevard
Los Angeles, CA 90017-3401

U.S. Fish and Wildlife Service
Pacific Southwest Region
Headquarters and Organization
2800 Cottage Way
Sacramento, CA 95825
Attn: Ren Loehefener

Assistant Field Supervisor
Palm Springs Fish and Wildlife Office
U.S. Fish and Wildlife Service
777 East Tahquitz Canyon Way
Suite 208
Palm Springs, CA 92262

California Department of Fish and
Wildlife, Region 5
3883 Ruffin Road
San Diego, CA 92123

California Department of Parks and
Recreation
Office of Historic Preservation
1416 9th Street, Room 1442
Sacramento, CA 95814

California Highway Patrol
2041 West Avenue I
Lancaster, CA 93534

STATE AGENCIES

State Clearinghouse
Office of Planning and Research
1400 10th Street
Sacramento, CA 95814-5502

California EPA
Connell Dunning
EPA Pacific Southwest Office Region 9
75 Hawthorne Street #ENF 4-2
San Francisco, CA, 94105

California Department of Parks and
Recreation
Office of Historic Preservation
1416 9th Street, Room 1442
Sacramento, CA 95814

Lahontan Regional Water Quality
Control Board
14440 Civic Center Drive, Suite 200
Victorville, CA 92392

Native American Heritage
Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

LOCAL/REGIONAL AGENCIES

South Coast Air Quality Management
District
21865 Copley Drive
Diamond Bar, CA 91765

County of Los Angeles
Regional Planning Department
320 W Temple Street, 13th Floor
Los Angeles, CA 90012
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012

Fire Chief – City of Palmdale
Los Angeles County Fire District
Station 37
38318 9th Street East
Palmdale, CA 93550

Palmdale School District
39139 10th Street East
Palmdale, CA 93550

Antelope Valley Transit Authority
42210 6th Street West
Lancaster, CA 93534

Palmdale High School
Antelope Valley Union High School District
2137 East Avenue R
Palmdale, California 93550

Union Pacific Railroad
1400 Douglas Street
Omaha, NE 68179

Palmdale Water District
2029 East Avenue Q
Palmdale, Ca 93550

PMDL
C/O City of Palmdale
Charlie Love
38250 Sierra Highway
Palmdale, CA 93550

Mci (Verizon Business)
Dean Boyers
2400 N Glenville Drive
Richardson, TX 75082

SC Gas – Lancaster
Erin Lewis
9400 Oakdale Avenue, Ml9331
Chatsworth, CA 91311

Sprint
Tibor Laky
2592 Dupont Drive
Irvine, CA 92612

Sunesys, LLC
Trent Horvath
226 N Lincoln Avenue
Corona, CA 92882

Level 3 Communications Substructure
John Trujillo
1025 Eldorado Boulevard,
Building 33a-522
Broomfield, CO  80021

Utiliiquest For SC Edison – Telecomm
Kim Gurule
PO Box 11982
Santa Ana, CA 92711

City of Palmdale
Development Services Director
38250 Sierra Highway
Palmdale, CA 93550

Wilcon
Wilshire Connection LLC
Noc
624 S Grand Avenue, Suite 1200
Los Angeles, CA 90017

Fire Chief Daryl Osby
Los Angeles County Fire Department
1320 N Eastern Avenue
Los Angeles, CA 90063

LIBRARIES
Palmdale City Library
700 E Palmdale Boulevard
Palmdale, CA 93550
Notices of availability were sent to elected officials, service providers, utility companies and adjacent property owners within the surrounding area. The Notice of Availability provided information on the location of the document or how to download the document from the City website.

**ELECTED OFFICIALS**

Representative Stephen Knight  
25th District  
1008 West Avenue M-14, Suite E  
Palmdale, CA 93551

Representative Judy Chu  
27th District  
527 S Lake Avenue, Suite 106  
Pasadena, CA 91101

Senator Barbara Boxer  
312 N Spring Street, Suite 1748  
Los Angeles, CA 90012

Senator Dianne Feinstein  
11111 Santa Monica Boulevard, Suite 915  
Los Angeles, CA 90025

State Senator Sharon Runner  
21st District  
848 W Lancaster Boulevard, Suite 101  
Lancaster, CA 93534

Assembly Member Tom Lackey  
36th District  
41319 12th Street West, Suite 105  
Palmdale, CA 93551

**UTILITIES**

City of Palmdale  
Public Works Department  
38300 Sierra Highway  
Palmdale, CA 93550

**ORGANIZATIONS**

West Antelope Valley Historical Society  
P.O. Box 1972  
Lancaster, CA 93539

Laura Dominguez, Preservation Coordinator  
Los Angeles Conservancy  
523 West 6th Street, Suite 826  
Los Angeles, CA 90014

Los Angeles County Historical Records and Landmarks Commission  
500 West Temple Street, Room B-50  
Los Angeles, CA 90012

Antelope Valley Genealogical Society  
P.O. Box 1049  
Lancaster, CA 93584

**NATIVE AMERICAN REPRESENTATIVES**

Daniel McCarthy, M.S., Director CRM Department  
San Manuel Band of Mission Indians  
26569 Community Center Drive  
Highland, CA 92346

Lynn Valbuena, Chairwoman  
San Manuel Band of Mission Indians  
26569 Community Center Drive  
Highland, CA 92346
John Valenzuela, Chairperson
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, CA 91322

Delia Dominguez, Chairperson,
Kitanemuk & Yowlumne Tejon Indians
115 Radio Street
Bakersfield, CA 93305

Rudy Ortega Jr., President,
Fernandeño Tataviam Band of Mission Indians
1019 2nd Street,
San Fernando, CA 91340
Appendix A  California Environmental Quality Act Checklist

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

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Initial Study/Environmental Assessment. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2.
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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>I. AESTHETICS</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) Have a substantial adverse effect on a scenic vista</td>
<td></td>
<td></td>
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<td>❌</td>
</tr>
<tr>
<td>b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway</td>
<td></td>
<td></td>
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<td>❌</td>
</tr>
<tr>
<td>c) Substantially degrade the existing visual character or quality of the site and its surroundings?</td>
<td></td>
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<td></td>
<td>❌</td>
</tr>
<tr>
<td>d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?</td>
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</tr>
</tbody>
</table>

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

| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | | | | ❌ |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | | | | ❌ |
### Appendix A • California Environmental Quality Act Checklist

- **Avenue R Safety Improvement Project**

| 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))? |
|---|---|---|---|---|
| Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| ☐ | ☐ | ☐ | ☒ |

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

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

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

| a) Conflict with or obstruct implementation of the applicable air quality plan? |
|---|---|---|---|
| ☐ | ☐ | ☐ | ☒ |

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

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

| d) Expose sensitive receptors to substantial pollutant concentrations? |
|---|---|---|---|
| ☐ | ☐ | ☒ | ☐ |

| e) Create objectionable odors affecting a substantial number of people? |
|---|---|---|---|
| ☐ | ☐ | ☒ | ☐ |

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

| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? |
|---|---|---|---|
| ☐ | ☐ | ☒ | ☐ |

| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? |
|---|---|---|---|
| ☐ | ☒ | ☐ | ☐ |
Appendix A • California Environmental Quality Act Checklist

<table>
<thead>
<tr>
<th>Question</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</thead>
<tbody>
<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>
<td>☐</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>
<td>☐</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>
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</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? | ☐                             | ☒                                    | ☐                          | ☒         |

iii) Seismic-related ground failure, including liquefaction? | ☐                             | ☒                                    | ☐                          | ☒         |
Appendix A • California Environmental Quality Act Checklist

<table>
<thead>
<tr>
<th>iv) Landslides?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<th>b) Result in substantial soil erosion or the loss of topsoil?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<th>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?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<th>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?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<th>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?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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VII. GREENHOUSE GAS EMISSIONS: Would the project:

<table>
<thead>
<tr>
<th>a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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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.

<table>
<thead>
<tr>
<th>b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

<table>
<thead>
<tr>
<th>a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<th>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?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<table>
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<tr>
<th>c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<td><strong>Appendix A • California Environmental Quality Act Checklist</strong></td>
<td>Potentially Significant Impact</td>
<td>Less Than Significant with Mitigation</td>
<td>Less Than Significant Impact</td>
<td>No Impact</td>
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<td>---------------------------------------------------------------</td>
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<tr>
<td>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?</td>
<td>☑</td>
<td>☑</td>
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</tr>
<tr>
<td>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?</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
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</tr>
<tr>
<td>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?</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>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?</td>
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</table>

**IX. HYDROLOGY AND WATER QUALITY**: 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) Violate any water quality standards or waste discharge requirements?</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>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)?</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>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?</td>
<td>☑</td>
<td>☑</td>
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</tr>
<tr>
<td>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?</td>
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<td>☑</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>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?</td>
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<tr>
<td>f) Otherwise substantially degrade water quality?</td>
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</table>
Appendix A • California Environmental Quality Act Checklist

| 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? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| 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? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| j) Inundation by seiche, tsunami, or mudflow | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |

X. LAND USE AND PLANNING: Would the project:

| a) Physically divide an established community? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| 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? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |

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? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| 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? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |

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? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
### Appendix A - California Environmental Quality Act Checklist

<table>
<thead>
<tr>
<th>d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<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 expose people residing or working in the project area to excessive noise levels?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<thead>
<tr>
<th>) 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?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
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### XIII. POPULATION AND HOUSING: Would the project:

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<tr>
<th>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)?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<th>b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<th>c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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### XIV. PUBLIC SERVICES:

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<th>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:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tbody>
<tr>
<td>Fire protection?</td>
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<td>Police protection?</td>
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<td>Schools?</td>
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<tr>
<td>Parks?</td>
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<tr>
<td>Other public facilities?</td>
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<table>
<thead>
<tr>
<th>Impact Level</th>
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<tbody>
<tr>
<td>Potentially Significant Impact</td>
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<td>Less Than Significant with Mitigation</td>
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<tr>
<td>Less Than Significant Impact</td>
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<tr>
<td>No Impact</td>
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</table>

**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?  
\[ \square \quad \square \quad \square \quad \square \quad \checkmark \]

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?  
\[ \square \quad \square \quad \square \quad \square \quad \checkmark \]

**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?  
\[ \square \quad \square \quad \square \quad \square \quad \checkmark \]

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?  
\[ \square \quad \square \quad \square \quad \square \quad \checkmark \]

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?  
\[ \square \quad \square \quad \square \quad \square \quad \checkmark \]

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?  
\[ \square \quad \square \quad \square \quad \square \quad \checkmark \]

e) Result in inadequate emergency access?  
\[ \square \quad \square \quad \square \quad \square \quad \checkmark \]

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?  
\[ \square \quad \square \quad \square \quad \square \quad \checkmark \]
### 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
- b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe

### XVIII. UTILITIES AND SERVICE SYSTEMS:

Would the project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
- g) Comply with federal, state, and local statutes and regulations related to solid waste?
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? [No] [No] [✓] [No]

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? [No] [No] [No] [✓]

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? [No] [No] [No] [✓]
Appendix B  Resources Relative to the Requirements of Section 4(f)

1.0 RESOURCES EVALUATED RELATIVE TO THE REQUIREMENTS OF SECTION 4(f)

All archaeological and historic sites within the Section 106 Area of Potential Effects (APE) and all public and private parks, recreational facilities, and wildlife refuges within approximately 0.5 mile of any of the Project alternatives should be analyzed to determine whether they are protected Section 4(f) resources and whether the Project would “use” the properties. If there are potential Section 4(f) resources in the Project vicinity, but they are not eligible for protection under Section 4(f) and/or if the Project does not “use” them, follow the guidance below and include an appendix entitled “Resources Evaluated Relative to the Requirements of Section 4(f).”

This section of the document discusses parks, recreational facilities and school playgrounds found within or adjacent to the Project area that do not trigger Section 4(f) protection either because (1) they are not publicly owned; (2) they are not open to the public; (3) they are not eligible historic properties; (4) the Project does not permanently use the property and does not hinder the preservation of the property; or (5) the proximity impacts do not result in constructive use.

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 the United States Code (USC, specifically Title 23, Part 327).

2.0 INTRODUCTION

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 USC 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” Section 4(f) specifies that the Secretary (of Transportation) may approve a transportation program or Project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance or land on a historic site of national, State, or local significance (as determined by the federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if the following occur:
• There is no prudent or feasible alternative to using that land and
• The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

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

3.0 DESCRIPTION OF THE PROJECT

3.1 Build Alternative (Preferred Alternative)
The Build Alternative (Preferred Alternative) would eliminate sidewalk gaps to provide a safer environment for pedestrians. It would widen Avenue R to construct a Class II bike lane on both sides of the street. A two-way left-turn lane would also be constructed at mid-block. The Supplemental Area of Potential Effects (APE) includes all areas of potential direct and indirect effects where improvements would be made. No major impacts to land use types are expected. The Project will require full acquisition of 9 parcels and partial acquisition of 39 parcels (discussed in Section 2.1.3.2). These parcels are designated as Commercial Manufacturing and Medium and Single-Family Residential on the General Plan Land Use map. As a result of the acquisitions, the land adjacent to Avenue R would be permanently converted from the existing land use types to transportation right-of-way (i.e., sidewalks and bike lane). The Project would be consistent with the General Plan, which designates Avenue R as a major arterial in the Palmdale General Plan’s Circulation Element. The removal of the residential and business use on the parcels being acquired would not result in a land use incompatibility with surrounding uses, nor would it encourage a transition of surrounding areas to uses inconsistent with the General Plan. No other land use impacts would occur.

3.2 No-Build Alternative
With the No-Build Alternative, there would be no improvements to Avenue R.
4.0 PURPOSE AND NEED

4.1 Purpose
The Project’s purpose is to provide a safer roadway for local students by improving Avenue R with an additional center two-way left-turn lane and a dedicated Class II bike lane; by closing sidewalk gaps; and by constructing bus turnouts along the Project segment. By connecting gaps in the sidewalk and bicycle facilities, the Project will encourage school children and commuters to use this form of active transportation. A full length sidewalk would provide connectivity, consistency and mobility, particularly to school children on both sides of Avenue R.

The purpose of the Project is to:

- Provide services to students within 1.5 miles of schools not served by existing bus service to engage in safe walking and biking.
- Improve safety for pedestrians (students) and bicyclists along Avenue R.
- Complete sidewalk gaps and provide ladder-style crosswalks and bus turnouts to provide enhanced access to public transit.
- Provide a Class II Bike Lane along the Project segment.
- Reduce the number of idling vehicles picking up and dropping of school students.

4.2 Need
The Palmdale School District cannot afford to bus all students and, currently, to reduce busing, students within 1.5 miles of the school are forced to either walk, ride a bicycle, arrange for personal transportation to school. Avenue R in the Project area is currently a four-lane (two lanes in each direction) arterial with limited sidewalks and limited room for bike lanes, which has resulted in a number of vehicle collisions with pedestrians and bicyclists. Along the Project segment, there are also numerous locations where the sidewalk and shoulder do not exist, forcing pedestrians to walk either on an uneven surface or without existing roadway lanes. This creates a less than optimal environment for pedestrians, including students walking to school. The City General Plan recognizes that the sidewalk systems in the City are discontinued and need improvement. Currently, a designated Class II bike lane exists east and west of the Project limits, and the Project is designed to close this gap. By connecting gaps in bicycle facilities, the Project will encourage school children and commuters to use this form of active transportation.
The majority of the Project study area is developed with some scattered vacant parcels. Land uses in the Project study area include commercial, public (schools, churches), parking lots, and residential.

5.0 DESCRIPTION OF PROPERTIES EVALUATED RELATIVE TO THE REQUIREMENTS OF SECTION 4(F)

5.1 Parks

This evaluation considered publicly owned recreational resources within ½ mile of the Project site. There are no qualifying wildlife and waterfowl refuges or historic sites that would trigger the requirements under Section 4(f) protection. The resources considered include parks, schools, and bike lanes that exist in the Project study area.

5.1.1 Melville J. Courson Park

Melville J. Courson Park is located at the corner of 10th Street East and Avenue Q-12, 0.25 mile north of the Project site. This park covers 7.5 acres and is developed with a swimming pool/pool building, 2 lighted basketball courts, a lighted sand volleyball court, 2 play lots, a spray pool, a fieldhouse with restrooms and equipment checkout, a gazebo, and picnic areas. The Parks and Recreation office building and a multipurpose activity building is located next to the park. The Palmdale Senior Center is located across the street at the corner of Avenue Q-12 and 10th Street East. The park uses include children’s day camps and swimming activities.

5.1.2 William J. McAdam Park

William J. McAdam Park is located at 38115 30th Street East, 0.44 mile east of the Project site. This park covers 20 acres and is developed with a swimming pool/pool building, 4 tennis courts, 2 lighted softball fields, a 4-acre playing field, a play lot, picnic shelters, a lighted volleyball court, and 3 horseshoe pits. The historic Leona Valley School house was relocated to this park. In addition, the Domenic Massari Lilac Garden is located at the south side of the park.

5.1.3 Pontician Square

Another city park located within 0.5 mile of the Project site is Pontician Square. Pontician Square is part of the City Hall complex and is located at 38315 9th Street East, 0.4 mile north of the Project site. This recreational area covers four acres and is developed with a fountain and gazebo. The Larry Chimbole Cultural Center is located next to this area. This park includes space for wedding ceremonies, reception photos, and other intimate gatherings.
5.2 Schools

5.2.1 Tumbleweed Elementary School
Tumbleweed Elementary School is part of the Palmdale Elementary School District and is located at 1100 East Avenue R-4. It is 0.26 mile south of the Project site and covers 12.7 acres of land; it is developed with a playground and field. Facilities are available for play during non-school hours. This school serves approximately 1,142 students.

5.2.2 The Palmdale Aerospace Academy
The Palmdale Aerospace Academy is part of the Palmdale Elementary School District and is located at 38060 20th Street East. It is 0.15 mile north of the Project site. This facility provides afterschool activities that emphasizes science, technology, engineering, and mathematics and serves approximately 729 students.

5.2.3 Palm Tree Elementary School
Palm Tree Elementary School is part of the Palmdale Elementary School District and is located at 326 E Avenue R. It is 0.48 mile southwest of the Project site. It is developed with a dirt playground. Facilities are available for play during non-school hours. This school serves approximately 861 students.

5.2.4 Desert Rose Elementary School
Desert Rose Elementary School is part of the Palmdale Elementary School District and is located at 37730 27th Street East. It is 0.30 mile south of the Project site. It is developed with a playground and small field. Facilities are available for play during non-school hours. This school serves approximately 1,167 students.

5.2.5 Palmdale High School
Palmdale High school is part of the Antelope Valley Union High School District and is located at 2137 East Avenue R. It is 0.13 mile north of the Project site. It is developed with a track, a football field, tennis courts, and an indoor gym. This school serves approximately 3,072 students.

5.3 Bicycle Facilities
According to the City of Palmdale Bikeway and Multi-Purpose Trail Plan, three types of bike lanes exit within the Project limits.

- Class I Bikeway (Off-Street Paved Bike Paths): Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with
crossflow by motorists minimized. A Class I bikeway is located in the Avenue R right-of-way and extends between 6th Street East and Sierra Highway.

- **Class II Bikeway (On-Street Striped and Signed Bicycle Lanes):** Provides a striped lane for one-way bike travel on a street or highway. A Class II bikeway is located on 10th Street East and extends between Avenue R and East Avenue R-4.

- **Class III Bikeway (On-Street Shared-Lane Signed Bicycle Routes):** Provides for shared pedestrian and motor vehicle traffic use. A Class III bikeway is located on Palm Vista Avenue and extends between Avenue R and East Avenue R-4.

Avenue R is designated as an adopted Master Plan Route for bike movement; however, no continuous bike lane exists within the Project limits. A Class II bicycle lane extends east and west of the Project limits, thus creating a gap within the Project segment.

### 6.0 IMPACTS ON PROPERTIES EVALUATED PURSUANT TO SECTION 4(F)

#### 6.1 Build Alternative (Preferred Alternative)

The Project would not require any right-of-way from parks, schools, or other recreational facilities; therefore it would not have any direct or indirect impacts. There would be no direct views, alteration of access to the facilities, or increase in noise levels that could change the character or use of the existing facilities. Since no publicly owned recreational facilities or lands would be affected, no Section 4(f) resources would be affected for this Project.

#### 6.1.1 Recreational Parks

6.1.1.1 **Melville J. Courson Park**

The Project would not require any right-of-way from Melville J. Courson Park, nor would it have any direct impacts on the park site. The Build Alternative (Preferred Alternative) would not impede the ability to access this park’s recreational facilities or other amenities. The Project would not result in any proximity impacts (constructive use) or other impacts such as increased noise, change in physical character, or air quality changes due to the park’s distance from the roadway. Additionally, the Project would not result in the increased use of the park. Implementation of the Build Alternative (Preferred Alternative) would not result in an impact that would impair the use, activities, features, or attributes of this park. As a
result, Melville J. Courson Park does not trigger the requirements for protection under Section 4(f) in the context of this Project.

6.1.1.2 William J. McAdam Park
The Project would not require any right-of-way from William J. McAdam Park, nor would it have any direct impacts on the park site. The Build Alternative (Preferred Alternative) would not impede the ability to access this park’s recreational facilities or other amenities. The Project would not result in any proximity impacts (constructive use) or other impacts such as increased noise, change in physical character, or air quality changes due to the distance of the park from the roadway. Additionally, the Project would not result in the increased use of the park. Implementation of the Build Alternative (Preferred Alternative) would not result in an impact that would impair the use, activities, features, or attributes of this park. As a result, the William J. McAdam Park does not trigger the requirements for protection under Section 4(f) in the context of this Project.

6.1.1.3 Pontician Square
The Project would not require any right-of-way from Pontician Square, nor would it have any direct impacts on the park site. The Build Alternative (Preferred Alternative) would not impede the ability to access the recreational facilities or other park amenities. The Project would not result in any proximity impacts (constructive use) or other impacts such as increased noise, change in physical character, or air quality changes due to the distance of the park from the roadway. Additionally, the Project would not result in increased use of the park. Implementation of the Build Alternative (Preferred Alternative) would not result in an impact that would impair the use, activities, features, or attributes of this park. As a result, Pontician Square does not trigger the requirements for protection under Section 4(f) in the context of this Project.

6.1.2 Schools
6.1.2.1 Tumbleweed Elementary School
The Project would not require any right-of-way from Tumbleweed Elementary School, nor would it have any direct impacts on the school’s property. When considering proximity impacts (e.g., noise, air, access) that result in constructive use, Caltrans recognizes that, in order for a project’s proximity impacts to lead to constructive use, these impacts would need to be so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) would become “substantially impaired”. The Federal Highway Administration
(FHWA) has determined that a constructive use does not occur when the following are present:

- The projected traffic noise levels of the proposed project on noise-sensitive Section 4(f) activities do not exceed the FHWA noise abatement criteria (NAC) described in 23 CFR 772, or if the projected noise levels exceed the NAC but the increase is barely perceptible (3 A-weighted decibels [dBA] or less),
- The combined proximity impacts do not substantially impair the characteristics that qualify the property for protection under Section 4(f),
- A change to access will not substantially diminish the use of the property.

The Build Alternative (Preferred Alternative) would not impede the ability to access the school or its play fields. The Project proposes improvements to the sidewalk, the crosswalk, and the curb ramp at the 11th Street East and East Avenue R-4 intersection within the City’s right-of-way to provide a safer environment for the pedestrians traveling toward and students of Tumbleweed Elementary School. All of these improvements would occur outside the school’s right-of-way. The Project would not result in any proximity impacts (constructive use) or other impacts such as increased noise, change in physical character, air quality changes, or a change in access that would diminish the use of the property (See Section 2.1.5, Air Quality, and Section 2.1.6 Noise). Implementation of the Build Alternative (Preferred Alternative) would not result in an impact that would impair the use, activities, features, or attributes of the school’s playgrounds. As a result, Tumbleweed Elementary School does not trigger the requirements for protection under Section 4(f) in the context of this Project.

6.1.2.2 The Palmdale Aerospace Academy

The Project would not require any right-of-way from the Palmdale Aerospace Academy, nor would it have any direct impacts on the academy’s property. The Build Alternative (Preferred Alternative) would not impede the ability to access the academy’s playground. The Project would not result in any proximity impacts (constructive use) or other impacts such as increased noise, change in physical character, or air quality changes (See Section 2.1.5, Air Quality, and Section 2.1.6, Noise). Implementation of the Build Alternative would not result in an impact that would impair the use, activities, features, or attributes of the academy’s playgrounds. As a result, the Palmdale Aerospace Academy does not trigger the requirements for protection under Section 4(f) in the context of this Project.
6.1.2.3 Palm Tree Elementary School
The Project would not require any right-of-way from Palmdale Tree Elementary School, nor would it have any direct impacts on the school’s property. The Build Alternative (Preferred Alternative) would not impede the ability to access the school’s playgrounds. The Project would not result in any proximity impacts (constructive use) or other impacts such as increased noise, change in physical character, or air quality changes due to distance from the Project (See Section 2.1.5, Air Quality, and Section 2.1.6, Noise). Implementation of the Build Alternative (Preferred Alternative) would not result in an impact that would impair the use, activities, features, or attributes of the school’s playgrounds. As a result, Palmdale Tree Elementary School does not trigger the requirements for protection under Section 4(f) in the context of this Project.

6.1.2.4 Desert Rose Elementary School
The Project would not require any right-of-way from Desert Rose Elementary School, nor would it have any direct impacts on the school’s property. The Build Alternative (Preferred Alternative) would not impede the ability to access the school’s playgrounds. The Project would not result in any proximity impacts (constructive use) or other impacts such as increased noise, change in physical character, or air quality changes due to distance from the Project (See Section 2.1.5, Air Quality, and Section 2.1.6, Noise). Implementation of the Build Alternative (Preferred Alternative) would not result in an impact that would impair the use, activities, features, or attributes of the school’s playgrounds. As a result, Desert Rose Elementary School does not trigger the requirements for protection under Section 4(f) in the context of this Project.

6.1.2.5 Palmdale High School
The Project would not require any right-of-way from Palmdale High School, nor would it have any direct impacts on the school’s property. The Build Alternative (Preferred Alternative) would not impede the ability to access the school playgrounds. The Project would not result in any proximity impacts (constructive use) or other impacts such as increased noise, change in physical character, or air quality changes due to distance from the Project (See Section 2.1.5, Air Quality, and Section 2.1.6, Noise). Implementation of the Build Alternative (Preferred Alternative) would not result in an impact that would impair the use, activities, features, or attributes of the school’s playgrounds. As a result, Palmdale High School does not trigger the requirements for protection under Section 4(f) in the context of this Project.
6.1.3 Bicycle Facilities
The Build Alternative (Preferred Alternative) would provide a continuous bike lane that would allow students to safely move from their residences to local schools. In addition, the Build Alternative (Preferred Alternative) would complete sidewalk gaps and provide ladder-style crosswalks to enhance pedestrian walkability and mobility. By connecting gaps in the sidewalk and bicycle facilities, the Project will encourage school children and commuters to use this form of active transportation. As a result of the Project improvements, the overall community connectivity and safety would be improved. Thus, this Project does not trigger the requirements for protection under Section 4(f).

6.2 No-Build Alternative
The No-Build Alternative does not propose any improvements or any physical changes; therefore, it would not impact parks, school playgrounds, or recreational facilities. However, it would not provide a continuous sidewalk or safe pedestrian crossings from the local residences to each school and it would not improve safety along Avenue R.

7.0 AVOIDANCE ALTERNATIVES
No impacts were identified. Therefore, no avoidance alternative is required.

8.0 MEASURES TO MINIMIZE HARM
No impacts were identified. Therefore, no minimization measures are required.

9.0 COORDINATION
Construction of the Project will likely be phased and limited to a block length at a time to minimize construction-related impacts. A Traffic Management Plan (TMP) will be prepared during the Plans, Specifications, and Estimates Phase that establishes the framework for proper coordination with emergency service providers to ensure that these service providers are notified of construction activities and any expected traffic shifts. With implementation of the plan, short-term, construction-related impacts to emergency service providers would not be substantial.
Appendix C  Summary of Relocation Benefits

California Dept. of Transportation Relocation Assistance Program

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 Code of Federal Regulations (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 Law (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 displacees 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-
Appendix C • Summary of Relocation Benefits

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. 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 displacees 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 displacees 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 displacees 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 the Department obtains control of the property in order to be eligible for relocation payments.

Purchase 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. The maximum combination of these three supplemental payments that the owner-occupant can receive is $31,000. If the total entitlement (without the moving payments) is in excess of $31,000, the Last Resort Housing Program will be used (see the explanation of the Last Resort Housing Program below).
Appendix C • Summary of Relocation Benefits

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. The maximum amount payable to any eligible tenant and any owner-occupant of less than 90 days, in addition to moving expenses, is $7,200. If the total entitlement for rent supplement exceeds $7,200, the Last Resort Housing Program will be used.

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 the Department 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 owner-occupants of less than 90 days and tenants in legal occupancy prior to Caltrans’ initiation of negotiations. The down payment and incidental expenses cannot exceed the maximum payment of $7,200. 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, or when the anticipated replacement housing payments exceed the $31,000 and $7,200 limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.
After the initiation of negotiations, Caltrans will within a reasonable length of time, personally contact the displacees 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.
- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred.
Appendix C • Summary of Relocation Benefits

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 that 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 law, except for any federal law providing local “Section 8” Housing Programs.

Any person, business, farm or nonprofit organization that 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. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a public project. 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.
Appendix D  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 E  Emissions Calculations
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# Emission Estimates for Palmdale Avenue R

## Project Phases (English Units)

<table>
<thead>
<tr>
<th>Project Phases</th>
<th>ROG (lbs/day)</th>
<th>CO (lbs/day)</th>
<th>NOx (lbs/day)</th>
<th>Total PM10 (lbs/day)</th>
<th>Exhaust PM10 (lbs/day)</th>
<th>Fugitive Dust PM10 (lbs/day)</th>
<th>Total PM2.5 (lbs/day)</th>
<th>Exhaust PM2.5 (lbs/day)</th>
<th>Fugitive Dust PM2.5 (lbs/day)</th>
<th>CO2 (lbs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grubbing/Land Clearing</td>
<td>2.5</td>
<td>16.5</td>
<td>20.3</td>
<td>16.0</td>
<td>1.0</td>
<td>15.0</td>
<td>4.0</td>
<td>0.9</td>
<td>3.1</td>
<td>3,089.2</td>
</tr>
<tr>
<td>Grading/Excavation</td>
<td>9.3</td>
<td>55.2</td>
<td>89.7</td>
<td>19.5</td>
<td>4.5</td>
<td>15.0</td>
<td>7.2</td>
<td>4.1</td>
<td>3.1</td>
<td>11,475.7</td>
</tr>
<tr>
<td>Drainage/Utilities/Sub-Grade</td>
<td>5.8</td>
<td>34.1</td>
<td>48.4</td>
<td>17.8</td>
<td>2.8</td>
<td>15.0</td>
<td>5.6</td>
<td>2.5</td>
<td>3.1</td>
<td>6,543.9</td>
</tr>
<tr>
<td>Paving</td>
<td>3.2</td>
<td>20.3</td>
<td>24.0</td>
<td>1.6</td>
<td>1.6</td>
<td>-</td>
<td>1.4</td>
<td>1.4</td>
<td>-</td>
<td>3,645.8</td>
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</table>

### Maximum (pounds/day)

<table>
<thead>
<tr>
<th>Project Phases</th>
<th>ROG (lbs/day)</th>
<th>CO (lbs/day)</th>
<th>NOx (lbs/day)</th>
<th>Total PM10 (lbs/day)</th>
<th>Exhaust PM10 (lbs/day)</th>
<th>Fugitive Dust PM10 (lbs/day)</th>
<th>Total PM2.5 (lbs/day)</th>
<th>Exhaust PM2.5 (lbs/day)</th>
<th>Fugitive Dust PM2.5 (lbs/day)</th>
<th>CO2 (lbs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grubbing/Land Clearing</td>
<td>9.3</td>
<td>55.2</td>
<td>89.7</td>
<td>19.5</td>
<td>4.5</td>
<td>15.0</td>
<td>7.2</td>
<td>4.1</td>
<td>3.1</td>
<td>11,475.7</td>
</tr>
<tr>
<td>Grading/Excavation</td>
<td>9.3</td>
<td>55.2</td>
<td>89.7</td>
<td>19.5</td>
<td>4.5</td>
<td>15.0</td>
<td>7.2</td>
<td>4.1</td>
<td>3.1</td>
<td>11,475.7</td>
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<tr>
<td>Drainage/Utilities/Sub-Grade</td>
<td>5.8</td>
<td>34.1</td>
<td>48.4</td>
<td>17.8</td>
<td>2.8</td>
<td>15.0</td>
<td>5.6</td>
<td>2.5</td>
<td>3.1</td>
<td>6,543.9</td>
</tr>
<tr>
<td>Paving</td>
<td>3.2</td>
<td>20.3</td>
<td>24.0</td>
<td>1.6</td>
<td>1.6</td>
<td>-</td>
<td>1.4</td>
<td>1.4</td>
<td>-</td>
<td>3,645.8</td>
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</tbody>
</table>

**Total (tons/construction project)**

<table>
<thead>
<tr>
<th>Project Phases</th>
<th>ROG (lbs/day)</th>
<th>CO (lbs/day)</th>
<th>NOx (lbs/day)</th>
<th>Total PM10 (lbs/day)</th>
<th>Exhaust PM10 (lbs/day)</th>
<th>Fugitive Dust PM10 (lbs/day)</th>
<th>Total PM2.5 (lbs/day)</th>
<th>Exhaust PM2.5 (lbs/day)</th>
<th>Fugitive Dust PM2.5 (lbs/day)</th>
<th>CO2 (lbs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.6</td>
<td>3.4</td>
<td>5.0</td>
<td>1.7</td>
<td>0.3</td>
<td>1.4</td>
<td>0.5</td>
<td>0.2</td>
<td>0.3</td>
<td>670.8</td>
</tr>
</tbody>
</table>

### Notes:

- Project Start Year: 2018
- Project Length (months): 9
- Total Project Area (acres): 10
- Maximum Area Disturbed/Day (acres): 2
- Total Soil Imported/Exported (yd³/day): 42

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

---

## Project Phases (Metric Units)

<table>
<thead>
<tr>
<th>Project Phases</th>
<th>ROG (kgs/day)</th>
<th>CO (kgs/day)</th>
<th>NOx (kgs/day)</th>
<th>Total PM10 (kgs/day)</th>
<th>Exhaust PM10 (kgs/day)</th>
<th>Fugitive Dust PM10 (kgs/day)</th>
<th>Total PM2.5 (kgs/day)</th>
<th>Exhaust PM2.5 (kgs/day)</th>
<th>Fugitive Dust PM2.5 (kgs/day)</th>
<th>CO2 (kgs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grubbing/Land Clearing</td>
<td>1.2</td>
<td>7.5</td>
<td>9.2</td>
<td>7.3</td>
<td>0.4</td>
<td>6.8</td>
<td>1.8</td>
<td>0.4</td>
<td>1.4</td>
<td>1,404.2</td>
</tr>
<tr>
<td>Grading/Excavation</td>
<td>4.2</td>
<td>25.1</td>
<td>40.8</td>
<td>8.9</td>
<td>2.1</td>
<td>6.8</td>
<td>3.3</td>
<td>1.9</td>
<td>1.4</td>
<td>5,216.2</td>
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<tr>
<td>Drainage/Utilities/Sub-Grade</td>
<td>2.7</td>
<td>15.5</td>
<td>22.0</td>
<td>8.1</td>
<td>1.3</td>
<td>6.8</td>
<td>2.6</td>
<td>1.1</td>
<td>1.4</td>
<td>2,974.5</td>
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<tr>
<td>Paving</td>
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<td>9.2</td>
<td>10.9</td>
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<td>0.7</td>
<td>-</td>
<td>0.6</td>
<td>0.6</td>
<td>-</td>
<td>1,657.2</td>
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</table>

### Maximum (kilograms/day)

<table>
<thead>
<tr>
<th>Project Phases</th>
<th>ROG (kgs/day)</th>
<th>CO (kgs/day)</th>
<th>NOx (kgs/day)</th>
<th>Total PM10 (kgs/day)</th>
<th>Exhaust PM10 (kgs/day)</th>
<th>Fugitive Dust PM10 (kgs/day)</th>
<th>Total PM2.5 (kgs/day)</th>
<th>Exhaust PM2.5 (kgs/day)</th>
<th>Fugitive Dust PM2.5 (kgs/day)</th>
<th>CO2 (kgs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.2</td>
<td>25.1</td>
<td>40.8</td>
<td>8.9</td>
<td>2.1</td>
<td>6.8</td>
<td>3.3</td>
<td>1.9</td>
<td>1.4</td>
<td>5,216.2</td>
</tr>
</tbody>
</table>

**Total (megagrams/construction project)**

<table>
<thead>
<tr>
<th>Project Phases</th>
<th>ROG (kgs/day)</th>
<th>CO (kgs/day)</th>
<th>NOx (kgs/day)</th>
<th>Total PM10 (kgs/day)</th>
<th>Exhaust PM10 (kgs/day)</th>
<th>Fugitive Dust PM10 (kgs/day)</th>
<th>Total PM2.5 (kgs/day)</th>
<th>Exhaust PM2.5 (kgs/day)</th>
<th>Fugitive Dust PM2.5 (kgs/day)</th>
<th>CO2 (kgs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.5</td>
<td>3.1</td>
<td>4.5</td>
<td>1.6</td>
<td>0.2</td>
<td>1.3</td>
<td>0.5</td>
<td>0.2</td>
<td>0.3</td>
<td>608.5</td>
</tr>
</tbody>
</table>

### Notes:

- Project Start Year: 2018
- Project Length (months): 9
- Total Project Area (hectares): 4
- Maximum Area Disturbed/Day (hectares): 1
- Total Soil Imported/Exported (meters³/day): 32

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.
**Road Construction Emissions Model**

**Data Entry Worksheet**

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

### Input Type

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Palmdale Avenue R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Start Year</td>
<td>2018</td>
</tr>
</tbody>
</table>

Enter a Year between 2009 and 2025 (inclusive)

### Project Type

1. New Road Construction
2. Road Widening
3. Bridge/Overpass Construction

### Project Construction Time

9.00 months

### Predominant Soil/Site Type: Enter 1, 2, or 3

1. Sand Gravel
2. Weathered Rock-Earth
3. Blasted Rock

### Project Length

1.80 miles

### Total Project Area

10.00 acres

### Maximum Area Disturbed/Day

1.50 acres

### Water Trucks Used?

1. Yes
2. No

### Soil Imported

42.00 yd³/day

### Soil Exported

0.00 yd³/day

### Average Truck Capacity

14 yd³ (assume 20 if unknown)

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

<table>
<thead>
<tr>
<th>Construction Periods</th>
<th>User Override of Program Calculated</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Construction Months</td>
<td>Months</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Grubbing/Land Clearing</td>
<td>2.00</td>
<td>0.90</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Grading/Excavation</td>
<td>3.00</td>
<td>3.60</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Drainage/Utilities/Sub-Grade</td>
<td>2.00</td>
<td>3.15</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Paving</td>
<td>2.00</td>
<td>1.35</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Totals</td>
<td>9.00</td>
<td>9.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**NOTE:** soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.
Hauling emission default values can be overridden in cells C45 through C46.

### Soil Hauling Emissions

<table>
<thead>
<tr>
<th>User Override of</th>
<th>Soil Hauling Defaults</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles/round trip</td>
<td>10.00</td>
<td>30</td>
</tr>
<tr>
<td>Round trips/day</td>
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<td></td>
</tr>
<tr>
<td>Vehicle miles traveled/day (calculated)</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hauling Emissions</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
<th>CO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission rate (grams/mile)</td>
<td>0.15</td>
<td>0.66</td>
<td>0.67</td>
<td>0.16</td>
<td>0.09</td>
<td>1624.61</td>
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<td>Emission rate (grams/trip)</td>
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<td>0.00</td>
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<tr>
<td>Pounds per day</td>
<td>0.01</td>
<td>0.44</td>
<td>0.04</td>
<td>0.01</td>
<td>0.01</td>
<td>107.35</td>
</tr>
<tr>
<td>Tons per construction period</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>3.54</td>
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</table>

Worker commute default values can be overridden in cells C60 through C65.

### Worker Commute Emissions

<table>
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<tr>
<th>User Override of Worker</th>
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<td>Miles/ one-way trip</td>
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<tr>
<td>One-way trips/day</td>
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</tr>
<tr>
<td>No. of employees: Grubbing/Land Clearing</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>No. of employees: Grading/Excavation</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>No. of employees: Drainage/Utilities/Sub-Grade</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>No. of employees: Paving</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Worker Commute Emissions</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
<th>CO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission rate - Grubbing/Land Clearing (grams/mile)</td>
<td>0.120</td>
<td>0.154</td>
<td>1.399</td>
<td>0.047</td>
<td>0.020</td>
<td>443.880</td>
</tr>
<tr>
<td>Emission rate - Grading/Excavation (grams/mile)</td>
<td>0.120</td>
<td>0.154</td>
<td>1.399</td>
<td>0.047</td>
<td>0.020</td>
<td>443.880</td>
</tr>
<tr>
<td>Emission rate - Draining/Utilities/Sub-Grade (gr/mile)</td>
<td>0.120</td>
<td>0.154</td>
<td>1.399</td>
<td>0.047</td>
<td>0.020</td>
<td>443.880</td>
</tr>
<tr>
<td>Emission rate - Paving (grams/mile)</td>
<td>0.120</td>
<td>0.154</td>
<td>1.399</td>
<td>0.047</td>
<td>0.020</td>
<td>443.880</td>
</tr>
<tr>
<td>Emission rate - Grubbing/Land Clearing (grams/trip)</td>
<td>0.415</td>
<td>0.255</td>
<td>3.410</td>
<td>0.004</td>
<td>0.003</td>
<td>95.711</td>
</tr>
<tr>
<td>Emission rate - Grading/Excavation (grams/trip)</td>
<td>0.415</td>
<td>0.255</td>
<td>3.410</td>
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<td>0.003</td>
<td>95.711</td>
</tr>
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<td>95.711</td>
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<tr>
<td>Emission rate - Paving (grams/trip)</td>
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<td>0.255</td>
<td>3.410</td>
<td>0.004</td>
<td>0.003</td>
<td>95.711</td>
</tr>
<tr>
<td>Pounds per day - Grubbing/Land Clearing</td>
<td>0.109</td>
<td>0.129</td>
<td>1.210</td>
<td>0.036</td>
<td>0.015</td>
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<tr>
<td>Pounds per day - Grading/Excavation</td>
<td>0.002</td>
<td>0.003</td>
<td>0.027</td>
<td>0.001</td>
<td>0.000</td>
<td>7.610</td>
</tr>
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<td>Tons per construction period - Grub/Land Clear</td>
<td>0.010</td>
<td>0.012</td>
<td>0.108</td>
<td>0.003</td>
<td>0.001</td>
<td>30.982</td>
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<td>Pounds per day - Drainage/Utilities/Sub-Grade</td>
<td>0.217</td>
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<td>0.031</td>
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Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

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<th>Water Truck Emissions</th>
<th>User Override of Default # Water Trucks</th>
<th>Program Estimate of Number of Water Trucks</th>
<th>User Override of Truck Miles Traveled/Day</th>
<th>Default Values Miles Traveled/Day</th>
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<th>CO</th>
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<th>PM2.5</th>
<th>CO2</th>
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Fugitive dust default values can be overridden in cells C110 through C112.

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Grubbing/Land Clearing pounds per day: 2.4 15.2 19.6 0.9 0.9 2600.2
Grubbing/Land Clearing tons per phase: 0.1 0.3 0.4 0.0 0.0 57.2
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Grading/Excavation: pounds per day
Grading: tons per phase

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Drainage pounds per day
Drainage tons per phase

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Appendix F  Noise Monitoring Results
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Summary
File Name 831_Data.072
Serial Number 0001742
Model Model 831
Firmware Version 2.300
User Shu
Location Monitoring Site #1
Job Description Avenue R
Note
Measurement Description
Start 2015-12-01 10:11:50
Stop 2015-12-01 10:31:58
Duration 0:20:08.1
Run Time 0:20:08.1
Pause 0:00:00.0
Pre Calibration 2015-12-01 7:32:44
Post Calibration None
Calibration Deviation ---
Overall Settings
RMS Weight A Weighting
Peak Weight A Weighting
Detector Slow
Preamp PRM831
Microphone Correction Off
Integration Method Linear
Gain 0.0 dB
Overload 144.6 dB
Under Range Peak A 77.0 C 74.0
Under Range Limit A 26.4 C 26.8
Noise Floor A 17.3 C 17.7
Results
LAeq 57.6 dB
LAE 88.5 dB
EA 77.781 μPa²h
LPeak (max) 2015-12-01 10:19:13 87.7
LMax 2015-12-01 10:31:51 63.0
LMin 2015-12-01 10:31:40 54.4
Statistics
L5.00 59.5 dB
L10.00 59.1 dB
L33.30 58.4 dB
L50.00 57.4 dB
L66.60 56.4 dB
L90.00 55.3 dB
Calibration History
Preamp Date dB re. 1V/Pa
PRM831 2015-12-01 7:32:44 -27.0
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## Summary
- **File Name**: 831_Data.071
- **Serial Number**: 0001742
- **Model**: Model 831
- **Firmware Version**: 2.300
- **User**: Shu
- **Location**: Monitoring Site #2
- **Job Description**: Avenue R

## Note
- **Measurement Description**: Start 2015-12-01 9:47:11
- **Stop**: 2015-12-01 10:07:14
- **Duration**: 0:20:03.2
- **Run Time**: 0:20:03.2
- **Pause**: 0:00:00.0

## Pre Calibration
- **Post Calibration**: None
- **Calibration Deviation**: ---

## Overall Settings
- **RMS Weight**: A Weighting
- **Peak Weight**: A Weighting
- **Detector**: Slow
- **Preamp**: PRM831
- **Microphone Correction**: Off
- **Integration Method**: Linear
- **Gain**: 0.0 dB
- **Overload**: 144.6 dB

## Results
- **LAeq**: 66.2 dB
- **LAE**: 97.0 dB
- **EA**: 553.684 µPa²h
- **LApeak (max)**: 97.4
- **LASmax**: 76.8
- **LASmin**: 44.1

## Statistics
- **LAS5.00**: 72.1 dB
- **LAS10.00**: 70.6 dB
- **LAS33.30**: 65.9 dB
- **LAS50.00**: 62.7 dB
- **LAS66.60**: 59.5 dB
- **LAS90.00**: 51.3 dB

## Calibration History
- **Preamp**: PRM831
  - **Date**: 2015-12-01 7:32:44
  - **dB re. 1V/Pa**: -27.0
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Summary
File Name  831_Data.070
Serial Number  0001742
Model  Model 831
Firmware Version  2.300
User  Shu
Location  Monitoring Site #3
Job Description  Avenue R

Note
Measurement Description
Start  2015-12-01  9:12:45
Stop  2015-12-01  9:32:59
Duration  0:20:13.9
Run Time  0:19:41.6
Pause  0:00:32.3

Pre Calibration  2015-12-01  7:32:44
Post Calibration  None
Calibration Deviation  ---

Overall Settings
RMS Weight  A Weighting
Peak Weight  A Weighting
Detector  Slow
Preamp  PRM831
Microphone Correction  Off
Integration Method  Linear
Gain  0.0 dB
Overload  144.6 dB

Results
LAeq  69.6 dB
LAE  100.3 dB
EA  1.198 mPa²h
LApeak (max)  2015-12-01  9:29:45  96.0
LASmax  2015-12-01  9:21:28  81.1
LASmin  2015-12-01  9:15:35  40.1

Statistics
LAS5.00  75.0 dB
LAS10.00  73.6 dB
LAS33.30  69.8 dB
LAS50.00  66.8 dB
LAS66.60  63.2 dB
LAS90.00  52.2 dB

Calibration History
Preamp  Date  dB re. 1V/Pa
PRM831  2015-12-01  7:32:44  -27.0
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File Name 831_Data.069
Serial Number 0001742
Model Model 831
Firmware Version 2.300
User Shu
Location Monitoring Site #4
Job Description Avenue R

Note
Measurement Description
Start 2015-12-01 8:42:14
Stop 2015-12-01 9:02:28
Duration 0:20:14.6
Run Time 0:19:17.2
Pause 0:00:57.4

Pre Calibration 2015-12-01 7:32:44
Post Calibration None
Calibration Deviation ---

Overall Settings
RMS Weight A Weighting
Peak Weight A Weighting
Detector Slow
Preamp PRM831
Microphone Correction Off
Integration Method Linear
Gain 0.0 dB
Overload 144.6 dB

Results
LAEq 58.0 dB
LAE 88.6 dB
EA 80.640 µPa²h
LApeak (max) 2015-12-01 8:43:34 88.7
LASmax 2015-12-01 8:46:33 69.7
LASmin 2015-12-01 8:46:22 45.0

Statistics
LAS5.00 62.8 dB
LAS10.00 61.4 dB
LAS33.30 57.6 dB
LAS50.00 55.6 dB
LAS66.60 53.8 dB
LAS90.00 50.5 dB

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### Summary

- **File Name**: 831_Data.068
- **Serial Number**: 0001742
- **Model**: Model 831
- **Firmware Version**: 2.300
- **User**: Shu
- **Location**: Monitoring Site #5
- **Job Description**: Avenue R
- **Note**: Measurement Description

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**Measurement Description**

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**Overall Settings**

- **RMS Weight**: A Weighting
- **Peak Weight**: A Weighting
- **Detector**: Slow
- **Preamp**: PRM831
- **Microphone Correction**: Off
- **Integration Method**: Linear
- **Gain**: 0.0 dB
- **Overload**: 144.6 dB

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### Summary
- **File Name**: 831_Data.067
- **Serial Number**: 0001742
- **Model**: Model 831
- **Firmware Version**: 2.300
- **User**: Shu
- **Location**: Monitoring Site #6
- **Job Description**: Avenue R

### Note
- **Measurement Description**: Avenue R

### Start
- **Start**: 2015-12-01 7:36:05
- **Stop**: 2015-12-01 7:56:06
- **Duration**: 0:20:01.0
- **Run Time**: 0:20:01.0
- **Pause**: 0:00:00.0

### Pre Calibration
- **Pre Calibration**: 2015-12-01 7:32:44

### Post Calibration
- **Post Calibration**: None

### Overall Settings
- **RMS Weight**: A Weighting
- **Peak Weight**: A Weighting
- **Detector**: Slow
- **Preamp**: PRM831
- **Microphone Correction**: Off
- **Integration Method**: Linear
- **Gain**: 0.0 dB
- **Overload**: 144.6 dB

### Results
- **LAeq**: 58.7 dB
- **LAE**: 89.5 dB
- **EA**: 98.128 µPa²h
- **LApeak (max)**: 2015-12-01 7:36:19 86.7 dB
- **LASmax**: 2015-12-01 7:54:57 69.1 dB
- **LASmin**: 2015-12-01 7:55:47 45.2 dB
- **LAS10.00**: 61.8 dB
- **LAS33.30**: 58.8 dB
- **LAS50.00**: 57.2 dB
- **LAS66.60**: 55.6 dB
- **LAS90.00**: 52.1 dB

### Calibration History
- **Preamp**: PRM831
- **Date**: 2015-12-01 7:32:44
- **dB re. 1V/Pa**: -27.0
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Appendix G  SHPO Concurrence Letter

December 15, 2015

Kelly Ewing-Toledo
Heritage Resources Coordinator
Division of Environmental Planning
Caltrans District 7
100 South Main Street, Suite 100
Los Angeles, CA 90012-3606

Re: Determination of Eligibility for the Proposed Palmdale Avenue R Safety Improvements Project, Palmdale, CA

Dear Ms. Ewing-Toledo:

Thank you for consulting with the State Historic Preservation Officer (SHPO) 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 and the City of Palmdale are proposing to construct safety improvements to a segment of Avenue R including associated infrastructure intended to address safety needs for several nearby schools. The project proposes to provide a safer roadway for all roadway users by widening Avenue R to five lanes (two in each direction with a center two-way left turn lane) with a Class II bike lane, construction to fill in sidewalk gaps, signage upgrades, ladder-style crosswalks, and the construction of bus turnouts. The project also includes a small area segment at the intersection of Avenue R4 and 11th Street to install curb extensions and a two way pedestrian crossing. To complete the project, private right-of-way will have to be acquired at various locations along Avenue R. Limited demolition of buildings may be necessary on parcels with right-of-way takes.

Caltrans has determined that the following properties are not eligible for the National Register of Historic Places (NRHP):

- 922-932 Avenue R
- 1133-1135 Avenue R
- 1204 Avenue R
- 1223 Avenue R
- 1224 Avenue R
- 1259 Avenue R
Ms. Ewing-Toledo  
December 15, 2015  
Page 2 of 2

Based on my review of the submitted documentation I concur.

If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or Alicia Perez at (916) 445-7020.

Sincerely,

Julianne Polanco  
State Historic Preservation Officer
Appendix H  Glossary of Technical Terms
Appendix H • Glossary of Technical Terms
A-Weighted Decibel Sound Level (dBA): (See decibel, A-Weighted)

Acceptable Risk: A hazard deemed to be a tolerable exposure to danger given the expected benefits to be obtained. Different levels of acceptable risk may be assigned according to the potential danger and the criticalness of the threatened structure. The levels may range from "near zero" for nuclear plants and natural gas transmission lines to "moderate" for open space, ranches, and low-intensity warehouse uses.

Access/Egress: The ability to enter a site from a roadway and exit a site onto a roadway by motorized vehicle.

Acid Rain: Rain that is especially acidic (pH <5.2). Principal components of acid rain typically include nitric and sulfuric acid. These may be formed by the combination of nitrogen and sulfur oxides with water vapor in the atmosphere.

Acoustics: (1) The science of sound, including the generation, transmission, and effects of sound waves, both audible and inaudible. (2) The physical qualities of a room or other enclosure (such as size, shape, amount of noise) that determine the audibility and perception of speech and music.

Acre: A unit of land equal to 43,560 square feet.

Acre-Foot: The amount of water needed to cover an acre to a depth of one foot, or 325,900 gallons. One acre-foot can support the annual indoor and outdoor needs of between one and two households per year and, on average, three acre-feet are needed to irrigate one acre of farmland.

Acre, Gross: The total area within the lot lines of a lot of land before public streets, easements or other areas to be dedicated or reserved for public use are deducted from such lot, and not including adjacent lands already dedicated for such purposes. Most communities calculate gross acreage to the centerline of proposed bounding streets and to the edge of the right-of-way of existing or dedicated streets.

Acre, Net: The portion of a site that can actually be built upon. The following generally are not included in the net acreage of a site: public or private road right-of-ways, public open space, and flood ways.

Active Fault: The Alquist-Priolo Earthquake Fault Zoning Act defines an active fault as one that has evidence of rupture within the last 11,000 years (Holocene time). The Alquist-Priolo Zone only applies to surface traces of faults that the State Geologist considers “active” and the Zone itself does not define a potentially active fault. However, a potentially active fault is commonly considered to be a fault that shows evidence of movement within Quaternary time (within the last 1.8 million years) but not within recent (Holocene) time.

Active Recreation: Leisure time activities, usually of a more formal nature and performed with others, often requiring equipment and taking place at prescribed places, sites, or fields.

Adaptive Reuse: The conversion of obsolescent or historic buildings from their original or most recent use to a new use. For example, the conversion of former hospital or school buildings to residential use, or the conversion of an historic single-family home to office use.

Administrative Record: The compilation of notices, background reports, and environmental review documents that provide a record of the environmental review, public involvement, and decision making processes required by CEQA related to a project.

Adverse Impact: A term used to describe unfavorable, harmful, or detrimental environmental changes. Adverse impacts may be significant or not significant. (See Significant Impact)
Advisory Council on Historic Preservation (ACHP): Independent federal agency responsible for implementing the Section 106 review process.

Affordable Housing: Housing capable of being purchased or rented by a household with very low, low, or moderate income, based on a household’s ability to make monthly payments necessary to obtain housing. “Affordable to low and moderate income households” means that at least 20 percent of the units in a development will be sold or rented to lower income households, and the remaining units to either lower or moderate income households. Housing units for lower income households must sell or rent for a month cost not greater than 30 percent of 60 percent of area median income as periodically established by the Housing and Community Development Department of the State of California (HCD). Housing units for moderate income must sell or rent for a monthly cost not greater than 30 percent of the area median income.

Agricultural Land Use: The use of land primarily for farming, ranching, horse breeding, dairy farming and other forms of food and crop production. From a planning perspective, agricultural land use connotes primary economic use of the property.

Agricultural Preserve: Land designated for agriculture or conservation. (See Williamson Act.)

Agriculture: Use of land for the production of food and fiber, including the growing of crops and/or the grazing of animals on natural prime or improved pasture land.

Air Basin: An area of the state designated by the Air Resources Board pursuant to Subdivision (a) of §39606 of the California Health and Safety Code for air quality planning purposes. California is currently divided into 15 air basins.

Airborne Toxic Control Measure (ATCM): A control measure adopted by the State of California Air Resources Board (Health and Safety Code Section 39666 et seq.), that reduces emissions of toxic air contaminants.

Air District: A political body responsible for managing air quality on a regional or county basis. California is currently divided into 35 air districts.

Air Monitoring: The periodic or continuous sampling and analysis of air pollutants in ambient air or from individual pollutant sources.

Air Pollution/Pollutants: Substances that are foreign to the atmosphere or are present in the natural atmosphere to the extent that they may result in adverse effects on humans, animals, vegetation, and materials. Common air pollutants are ozone, nitrogen dioxide, particulate matter, and carbon monoxide. Air pollution is defined in the California Health and Safety Code as any discharge, release, or other propagation into the atmosphere and includes, but is not limited to, smoke, charred paper, dust, soot, grime, carbon, fumes, gases, odors, particulate matter, acids, or any combination thereof.

Air Pollution Control District (APCD): A local agency with authority to regulate stationary, indirect, and area sources of air pollution (such as refineries, manufacturing facilities, and power plants) within a given county, and governed by a District Air Pollution Control Board composed of elected county supervisors.

Air Quality Management District (AQMD): A group of counties or portions of counties, or an individual county specified in law with authority to regulate stationary, indirect, and area sources of air pollution within the region and governed by a regional air pollution control board comprised mostly of elected officials from within the region.
Air Quality Management Plan (AQMP): A plan prepared by an air pollution control district or air quality management district for a county or region designated as a non-attainment area, for the purpose of bringing the area into compliance with the requirements of the federal Clean Air Act and/or the California Clean Air Act. An AQMP contains measures that will be taken to attain and maintain federal and state ambient air quality standards. In California, air districts prepare air quality management plans that are included in the state’s State Implementation Plan (SIP) that is required by the federal Clean Air Act. Such plans are also referred to as Clean Air Plans or Clean Air Attainment Plans.

Air Quality Model: An algorithmic relationship between pollutant emissions and pollutant concentrations used in the prediction of a project's pollutant impact.

Air Quality Standards: Standards promulgated by state or federal pollution control districts. The specified average concentration of an air pollutant in ambient air during a specified time period at or above which undesirable effects may be produced. The prescribed level of a pollutant in the outside air that should not be exceeded during a specific time period to protect public health. Established by both federal and state governments.

Airport-related Use: A use that supports airport operations including, but not limited to, aircraft repair and maintenance, flight instruction, and aircraft chartering.

Air Toxics: A generic term referring to a harmful chemical or group of chemicals in the air. Any air pollutant for which a national ambient air quality standard (NAAQS) does not exist (i.e., excluding ozone, carbon monoxide, PM<sub>10</sub>, sulfur dioxide, nitrogen dioxide) that may reasonably be anticipated to cause cancer, developmental effects, reproductive dysfunctions, neurological disorders, heritable gene mutations, or other serious or irreversible chronic or acute health effects in humans. Substances that are especially harmful to health, such as those considered under U.S. EPA's hazardous air pollutant program or California's AB 1807 and/or AB 2588 air toxics programs, are considered to be air toxics. Technically, any compound that is in the air and has the potential to produce adverse health effects is an air toxic.

Alley: A narrow service way, either public or private, that provides a permanently reserved but secondary means of public access not intended for general traffic circulation. Alleys typically are located along rear property lines.

Alluvial: Sediment (gravel, sand, silt, soil, etc.) deposited by stream action.

Alquist-Priolo Special Study Zone: In 1972, the State of California began delineating Special Studies Zones around active and potentially active faults in the State. The zones extend about 660 feet on either side of identified fault traces. No structures for human occupancy may be built across an identified fault trace. An area of 50 feet on either side of an active fault trace is assumed to be underlain by the fault unless proven otherwise. Proposed construction within the Special Studies Zone can take place only following completion of a geotechnical report prepared by a California Registered Geologist or Certified Engineering Geologist.

Alternative Fuels: Fuels such as methanol, ethanol, natural gas, and liquid petroleum gas that are cleaner burning with lower air emissions and help to meet the Air Resources Board's mobile and stationary emission standards. These fuels may be used in place of less clean fuels for powering motor vehicles.

Ambient Air: The air occurring at a particular time and place outside of structures. Often used interchangeably with "outdoor air."

Ambient Air Quality Standards (AAQS): Health- and welfare-based standards for outdoor air that identify the maximum acceptable average concentrations of air pollutants during a specified period of time.
**Ambient Conditions:** Initial background concentration sensed/measured at a monitoring/sampling site, as in air quality or noise.

**Ambient Noise:** The background noise associated with a given environment, usually a composite of sounds from many sources near and far. The ambient noise level constitutes the normal or existing level of environmental noise at a given location regardless of source.

**Americans with Disabilities Act (ADA):** Law prohibiting discrimination to persons with disabilities, by requiring, among other things, that places generally open to the public, such as restaurants and hotels, is made accessible.

**Apartment:** (1) One or more rooms of a building used as a place to live, in a building containing at least one other unit used for the same purpose. (2) A separate suite, not owner occupied, that includes kitchen facilities and is designed for and rented as the home, residence, or sleeping place of one or more persons living as a single housekeeping unit.

**Applicant:** Applicant means a person who proposes to carry out a project which needs a lease, permit, license, certificate, or other entitlement for use or financial assistance from one or more public agencies when that person applies for the governmental approval or assistance (source: CEQA Guidelines §15351).

**Approval:** Approval means the decision by a public agency which commits the agency to a definite course of action in regard to a project intended to be carried out by any person. The exact date of approval of any project is a matter determined by each public agency according to its rules, regulations, and ordinances. Legislative action in regard to a project often constitutes approval. With private projects, approval occurs upon the earliest commitment to issue or the issuance by the public agency of a discretionary contract, grant, subsidy, loan, or other form of financial assistance, lease, permit, license, certificate, or other entitlement for use of the project (source: CEQA Guidelines §15352).

**Aquatic:** General reference to various water-oriented habitats such as rivers, streams, creeks, ponds, lakes, etc. These resources may be perennial, intermittent, or ephemeral in nature.

**Aqueduct:** A constructed system of canals, channels, and/or pipelines to move water from one location to another.

**Aquifer:** A natural underground formation that is saturated with water, and from which water can be withdrawn. A geologic formation of sand, rock, and gravel through which water can pass and that can store, transmit, and yield significant quantities of water to wells and springs. Aquifers generally hold sufficient water to be used as a water supply.

**Arable:** Land capable of being cultivated for farming.

**Archeological Site:** The location of past focused human activities, defined in close proximity of continuous distribution of artifacts.

**Area; Area Median Income:** As used in State of California housing law with respect to income eligibility limits established by the U.S. Department of Housing and Urban Development (HUD), "area" means metropolitan area or non-metropolitan county. In non-metropolitan areas, the "area median income" is the higher of the county median family income or the statewide non-metropolitan median family income.

**Area of Interest:** That area having a direct physical and social influence on a city's planning area but not appropriate for annexation.
**Area of Potential Effect (APE):** A term used in Section 106 to describe the area in which historic resources may be affected by a federal undertaking.

**Area Sources:** Those sources for which a methodology is used to estimate air emissions. This can include areawide, mobile, and natural sources, and also groups of stationary sources (such as dry cleaners and gas stations). The California Clean Air Act requires air districts to include area sources in the development and implementation of the Air Quality Management Plan. In the California emission inventory, all sources that are not reported as individual point sources are included as area sources. The federal air toxics program defines a source that emits less than 10 tons per year of a single hazardous air pollutant (HAP) or 25 tons per year of all hazardous air pollutants as an area source.

**Area-Wide Sources:** Sources of pollution where the emissions are spread over a wide area, such as consumer products, fireplaces, road dust and farming operations. Area-wide sources do not include mobile sources or stationary sources.

**Arterial Road:** A vehicular right-of-way whose primary function is to carry through traffic in a continuous route across an urban area while also providing some access to abutting land. Medium-speed (30-40 mph), medium-capacity (10,000-35,000 average daily trips) roadway that provides intra-community travel and access to the county-wide highway system. Access to community arterials should be provided at collector roads and local streets, but direct access from parcels to existing arterials is common.

**Artesian:** An aquifer in which water is confined under sufficient pressure between layers of impermeable material to cause it to rise above the bottom of the overlying confining bed, if opportunity to do so should be provided. Wells tapping into an artesian stratum will flow naturally without the use of pumps.

**Artifact:** An object (tool or ornament) showing human workmanship or modification.

**Asbestos:** A mineral fiber that can pollute air or water and cause cancer or asbestosis when inhaled. The U.S. EPA has banned or severely restricted its use in manufacturing and construction and the Air Resources Board has imposed limits on the amount of asbestos in serpentine rock that is used for surfacing applications.

**Assembly Bill 32 (AB 32), California Global Warming Solutions Act of 2006:** Requires the California Air Resources Board to adopt regulations by January 2012 to reduce greenhouse gas emissions to 1990 levels by 2020.

**Assembly Bill 1493 (AB 1493):** Requires the California Air Resources Board to adopt regulations to achieve maximum feasible and cost effective reduction in greenhouse gas emissions from motor vehicles.

**Asthma:** A chronic inflammatory disorder of the lungs characterized by wheezing, breathlessness, chest tightness, and cough.

**Atmosphere:** The gaseous mass or envelope of air surrounding the Earth. From ground-level up, the atmosphere is further subdivided into the troposphere, stratosphere, mesosphere, and the thermosphere.

**Attainment:** Achieving and maintaining the air quality standards (both state and federal) for a given air pollutant.

**Attainment Area:** A geographical area considered to have air quality as good as or better than the National Ambient Air Quality Standard as defined in the Clean Air Act or California ambient air quality standards. An area may be an attainment area for one pollutant and a non-attainment area for others.
Average Daily Traffic (ADT): The number of vehicles (trips) passing a given point on a road going in a direction during a 24-hour period.

Backfill: (1) The operation of refilling an excavation, usually after some structure or pipeline has been placed therein. (2) The material placed in an excavation in the process of backfilling.

Background Concentration: Air pollutant concentration due to natural sources and distant unidentified man-made sources.

Background Noise: See Ambient Noise.

Base Flood: In any given year, a 100-year flood that has a one percent likelihood of occurring, and is recognized as a standard for acceptable risk.

Base Flow: River surface flow, not counting storm flow and/or purchased imported water.

Basin Plan: A water quality control plan developed by a Regional Water Quality Control Board (RWQCB) for a specific geographic area. The Basin Plan identifies beneficial uses of waters, the water quality objectives needed to maintain these beneficial uses, and an implementation plan.

Beneficial Uses: Those uses established for a geographical area in a Regional Water Quality Control Board (RWQCB) Basin Plan, as established by the RWQCB to protect the resources, services, and qualities of state waters against degradation. Beneficial uses may include: municipal and domestic supply, agricultural supply, industrial processes, groundwater recharge, fresh water replacement, navigation, water contact and non-water contact recreation, warm or cold fresh water habitat, preservation of areas of special biological significance, wildlife habitat, preservation of rare and endangered species, marine habitat, fish migration, fish spawning, shellfish, or estuarine habitat. Beneficial Uses are defined in California Water Code Section 13050.

Best Management Practice (BMP): A BMP is any program, technology, process, siting criteria, operating method, measure, or device that controls, prevents, removes, or reduces pollution.

Bicycle Lane (Class II facility): A corridor expressly reserved for bicycles, existing on a street or roadway in addition to any lanes for use by motorized vehicles.

Bicycle Path/Trail (Class I facility): A paved route not on a street or roadway and expressly reserved for bicycles traversing an otherwise unpaved area. Bicycle trails may parallel roads, but typically are separated from them by landscaping.

Bicycle Route (Class III facility): A facility shared by motorists and identified only by signs, a bicycle route has not pavement markings or lane stripes.

Bike Lane: A lane devoted to non-motorized bicycles.

Bikeway: A term that encompasses bicycle lanes, bicycle paths, and bicycle routes.

Biological Diversity: The variety of life forms and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.

Board of Supervisors: A county’s legislative body. Board members are elected by popular vote and are responsible for enacting ordinances, imposing taxes, making appropriations, and establishing county policy. The board adopts the general plan, zoning, and subdivision regulations.
**Box Culvert:** A culvert with a rectangular cross-section.

**Brown Act:** The Ralph M. Brown Open Meeting Act (commencing with Government Code Section 54950) requires cities and counties to provide advance public notice of hearings and meetings of their councils, boards, and other bodies. Meetings and hearings with some exceptions must be open to the public.

**Brownfield:** An area with abandoned, idle, or under-used industrial and commercial facilities where expansion, redevelopment, or reuse is complicated by real or perceived environmental contamination. (See Greenfield and Greyfield)

**Building:** Any structure having a roof supported by columns or walls and intended for the shelter, housing or enclosure of persons, animals, or property of any kind.

**Building Height:** The vertical distance from the average contact ground level of a building to the highest point of the coping of a flat roof or to the deck line of a mansard roof or to the mean height level between eaves and ridge for a gable, hip, or gambrel roof. The exact definition varies by community. For example, in some communities building height is measured to the highest point of the roof, not including elevator and cooling towers.

**Buildout:** Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations. The year in which project construction has been completed.

**California Air Resources Board (CARB):** The State of California’s legislature established the Air Resources Board in 1967 to: attain and maintain healthy air quality, conduct research into the causes of and solutions to air pollution, and systematically attack serious problems caused by motor vehicles which are the major causes of air pollution in the State. The CARB is an 11-member Governor-appointed board responsible for motor vehicle air pollution control, and having oversight over California’s air pollution management program. CARB is responsible for attainment and maintenance of the state and federal air quality standards, and is fully responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.

**California Ambient Air Quality Standards (CAAQS):** A legal limit that specifies the maximum level and time of exposure in the outdoor air for a given air pollutant and that is protective of human health and public welfare (Health and Safety Code section 39606b). CAAQSs are recommended by the California Office of Environmental Health Hazard Assessment and adopted into regulation by the CARB. CAAQSs are the standards that must be met per the requirements of the California Clean Air Act (CCAA).

**California Clean Air Act (CCAA):** A California law passed in 1998 that provides the basis for air quality planning and regulation independent of federal regulations, and that establishes new authority for attaining and maintaining California’s air quality standards by the earliest practicable date. A major element of the CCAA is the requirement that local Air Pollution Control Districts in violation of the California Ambient Air Quality Standards must prepare attainment plans that identify air quality problems, causes, trends, and actions to be taken for attainment.

**California Climate Action Registry:** The California Registry, formed by the State of California, serves as a voluntary greenhouse gas (GHG) registry to protect and promote early actions to reduce GHG emissions by organizations.

**California Code of Regulations (CCR):** The regulations that implement California laws.

**California Department of Fish and Wildlife (CDFW):** The state government agency responsible for regulating impacts to lakes and streambeds and upholding the California Endangered Species Act.
California Department of Transportation (Caltrans): The state government agency responsible for the construction, maintenance, and operation of state and federal highways in California.

California Environmental Protection Agency (Cal EPA): The state agency established in 1991 for unifying environmental activities related to public health protection in the State of California. There are six boards, departments, and offices under the organization of Cal/EPA including the California Air Resources Board (ARB), California Integrated Waste Management Board (IWMB), State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB), Department of Pesticide Regulation (DPR), Department of Toxic Substances Control (DTSC), and Office of Environmental Health Hazard Assessment (OEHHA). The Cal EPA boards, departments, and offices are directly responsible for implementing California environmental laws, or play a cooperative role with other regulatory agencies at regional, local, state, and federal levels.

California Environmental Quality Act (CEQA): The California Environmental Quality Act, California Public Resources Code Sections 21000 et seq. (Source: CEQA Guidelines §15353). In general, CEQA requires that all private and public projects be reviewed prior to approval for their potential adverse effects on the environment.

Capital Improvements: The building of infrastructure or public works projects with public funds.

Capital Improvements Program (CIP): A program established by a city or county government that schedules infrastructure improvements necessary to accommodate existing and anticipated future development. Most CIPs are for a minimum of five years into the future, and include a financing mechanism, to fit the projected fiscal capability of the local jurisdiction. The program generally is reviewed annually for conformance to and consistency with the general plan.

Carbon Dioxide (CO$_2$): A colorless gas that enters the atmosphere as the result of natural and artificial combustion processes. Significant quantities are also emitted into the air by fossil fuel combustion. It is also a normal part of the ambient air.

Carbon Monoxide (CO): A colorless, odorless gas resulting from the incomplete combustion of fossil fuels. CO interferes with the blood’s ability to carry oxygen to the body’s tissues and can result in adverse health effects. CO is a criteria air pollutant.

Catch Basin: A storm drain inlet having a sump below the outlet to capture settled solids.

Census: The official United States decennial enumeration of the population conducted by the federal government.

Central Business District (CBD): The major commercial downtown center of a community. General guidelines for delineating a downtown area are defined by the U.S. Census of Retail Trade, with specific boundaries being set by the local municipality.

Channel: A water course with a definite bed and banks which confine and conduct the normal continuous or intermittent flow of water.

Chlorofluorocarbons (CFC): A family of inert, nontoxic, and easily-liquefied chemicals used in refrigeration, air conditioning, packaging, insulation, or as solvents or aerosol propellants. Because CFCs are not destroyed in the lower atmosphere, they drift into the upper atmosphere where the chlorine is released and destroys ozone.

Circulation Element: One of the seven state-mandated elements of a general plan, it contains adopted goals, policies, and implementation programs for the planning and management of existing and proposed...
thoroughfares, transportation routes, and terminals, as well as local public utilities and facilities, all correlated with the land use element of the general plan.

**Circulation System:** A network of transit, automobile, bicycle, and pedestrian rights-of-way that connect origins and destinations.

**City Council:** A city’s legislative body. The popularly elected city council is responsible for enacting ordinances, imposing taxes, making appropriations, establishing policy, and hiring some city officials. The council adopts the local general plan, zoning, and subdivision ordinance.

**Class I Bikeway:** A completely separated travel way designed for the exclusive use of bicycles.

**Class II Bikeway:** A travelway shared with vehicles but separated by lane striping and signs.

**Clean Air Act (CAA):** A federal law passed in 1970 and amended in 1977 and 1990 that sets primary and secondary National Ambient Air Quality Standards for major air pollutants and forms the basis for the national air pollution control effort.

**Clean Fuels:** Blends and/or substitutes for gasoline fuels. These include compressed natural gas, methanol, ethanol, and others.

**Closed Basin:** A groundwater basin whose topography and geology prevent subsurface outflow of water.

**Code of Federal Regulations (CFR):** The document that codifies all rules of the executive departments and agencies of the federal government. It is divided into 50 volumes, known as titles. Title 40 of the CFR (referenced as 40 CFR) lists all the environmental regulations.

**Commercial:** A land use classification that permits facilities for the buying and selling of commodities and services.

**Commercial Strip:** Commercial development, usually one store deep, that fronts on a major street for a distance of one city block or more. Includes individual buildings on their own lots, with or without on-site parking, and small linear shopping centers with shallow on-site parking in front of the stores.

**Community Care Facility:** Elderly housing licensed by the State Health and Welfare Agency, Department of Social Services, typically for residents who are frail and need supervision. Services normally include three meals daily, housekeeping, security and emergency response, a full activities program, supervision in the dispensing of medicine, personal services such as assistance in grooming and bathing, but no nursing care. Sometimes referred to as residential care or personal care. (See Congregate Care.)

**Community Center:** A public facility in which educational, therapeutic, and/or recreational programs are provided.

**Community Noise Equivalent Level (CNEL):** A noise compatibility level established by California Administrative Code, Title 21, Section 5000. Represents a time-weighted 24-hour average noise level based on the A-weighted decibel. The CNEL scale includes an additional 5 dB adjustment to sounds occurring in the evening (7 p.m. to 10 p.m.) and a 10 dB adjustment to sound occurring in the late evening and early morning between (10 p.m. and 7 a.m.).
Community Park: Land with full public access intended to provide recreation opportunities beyond those supplied by neighborhood parks. Community parks are larger in scale than neighborhood parks, but smaller than regional parks.

Community Service Area: A geographic subarea of a city or county used for the planning and delivery of parks, recreation, and other human services based on an assessment of the service needs of the population in that subarea.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): CERCLA, also known as Superfund, was enacted in 1980 to ensure that a source of funds was available to clean up abandoned hazardous waste dumps, compensate victims, address releases of hazardous materials, and establish liability standards for responsible parties. CERCLA also requires the creation of a National Priorities List that sets forth the sites considered to have the highest priority for cleanup under Superfund.

Conditional Use: A land use that is not permitted by right, but which may be appropriate in a given zoning district under certain circumstances. The use may occur only upon approval of a conditional use permit.

Conditional Use Permit (CUP): Pursuant to the zoning code, a permit based on a discretionary decision required prior to initiation of particular uses not allowed as a matter of right. The use may be desirable under appropriate circumstances, but are not permitted by right in the applicable zone. The purpose of the CUP process is to determine whether, and under what conditions, a specific use may be appropriate in a given location. Further, the intent is that each use be developed so as to fully protect the public health, safety, and welfare of the community. To provide this protection, conditions may be applied to address potential adverse effects associated with the proposed use.

Condominium: A building or group of buildings in which units are owned individually, but the structure, common areas, and facilities are owned by all owners on a proportional, undivided basis.

Confined Aquifer: A water-bearing subsurface stratum that is bounded above and below by formations of impermeable, or relatively impermeable, soil or rock.

Conformity: A demonstration of whether a federally-supported activity is consistent with the State Implementation Plan (SIP)—per Section 176 (c) of the Clean Air Act. Transportation conformity refers to plans, programs, and projects approved or funded by the Federal Highway Administration or the Federal Transit Administration. General conformity refers to projects approved or funded by other federal agencies.

Congestion Management Plan/Program (CMP): A state-mandated program (California Government Code Section 65089a) that requires each county to prepare a plan to relieve congestion and reduce air pollution. Growth management techniques include traffic level of service requirements, standards for public transit, trip reduction programs involving transportation systems management and jobs/housing balance strategies, and capital improvement programming, for the purpose of controlling and/or reducing the cumulative regional traffic impacts of development.

Conservation Element: One of the seven State-mandated elements of a local general plan, it contains adopted goals, policies, and implementation programs for the conservation, development, and use of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources.

Conservation Strategy: A strategy outlining current activities or threats that are contributing to the decline of a species, along with the actions or strategies needed to reverse or eliminate such a decline or threats. Conservation strategies are generally developed for species of plants and animals that are
designated or that have been determined by the U.S. Fish and Wildlife Service or National Marine Fisheries Service to be federal candidates under the Endangered Species Act.

**Consistency, Consistent With:** Free from significant variation or contradiction. The various diagrams, text, goals, policies, and programs in the general plan must be consistent with each other, not contradictory or preferential. The term "consistent with" is used interchangeably with "conformity with." The courts have held that the phrase "consistent with" means "agreement with; harmonious with." Webster defines "conformity with" as meaning harmony, agreement when used with "with." The term "conformity" means in harmony therewith or agreeable to (Sec 58 Ops.Cal.Aty.Gen. 21, 25 [1975]). California State law also requires that a general plan be internally consistent and also requires consistency between a general plan and implementation measures such as the zoning ordinance.

**Consistent:** Free from variation or contradiction. Programs in the general plan are to be consistent, not contradictory or preferential. State law requires consistency between a general plan and implementation measures such as the zoning ordinance.

**Construction:** Any site preparation, assembly, erection, substantial repair, alteration, or similar action for or of public or private rights-of-way, structures, utilities, or similar property.

**Contiguous:** Lands or legal subdivisions having a common boundary; lands having only a common corner are generally not contiguous.

**Cooperating Agency:** "Under NEPA, any agency other than the lead agency that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal for any action significantly affecting the human environment. Under CEQA, the term “responsible agency” is used.

**Co-Permittee:** A permittee to a National Pollutant Discharge Elimination System (NPDES) permit that is only responsible for permit conditions relating to the discharges from its area of jurisdiction.

**Core:** A cobble or small rock from which flakes or blades are removed. The core may be used as a tool as well as a source of flakes.

**Criteria Air Pollutant:** An air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set in order to protect public health. Examples include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM10, and PM2.5. The term "criteria air pollutants" derives from the requirement that the U.S. EPA must describe the characteristics and potential health and welfare effects of these pollutants. The U.S. EPA and CARB periodically review new scientific data and may propose revisions to the standards as a result.

**Culvert:** A closed conduit for the free passage of surface drainage water under a highway, railroad, canal, or other embankment.

**Cumulative Impact:** Under NEPA, a cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (source: 40 CFR 1508.7)

Under CEQA, a cumulative impact refers to two or more individual affects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable
future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (source: CEQA Guidelines §15355).

**Dam:** A barrier built across a river or stream to hold water.

**Data Recovery:** The act of excavating with the intent of answering specific research questions.

**Day-Night Average Sound Level (Ldn):** The A-weighted average sound level in decibels during a 24-hour period with a 10 dB weighing applied to nighttime sound levels (10 p.m. to 7 a.m.). This exposure method is similar to the CNEL, but deletes the evening time period (7 p.m. to 10 p.m.) as a separate factor.

**Depression:** A large or small circular or rectangular area where cultural activity took place (e.g., depressed area of a roundhouse or longhouse).

**Decibel (dB):** A unit for expressing the relative intensity (loudness) of sounds. The decibel is the logarithm of the ratio of the intensity of a given sound to the faintest sound discernible by the human ear.

**Decibel, A-Weighted (dBA):** The "A-weighted" scale for measuring sound in decibels; weighs or reduces the effects of low and high frequencies in order to simulate human hearing. Every increase of 10 dBA doubles the perceived loudness though the noise is actually ten times more intense.

**Degraded Water:** Water within the groundwater basin that, in one characteristic or another, does not meet primary drinking water standards.

**Demolition:** Any dismantling, intentional destruction, or removal of structures, utilities, public or private rights-of-way surfaces, or similar property.

**Density:** The gross site area which shall include local roadways, slopes, and open space areas, unless otherwise specified. Density is usually expressed “per acre.” For example, a development with 100 dwelling units located on 20 acres has a density of 5 units per acre.

**Density, Control of:** A limitation on the occupancy of land. Density can be controlled through zoning in the following ways: use restrictions, minimum lot-size requirements, floor area ratios, land use-intensity ratios, setback and yard requirements, minimum house-size requirements, ratios comparing number and types of housing units to land area, limits on units per acre, and other means. Allowable density often serves as the major distinction between residential districts.

**Density, Residential:** The number of permanent residential dwelling units per acre of land. Densities specified in a general plan may be expressed in units per gross acre or per net developable acre.

**Detention Dam/Basin/Pond:** Dams may be classified according to the broad function they serve, such as storage, diversion, or detention. Detention dams are constructed to retard flood runoff and minimize the effect of sudden floods. Detention dams fall into two main types. In one type, the water is temporarily stored, and released through an outlet structure at a rate that will not exceed the carrying capacity of the channel downstream. Often, the basins are planted with grass and used for open space or recreation in periods of dry weather. The other type, most often called a Retention Pond, allows for water to be held as long as possible and may or may not allow for the controlled release of water. In some cases, the water is allowed to seep into the permeable banks or gravel strata in the foundation. This latter type is sometimes called a Water-Spreading Dam or Dike because its main purpose is to recharge the underground water supply. Detention dams are also constructed to trap sediment. These are often called Debris Dams.

**Developer:** An individual who or business that prepares raw land for the construction of buildings or causes to be built physical building space for use primarily by others, and in which the preparation of the
land or the creation of the building space is in itself a business and is not incidental to another business or activity.

**Development**: The physical extension and/or construction of land uses. Development activities include: subdivision of land; construction or alteration of structures, roads, utilities, and other facilities; installation of septic systems; grading; deposit of refuse, debris, or fill materials; and clearing of natural vegetative cover (with the exception of agricultural activities)

**Development Agreement**: A legislatively-approved contract between a jurisdiction and a person having legal or equitable interest in real property within the jurisdiction (California Government Code §65865 et seq.) that “freezes” certain rules, regulations, and polices applicable to development of a property for a specified period of time, usually in exchange for certain concessions by the owner.

**Direct Effects**: Effects that are caused by an action and occur at the same time and place.

**Discretionary Approval/Decision**: A decision requiring the exercise of judgment, deliberation, or decision on the part of the decision-making authority in the process of approving or disapproving a particular activity, as distinguished from situations where the decision-making authority merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations. An approval by a decision-making body that has the legal discretion to approve or deny a project or action.

**Discretionary Project**: A project that requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations(source: CEQA Guidelines §15357).

**Dispersion**: The process by which atmospheric pollutants disseminate due to wind and vertical stability.

**District**: (1) An area of a city or county that has a unique character identifiable as different from surrounding areas because of distinctive architecture, streets, geographic features, culture, landmarks, activities, or land uses. (2) A portion of the territory of a city or county within which uniform zoning regulations and requirements apply; a zone.

**Diversity**: Differences among otherwise similar elements that give them unique forms and qualities (e.g., housing diversity can be achieved by differences in unit size, tenure, or cost.)

**Drainage**: An area that collects and diverts rain water and urban runoff down slope.

**Drainage Area**: The portion of the earth’s surface from which precipitation or other runoff flows to a given location. With respect to a highway, this location may be a culvert, the farthest point of a channel, or an inlet to a roadway drainage system.

**Dust**: Solid particulate matter than can become airborne.

**Dwelling, Single-Family**: A detached building constructed in conformance with the Uniform Building Code.

**Dwelling, Two-Family**: A building containing two separate dwelling units.

**Dwelling Unit**: A room or group of rooms (including sleeping, eating, cooking, and sanitation facilities, but not more than one kitchen), that constitutes an independent housekeeping unit, occupied or intended for occupancy by one household on a long-term basis.
Easement (preservation or conservation): A right given by the owner of land to another party for specific limited use of that land. An easement may be acquired by a government through dedication when the purchase of an entire interest in the property may be too expensive or unnecessary.

Effects: Effects, under NEPA, include: (a) direct effects, which are caused by the action and occur at the same time and place and (b) indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects and impacts as used in federal regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial. (source: 40 CFR 1508.8)

Under CEQA, “effects” and “impacts” as used in the CEQA Guidelines are synonymous. Effects include: (a) Direct or primary effects which are caused by the project and occur at the same time and place; (b) Indirect or secondary effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects analyzed under CEQA must be related to a physical change (source: CEQA Guidelines §15358).

Effluent: Wastewater or other liquid, partially or completely treated or in its natural state, flowing from a treatment plant.

Elderly Household: As defined by U.S. Department of Housing and Urban Development (HUD), elderly households are one- or two-member (family or non-family) households in which the head or spouse is age 62 years or older.

Emergency: Emergency means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to life, health, property, or essential public services. Emergency includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage (CEQA Guidelines §15359)

Emergency Shelter: A facility that provides immediate and short-term housing and supplemental services for the homeless. Supplemental services may include food, counseling, and access to other social programs.

Emission: An air contaminant released to the atmosphere. The act of passing into the atmosphere of an air contaminant or a gas stream that may or may not contain an air contaminant or the material so passed into the atmosphere (source: Ventura Air Pollution Control District).

Emission Factor: For stationary sources, the relationship between the amount of pollution produced and the amount of raw material processed or burned. For mobile sources, the relationship between the amount of pollution produced and the number of vehicle miles traveled. By using the emission factor of a pollutant and specific data regarding quantities of materials used by a given source, it is possible to compute emissions for the source. This approach is used in preparing an emissions inventory.

Emission Inventory: An estimate of the amount of pollutants emitted into the atmosphere from major mobile, stationary, area-wide, and natural source categories over a specific period of time such as a day or a year.
Emission Offsets (Emissions Trading): A rule-making concept whereby approval of a new or modified stationary source of air pollution is conditional on the reduction of emissions from other existing stationary sources of air pollution. These reductions are required in addition to reductions required by best available control technology.

Emission Rate: The weight of a pollutant emitted per unit of time (e.g., tons / year).

Emission Standards: The federal Environmental Protection Agency (EPA), California Air Resources Board (ARB), or air district standards or limits for air contaminant emissions. The maximum amount of a pollutant that is allowed to be discharged from a polluting source such as an automobile or smoke stack

Encroachment: The occupancy of project right-of-way by non-project structures or objects of any kind or character; also, activities of other parties within the operating right-of-way.

Endangered Species: A species in danger of extinction throughout all or a significant portion of its range. The species is determined to be endangered by the U.S. Fish and Wildlife Service in accordance with the federal Endangered Species Act of 1973, resulting in the prohibition of activities that harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct without a incidental take permit.

In accordance with CEQA, “Species” means a species or subspecies of animal or plant or a variety of plant. A species of animal or plant is: “Endangered” when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. A species of animal or plant shall be presumed to be endangered, rare or threatened, as it is listed in: (1) Sections 670.2 or 670.5, Title 14, California; (2) Title 50, Code of Federal Regulations Section 17.11 or 17.12 pursuant to the Federal Endangered Species Act as rare, threatened, or endangered. A species not included in any listing identified in subsection (c) shall nevertheless be considered to be endangered, rare or threatened, if the species can be shown to meet specified criteria. This definition shall not include any species of the Class Insecta which is a pest whose protection under the provisions of CEQA would present an overwhelming and overriding risk to man as determined by: The Director of Food and Agriculture with regard to economic pests; or The Director of Health Services with regard to health risks (source: CEQA Guidelines §15380).

Endangered Species Act: A federal law that protects threatened and/or endangered species from becoming extinct.

Environment: The physical conditions which exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved shall be the area in which significant effects would occur either directly or indirectly as a result of the project. The "environment" includes both natural and man-made conditions (source: CEQA Guidelines §15360).

Environmental Assessment: Environmental assessment, under NEPA, is a concise public document for which a federal agency is responsible that serves to briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact; aid an agency's compliance with the NEPA when no environmental impact statement is necessary; and facilitate preparation of a statement when one is necessary. The environmental assessment includes brief discussions of the need for the proposal, of alternatives, of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted. (source: 40 CFR 1508.9)

Environmental Documents: Under NEPA, includes environmental assessments, environmental impact statements, findings of no significant impact, and notices of intent. (source: 40 CFR 1508.10) Under CEQA, environmental documents means Initial Studies, Negative Declarations, draft and final EIRs,
documents prepared as substitutes for EIRs and Negative Declarations under a program certified pursuant to Public Resources Code Section 21080.5, and documents prepared under NEPA and used by a state or local agency in the place of an Initial Study, Negative Declaration, or an EIR (source: CEQA Guidelines §15361).

**Environmental Impact Report:** A detailed statement prepared under the California Environmental Quality Act (CEQA) describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the effects. The term “EIR” may mean either a draft or a final EIR depending on the context. A Draft EIR means an EIR containing the information specified in CEQA Guidelines §§15122 through 15131. A Final EIR means an EIR containing the information contained in the draft EIR, comments either verbatim or in summary received in the review process, a list of persons commenting, and the response of the Lead Agency to the comments received (source: CEQA Guidelines §15362).

**Environmental Impact Statement:** An environmental impact statement is a detailed written statement as required by NEPA for major federal actions. For a proposed major federal action, the environmental impact statement discloses to the public the environmental impacts and alternatives to the action, unavoidable environmental impacts, and other analyses.

**Environmental Justice:** The fair treatment of people of all races and incomes with respect to development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of negative environmental and economic impacts resulting from the execution of environmental programs.

**Ephemeral Stream:** Ephemeral streams have flowing water only during and for a short duration after precipitation events in a typical year. Groundwater is not a source of water for the stream.

**Epicenter:** The part of the earth’s surface directly above the focus of an earthquake.

**Equivalent Noise Level (Leq):** A single-number representation of the fluctuating sound level in decibels over a specified period of time. It is a sound-energy average of the fluctuating level.

**Erosion:** The process by which material is removed from the earth's surface (including weathering, dissolution, abrasion, and transportation), most commonly by wind or water.

**Erosion Control:** The stabilization of cut and fill slopes and other areas.

**Ethnography:** The study of a culture to obtain information on past and present ways of life.

**Evapotranspiration:** The quantity of water transpired (given off), retained in plant tissues, and evaporated from plant tissues and surrounding soil surface. Quantitatively, it is expressed in terms of depth of water per unit area during a specified period of time.

**Excavation:** A systematic process of digging archaeological sites, removing the soil and observing the provenience and context of the finds (both cultural and non-cultural) contained within, and recording them in a three-dimensional way.

**Exceedance:** A measured level of an air pollutant higher than the national or state ambient air quality standards.

**Expansive Soils:** Soils that swell when they absorb water and shrink as they dry.

**Extirpation:** The local extinction of a species that is no longer found in a locality or country, but exists elsewhere in the world.
**Fall:** A fall is a movement of unattached soil or rock from a steep slope along a surface on which little or no shear displacement takes place. The material descends mainly through the air by falling.

**Family:** (1) Two or more persons related by birth, marriage, or adoption [U.S. Bureau of the Census]. (2) An individual or a group of persons living together who constitute a bona fide single-family housekeeping unit in a dwelling unit, not including a fraternity, sorority, club, or other group of persons occupying a hotel, lodging house or institution of any kind [California].

**Farmland:** Refers to eight classifications of land mapped by the U.S. Department of Agriculture Soil Conservation Service. The five agricultural classifications, except Grazing Land, do not include publicly owned lands for which there is an adopted policy preventing agricultural use. They are: **Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance,** and **Grazing Land.**

**Farmland of Local Importance:** Lands of importance to the local agricultural economy, as determined by each county's board of supervisors and local advisory committee. Each county has developed its own definition of Farmland of Local Importance. (Source: Natural Resource Conservation Service)

**Farmland of Statewide Importance:** Lands similar to Prime Farmland but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. These lands have the same reliable source of adequate quality irrigation water available during the growing season as required for Prime Farmland. The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. (Source: U.S. Department of Agriculture Soil Conservation Service)

**FAST ACT (MAP-21):** On July 6, 2012 President Obama signed MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), into law. This bill for the first time introduced performance measures into transportation policy, aiming to include real world data in the planning and prioritizing of our nation’s transportation investment needs. The bill expired on September 30, 2014, but Congress has authorized several extensions while a full reauthorization bill is debated. The implementation of MAP-21 continues to unfold, with the Federal Highway Administration releasing a number of related proposed rulemakings in 2014 and 2015. Caltrans is taking an active role in both the reauthorization and implementation processes, addressing and advocating for California’s unique issues and goals.

**Fault:** A fracture in the earth's crust forming a boundary between rock masses that have shifted. An active fault is a fault that has moved recently and that is likely to again. An inactive fault is a fault that shows no evidence of movement in recent geologic time and no potential for movement in the relatively near future.

**Feasible:** Feasible means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (source: CEQA Guidelines §15364).

**Feature:** A large, complex artifact or part of a site such as a hearth, cairn, house pit, rock alignment, or activity area.

**Federal Clean Air Act (FCAA):** A federal law passed in 1970 and amended in 1974, 1977, and 1990 that forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, mobile and stationary control measures, air toxics standards, acid rain control measures, and enforcement provisions.

**Federal Emergency Management Agency (FEMA):** The federal agency under which the National Flood Insurance Program is administered.
Federal Implementation Plan (FIP): In the absence of an approved State Implementation Plan (SIP), a plan prepared by the U.S. EPA that provides measures that non-attainment areas must take to meet the requirements of the Federal Clean Air Act.

Filtration: The mechanical process that removes particulate matter from water by passing through sand or other media.

Final Map: Final map subdivisions (also called tract maps or major subdivisions) are approved maps of land divisions that create five or more lots that are filed in the county recorder’s office. It shows surveyed lot lines, street rights-of-way, easements, monuments, and distances, angles, and bearings, pertaining to the exact dimensions of all parcels, street lines, and so forth.

Finding of No Significant Impact (FONSI): A finding of no significant impact, under NEPA, is a document by a federal agency briefly presenting the reasons why an action will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. It includes the environmental assessment or a summary of it and shall note any other environmental documents related to it. A FONSI is the federal equivalent to a CEQA Negative Declaration/Mitigated Negative Declaration. (Source: 40 CFR 1508.13)

Fine Particulate Matter (PM$_{10}$): PM$_{10}$ causes a greater health risk than larger-sized particles, since these fine particles can be inhaled more easily and irritate the lungs by themselves and in combination with gases.

Fire Hazard Zone: An area where, due to slope, fuel, weather, or other fire-related conditions, the potential loss of life and property from a fire necessitates special fire protection measures and planning before development occurs.

Fixed Noise Source: A stationary device that creates sounds while fixed or motionless, including but not limited to, residential, agricultural, industrial, and commercial machinery and equipment, pumps, fans, compressors, air conditioners, and refrigeration equipment.

Flood: A general and temporary condition of partial or complete inundation of normally dry land areas from: (1) overflow of inland or tidal waters; (2) the unusual and rapid accumulation or runoff of surface waters from any source; (3) mudslides (i.e. mudflows) which are proximately caused by flood, and are akin to a river of liquid and flowing mud on the surface of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current; and (4) the collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding the cyclical levels that result in flood.

Flood, 100-Year: The magnitude of a flood expected to occur on the average every 100 years, based on historical data. The 100-year flood has a 1/100, or one percent, chance of occurring in any given year.

Flood Insurance Rate Map (FIRM): For each community, the official map on which the Federal Insurance Administration has delineated areas of special flood hazard and the risk premium zones applicable to that community.

Floodplain: Any land area susceptible to being inundated by flood waters from any source. The relatively level land area on either side of the banks of a stream regularly subject to flooding. That part of the floodplain subject to a one percent chance of flooding in any given year is designated as an “area of special flood hazard” by the Federal Insurance Administration.

Floodplain Management: The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to, emergency preparedness plans, flood control works, and floodplain management regulations.
Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the “base flood” without cumulatively increasing the water surface elevation more than one foot. No development is allowed in floodways.

Floor Area Ratio: The ratio of gross floor area of all buildings permitted on a site divided by the total net area of the site, expressed in decimals to one or two places. For example, on a site with 10,000 net square feet of land area, a Floor Area Ratio of 1.0 will allow a maximum of 10,000 gross square feet of building floor area to be built. On the same site, an FAR of 1.5 would allow 15,000 square feet of floor area; an FAR of 2.0 would allow 20,000 square feet; and an FAR of 0.5 would allow only 5,000 square feet. Also commonly used in zoning, FARs typically are applied on a parcel-by-parcel basis as opposed to an average FAR for an entire land use or zoning district.

Flow: A flow is a sudden movement of a soil mass in which individual particles travel separately in a fluid motion. Debris and mudflows are rapid and can be related to excess rainfall on slopes often where vegetation has been removed. Debris flows often have the consistency of cement and can result in catastrophic effects to structures.

Footprint (Building): The outline of the ground area covered by a building.

Freeway: A high-speed, high-capacity, limited-access road serving regional and county-wide travel. Such roads are free of tolls, as contrasted with “turnpikes” or other “toll roads” now being introduced into southern California. Freeways generally are used for long trips between major land use generators. At Level of Service “E,” they carry approximately 1,875 vehicles per lane per hour, in both directions. Major streets cross at a different grade level.

Fugitive Dust: Dust particles that are introduced into the air through certain activities such as soil cultivation, or vehicles operating on open fields or dirt roadways. A subset of fugitive emissions.

Fugitive Emissions: Emissions not caught by a capture system that are often due to equipment leaks, evaporative processes, and windblown disturbances.

Gateway: A point along a roadway entering a city or county at which a motorist gains a sense of having left the environs and of having entered the city or county.

General Law City: A city incorporated under and administered in accordance with the general laws of the state.

General Plan: A compendium of city or county policies regarding long-term development, in the form of maps and accompanying text. A General Plan is a legal document required of each local agency by the State of California Government Code Section 65301 and adopted by a city council or board of supervisors. California law requires the preparation of seven elements or chapters in a General Plan: Land Use, Housing, Circulation, Conservation, Open Space, Noise, and Safety. Additional elements are permitted.

General Plan Amendment: A change or addition to a community’s general plan. A general plan can be amended up to four times a year.

General Plan Consistency: Compatibility and agreement with a general plan. Consistency exists when the standards and criteria of a general plan are met or exceeded.

Geographic Information System (GIS): A computer system that provides digitized data and information from a variety of sources, such as topographical and soil maps, aerial and satellite photography, remote sensing devices, etc. capable of storing, analyzing, and displaying data and describing places on the earth’s surface.
**Geologic Review:** The analysis of geologic hazards, including all potential seismic hazards, surface ruptures, liquefaction, landsliding, mudsliding, and the potential for erosion and sedimentation.

**Geological:** Pertaining to rock or solid matter.

**Geometric Improvements:** Improvements to roads such as widening, adding signals to intersections, or adding turning lanes. These are required to mitigate traffic impacts and maintain a required level of service (LOS).

**Geomorphic:** Relating to the form or surface features of the earth.

**Glare:** A light source, either reflected or direct, that is annoying or distracting. The effect produced by lighting sufficient to cause annoyance, discomfort, or loss of visual performance and visibility. Glare can occur when the luminaire or associated lens of a light fixture is directly viewable from a location off the property that it serves.

**Grade:** Adjacent ground level. For purposes of building height measurement, grade is the average of the finished ground level at the center of all walls of a building or other datum point established by the division of building and safety.

**Grading:** Alteration of existing slope and shape of the ground surface.

**Ground Failure:** Ground movement or rupture caused by strong shaking during an earthquake. Includes landslide, lateral spreading, liquefaction, and subsidence.

**Ground Shaking:** Ground movement resulting from the transmission of seismic waves during an earthquake.

**Groundwater:** The term usually refers to the “saturated” zone in the ground where all the pore space between the soil particles is occupied by water. Water under the earth's surface, often confined to aquifers capable of supplying wells and springs. Does not include water that is being produced with oil in the production of oil and gas or in a bona fide mining operation.

**Groundwater Basin:** A groundwater reservoir defined by the entire overlying land surface and the underlying aquifers that contain water stored in the reservoir. Boundaries of successively deeper aquifers may differ and make it difficult to define the limits of the basin.

**Groundwater Recharge:** The natural process of infiltration and percolation of rainwater from land areas or streams through permeable soils into water-holding rocks that provide underground storage ("i.e., aquifers"); the action of increasing groundwater storage by natural conditions or by human activity. See also Artificial Recharge.

**Groundwater Table:** The upper surface of the zone of saturation (all pores of subsoil filled with water), except where the surface if formed by an impermeable body.

**Group Quarters:** A residential living arrangement, other than the usual house, apartment, or mobile home, in which two or more unrelated persons share living quarters and cooking facilities. **Institutional** group quarters include nursing homes, orphanages, and prisons. **Non-institutional** group quarters include dormitories, shelters, and large boardinghouses.

**Growth Area:** A geographic subarea used in Ventura County population forecasts to refer to an area where urban development has already taken place or is expected to take place.
**Growth Management:** The use by a community of a wide range of techniques in combination to determine the amount, type, and rate of development desired by the community and to channel that growth into designated areas. Growth management policies can be implemented through growth rates, zoning, capital improvement programs, public facilities ordinances, urban limit lines, standards for levels of service, and other programs.

**Growth Management Plan (GMP):** A plan developed for a given geographical region (e.g., by the Southern California Association of Governments [SCAG]) that contains demographic projections (i.e., housing units, employment, and population for the region. The plan provides recommendations for local governments to better accommodate the growth projected by occur and reduce environmental impacts.

**Grubbed:** Vegetation that has been removed by mechanical or manual methods.

**Habitat:** A place where a plant or animal naturally or normally lives or grows.

**Habitat Conservation Plan (HCP):** A plan required in support of a federal Section 10(a) permit under the federal Endangered Species Act.

**Handicapped:** Persons determined to have a physical impairment or mental disorder that is expected to be of long-continued or indefinite duration and is of such a nature that the person's ability to live independently could be improved by more suitable housing conditions.

**Hazardous Material:** A substance or combination of substances that because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious, irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of or otherwise managed.

**Hazardous Waste:** A waste or combination of wastes that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or an increase in serious irreversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. A hazardous material than cannot be reused or recycled. A hazardous waste possesses at least one of four characteristics—ignitability, corrosivity, reactivity, or toxicity—or appears on special EPA or state lists. Hazardous waste is regulated under the federal Resource Conservation and Recovery Act and the California Health and Safety Code.

**Health Risk Assessment (HRA):** A document that identifies the risks and quantities of possible adverse health effects that may result from exposure to emissions of toxic air contaminants. A health risk assessment cannot predict specific health effects; it only describes the increased possibility of adverse health effects based on the best scientific information available.

**Height:** The vertical distance from the adjacent grade to the highest point of that which is being measured.

**Herbicides:** Chemical compounds that are used to destroy or control the growth of weeds and other undesirable plants.

**Hertz:** Unit of measurement of frequency, numerically equal to cycles per second.

**High Fire Hazard Areas:** Certain areas in the unincorporated territory of the county classified by the county fire protection district and defined as any areas within 500 feet of uncultivated brush, grass, or forest-covered land wherein authorized representatives of said district deem a potential fire hazard to exist due to the presence of such flammable material.
**High-Occupancy Vehicle (HOV):** A motor vehicle that is carrying at least a minimum specified number of passengers (normally at least two or more, sometimes three or more). It can be a bus, a taxi with passengers, or a car or van used for carpooling.

**Highway:** High-speed, high-capacity, limited-access transportation facility serving regional and county-wide travel. Highways may cross at a different grade level.

**Hillsides:** Land that has an average percent of slope equal to or exceeding 15 percent.

**Historic Preservation:** The preservation of historically significant structures and neighborhoods until such time as, and in order to facilitate, restoration and rehabilitation of the building(s) to a former condition.

**Home Based Business Enclave:** Attached or detached residential neighborhood comprised of dwelling units that allow opportunities for small, entrepreneurial business owners to operate out of their homes.

**Home Occupation:** A commercial activity conducted solely by the occupants of a particular dwelling unit in a manner incidental to residential occupancy.

**Homeless:** Persons and families who lack a fixed, regular, and adequate nighttime residence. Includes those staying in temporary or emergency shelters or who are accommodated with friends or others with the understanding that shelter is being provided as a last resort. California Housing Element law, Section 65583(c)(1) requires all cities and counties to address the housing needs of the homeless.

**Hotel:** A facility in which guest rooms or suites are offered to the general public for lodging with or without meals and for compensation, and where no provision is made for cooking in any individual guest room or suite.

**Hot Spot:** A localized concentration of an air pollutant associated with restricted dispersion conditions, often occurring in such places as street intersections or close to the source of emissions.

**Household:** The U.S. Census Bureau defines a household as all persons living in a housing unit whether or not they are related. A single person living in an apartment as well as a family living in a house is considered a household. Household does not include individuals in dormitories, prisons, convalescent homes, or other group quarters.

**Household Income:** The total income of all the persons living in a household. A household is usually described as very low income, low income, moderate income, and upper income based upon household size and income, relative to the regional median income.

**Households, Market Rate:** Households who, as determined by the county or county, have the financial capability to meet their housing needs without sacrificing other essential needs.

**Households, Non-Market-Rate:** Households who, as determined by the city or county, do not have the financial capability to meet their housing needs without sacrificing other essential needs.

**Housing and Community Development, California Department of (HCD):** The department of the California State Government that has responsibility for housing policy and programs. HCD establishes the guidelines for preparation of local housing elements, prepares the statewide housing element, and offers technical assistance to local jurisdictions.

**Housing and Urban Development, U.S. Department of (HUD):** The cabinet level department of the federal government responsible for housing, housing assistance, and urban development at the national
level. Housing programs administered through HUD include Community Development Block Grant (CDBG), HOME, and Section 8.

**Housing Element**: One of the seven state-mandated elements of a local general plan, it assesses the existing and projected housing needs of all economic segments of the community, identifies potential sites adequate to provide the amount and kind of housing needed, and contains adopted goals, policies, and implementation programs for the preservation, improvement, and development of housing. Under State law, a housing element must be updated every five years.

**Housing and Urban Development, U.S. Department of (HUD)**: A cabinet-level department of the federal government that administers housing and community development programs.

**Housing Subsidy**: Housing subsidies refer to government assistance aimed at reducing housing sales or rent prices to more affordable levels. Two general types of housing subsidy exist. Where a housing subsidy is linked to a particular house or apartment, housing subsidy is "project" or "unit" based. In Section 8 rental assistance programs the subsidy is linked to the family and assistance provided to any number of families accepted by willing private landlords. This type of subsidy is said to be "tenant based."

**Housing Unit**: The place of permanent or customary abode of a person or family. A housing unit may be a single-family dwelling, a multi-family dwelling, a condominium, a modular home, a mobile home, a cooperative, or any other residential unit considered real property under state law. A housing unit has, at least, cooking facilities, a bathroom, and a place to sleep. It also is a dwelling that cannot be moved without substantial damage or unreasonable cost.

**Human Scale**: The proportional relationship of a particular building, structure, or streetscape element to human form and function.

**Hydraulics**: The study and technological application of the behavior of fluids.

**Hydrocarbons (HC)**: Compounds containing various combinations of hydrogen and carbon atoms. They may be emitted into the air by natural sources (e.g., trees) and as a result of fossil and vegetative fuel combustion, fuel volatilization, and solvent use. Hydrocarbons are a major contributor to smog.

**Hydrogen Sulfide (H₂S)**: A colorless, flammable, poisonous compound having a characteristic rotten-egg odor. It is used in industrial processes and may be emitted into the air.

**Hydrology**: The study of the water cycle.

**Impact**: The effect, influence, or imprint of an activity or the environment. Impacts include: direct or primary effects that are caused by the project and occur at the same time and place; indirect or secondary effects that are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate and related effects on air and water and other natural systems, including ecosystems.

**Impervious Surface**: Ground surface that cannot be penetrated by water. Includes paved and compacted surfaces, as well as those covered by buildings.

**Important Farmlands**: Important farmlands include prime farmlands, farmlands of statewide importance, unique farmlands, and farmlands of local importance as defined and mapped by the California Department of Conservation (source: *Advisory Guidelines for the Farmland Mapping and Monitoring Program*, California Department of Conservation-Division of Land Resource Protection, 1984)
**Imported Water:** Water that has originated from one hydrologic region and is transferred to another hydrologic region.

**Impoundment:** A body of water, such as a pond, confined by a dam, dike, floodgate, or other barrier.

**Inclusionary Zoning:** Regulations that increase housing choice by requiring a minimum percentage of more diverse and affordable housing for low- and moderate-income households.

**Income Categories/Levels:** Four categories are used to classify a household according to the median income for the county. Under state housing statutes, these categories are as follows: Very Low (0 to 50% of county median); Low (50% to 80% of county median); Moderate (80% to 120% of county median); and Upper (over 120% of county median). Four levels are included relating to the Orange County HUD median income: Income I is defined as households earning 0-30% of the HUD county median income. Income II is defined as households earning 30-50% of the HUD county median income. Income III is defined as households earning 50-80% of the HUD county median income. Income IV is defined as households earning 80-120% of the HUD county median income.

**Incorporation:** Creation of a new city.

**Indirect Impact:** Effects caused by an action that are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

**Indirect Source:** Any facility, building, structure, or installation, or combination thereof, that generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state ambient air quality standard. Examples of indirect sources include employment sites, shopping centers, sports facilities, housing developments, airports, commercial and industrial development, and parking lots and garages.

**Indirect Source Control Program:** Rules, regulations, local ordinances and land use controls, and other regulatory strategies of air pollution control districts or local governments used to control or reduce emissions associated with new and existing indirect sources. Indirect source control programs include regulatory strategies such as transportation control measures (e.g., South Coast’s Regulation XV for employer-based trip reduction); parking charges; land use controls that reduce the need for vehicle travel and increase transit, bicycle, and pedestrian access; and source-specific regulations such as truck idling and travel schedule requirements.

**Individual Cancer Risk:** The probability, expressed in chances in a million, that a person experiencing 70 years of continuous areawide outdoor exposure to a toxic air contaminant will develop cancer.

**Industrial:** The manufacture, production, and processing of consumer goods. Industrial is often divided into “heavy industrial” uses, such as construction yards, quarrying, and factories; and “light industrial” uses, such as research and development and less intensive warehousing and manufacturing.

**Industry, Basic:** The segment of economic activity that brings dollars to a region from other areas. Traditional examples are manufacturing, mining, and agriculture. The products of all of these activities are exported (sold) to other regions. The money brought into the local economy is used to purchase locally-provided goods and services as well as items that are not available locally and that must be imported from other regions. Other, less traditional examples of basic industry are tourism, higher education, and retirement activities that also bring new money into a region.
Industry, Non-basic: The segment of economic activity that is supported by the circulation of dollars within a region. Examples are the wholesale, retail, and service functions that supply goods and services to local sources of demand such as businesses, public agencies, and households.

Infill Development: Development of vacant land (usually individual lots or leftover properties) within areas that are already largely developed.

Infiltration: The introduction of underground water, such as groundwater, into wastewater collection systems. Infiltration results in increased wastewater flow levels.

Infiltration System: An infiltration basin designed to capture runoff volume from the water quality design storm and infiltrate it to the soil.

Inflow: Surface water, such as rainfall runoff, that enters a wastewater collection system through manhole covers and joints or cracks in pipes. Inflow results in increased wastewater flow levels.

Infrastructure: Permanent utility installations, including roads, water supply lines, sewage collection pipes, and power and communications lines.

Initial Study: Under CEQA, a preliminary analysis prepared by the Lead Agency to determine whether an EIR, a Negative Declaration, or Mitigated Negative Declaration must be prepared, or to identify the significant environmental effects to be analyzed in an EIR (source: CEQA Guidelines §15365).

Initiative: A legislative measure that has been placed on the election ballot as a result of voter signatures. At the local level, initiatives usually propose changes or additions to the general plan and zoning ordinance. The right to initiative is guaranteed by the California Constitution.

In situ: In place. Applied to archaeological remains found in their original, undisturbed location or position.

Institutional Use: (1) Publicly or privately owned and operated activities such as hospitals, convalescent hospitals, intermediate care facilities, nursing homes, museums, and schools and colleges; (2) churches and other religious organizations; and (3) other non-profit activities of a welfare, educational, or philanthropic nature that can not be considered residential, commercial, or industrial.

Integrated Waste Management Act (IWMA): Also known as AB 939 (Chapter 1095, Statutes of 1989), the IWMA created the Integrated Waste Management Board, required each jurisdiction in the state to submit detailed solid waste planning documents for Board approval, set diversion requirements of 25 percent in 1995 and 50 percent in 2000, established a comprehensive statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities, and authorized local jurisdictions to impose fees based on the types or amounts of solid waste generated.

Integrated Waste Management Board (IWMD): The state agency within Cal EPA responsible for solid waste management (non-hazardous).

Intensity, Building: For residential uses, the actual number or the allowable range of dwelling units per net or gross acre. For non-residential uses, the actual or the maximum permitted floor area ratios (FARs).

Inter-agency: Indicates cooperation between or among two or more discrete agencies in regard to a specific program.

Inter Alia: Latin: "among other things," "for example" or "including". Legal drafters would use it to precede a list of examples or samples covered by a more general
**Interest, Fee:** Entitles a land owner to exercise complete control over use of land, subject only to government land use regulations.

**Interest, Less-than-fee:** The purchase of interest in land rather than outright ownership; includes the purchase of development rights via conservation, open space, or scenic easements.

**Intermittent Stream:** Intermittent streams have flowing water during certain times of the year, when groundwater provides water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow. During dry periods, intermittent streams may not have flowing water.

**Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA):** This Congressional act requires states to develop a Statewide Transportation Plan and a Statewide Transportation Improvements Program (STIP) that identifies short-term project needs and priorities. It has also been a major source of funding for transportation planning and encourages the linking of transportation and community planning.

**Intersection Capacity:** The maximum number of vehicles that has a reasonable expectation of passing through an intersection in one direction during a given time period under prevailing roadway and traffic conditions.

**Intersection Capacity Utilization Method (ICU):** A method of analyzing intersection level of service by calculating a volume-to-capacity (V/C) ratio for each governing "critical" movement during a traffic signal phase. The V/C ratio for each phase is summated with the others at the intersection to produce an overall V/C ratio for the intersection as a whole. The ICU is usually expressed as a percent. The percent represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. The V/C ratio represents the percent of intersection capacity used. For example, a V/C ratio of 0.85 indicates that 85 percent of capacity is being used.

**Intrusive Noise:** Noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or information content as well as the prevailing ambient noise level.

**Jobs/Housing Balance or Jobs/Housing Ratio:** The jobs/housing ratio divides the number of jobs in an area by the number of employed residents. A ratio of 1.0 typically indicates a balance. A ratio greater than 1.0 indicates a net in-commute; less than 1.0 indicates a net out-commute.

**Jurisdiction by Law:** Jurisdiction by law means the authority of any public agency: (a) To grant a permit or other entitlement for use; (b) To provide funding for the project in question; or (c) To exercise authority over resources which may be affected by the project. A city or county will have jurisdiction by law with respect to a project when the city or county having primary jurisdiction over the area involved is: (a) The site of the project; (b) The area in which the major environmental effects will occur; and/or (c) The area in which reside those citizens most directly concerned by any such environmental effects. Where an agency having jurisdiction by law must exercise discretionary authority over a project in order for the project to proceed, it is also a Responsible Agency (source: CEQA Guidelines §15366). Jurisdiction by law means agency authority to approve, veto, or finance all or part of the proposal. (source: 40 CFR 1508.15)

**Kilowatt (kW):** One kilowatt is equal to 1,000 watts. Refers to the instantaneous amount of electricity used or generated.

**Landfill:** An area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.

**Landmark:** (1) A building, site, object, structure, or significant tree, having historical, architectural, social, or cultural significance and marked for preservation by the local, state, or federal government; (2)
A visually prominent or outstanding structure or natural feature that functions as a point of orientation or identification.

**Landslide:** Down slope movement of soil and/or rock, that typically occurs during an earthquake or following heavy rainfall.

**Land Use:** The purpose or activity for which a piece of land or its buildings is designed, arranged, or intended, or for which it is occupied or maintained.

**Land Use Classification:** A system for classifying and designating the appropriate use of properties.

**Land Use Element:** A required element of the General Plan that uses text and maps to designate the future use or reuse of land within a given jurisdiction's planning area. The land use element serves as a guide to the structuring of zoning and subdivision controls, urban renewal, and capital improvements programs, and to official decisions regarding the distribution and intensity of development and the location of public facilities and open space. Designates the general location and intensity of housing, business, industry, open space, education, public buildings and grounds, waste disposal facilities, and other land uses.

**Land Use Plan:** An adopted map depicting the approximate location of residential, commercial, public, semi-public, and private uses, open space, and road systems with a statistical summary of areas and densities for these land uses.

**Land Use Regulation:** A term encompassing the regulation of land in general and often used to mean those regulations incorporated in the General Plan, as distinct from zoning regulations (which are more specific).

**Large Family/Household:** A family of 5 or more persons.

**Lateral Spreading:** Lateral movement of soil, often as a result of liquefaction during an earthquake.

**Ldn:** Day-Night Average Sound Level. The A-weighted average sound level for a given area (measured in decibels) during a 24-hour period with a 10 dB weighting applied to night-time sound levels. The Ldn is approximately numerically equal to the CNEL for most environmental settings.

**Lead:** A gray-white metal that is soft, malleable, ductile, and resistant to corrosion. Sources of lead resulting in concentrations in the air include industrial sources and crustal weathering of soils followed by fugitive dust emissions. Health effects from exposure to lead include brain and kidney damage and learning disabilities. Lead is the only substance that is currently listed as both a criteria air pollutant and a toxic air contaminant.

**Lead Agency:** The public agency that has the principal responsibility for carrying out or approving a project. The Lead Agency will decide whether an EIR or Negative Declaration will be required for the project and will cause the document to be prepared (source: CEQA Guidelines §15367). Under NEPA, the lead agency is the agency or agencies preparing or having taken primary responsibility for preparing the environmental impact statement. (source: 40 CFR 1508.16)

**Lease:** A contractual agreement by which an owner of real property (the lessor) gives the right of possession to another (a lessee) for a specified period of time (term) and for a specified consideration (rent).

**Leq:** The energy equivalent level, defined as the average sound level on the basis of sound energy (or sound pressure squared). The Leq is a "dosage" type measure and is the basis for the descriptors used in current standards, such as the 24-hour CNEL used by the State of California.
Level of Concern (LOC): The concentration of a potentially hazardous material in the air above which there may be serious irreversible health effects or death as a result of a single exposure for a relatively short period of time.

Level of Service (LOS): LOS is the qualitative measure that incorporates the collective factors of speed, travel time, traffic interruption, freedom to maneuver, safety, driving comfort and convenience, and operating costs provided by a highway facility under a particular volume condition.

- **Level of Service A**: Indicates a relatively free flow of traffic, with little or no limitation on vehicle movement or speed.

- **Level of Service B**: Describes a steady flow of traffic, with only slight delays in vehicle movement and speed. All queues clear in a single signal cycle.

- **Level of Service C**: Denotes a reasonably steady, high-volume flow of traffic, with some limitations on movement and speed, and occasional backups on critical approaches.

- **Level of Service D**: Designates the level where traffic nears an unstable flow. Intersections still function, but short queues develop and cars may have to wait through one cycle during short peaks.

- **Level of Service E**: Represents traffic characterized by slow movement and frequent (although momentary) stoppages. This type of congestion is considered severe, but is not uncommon at peak traffic hours, with frequent stopping, long-standing queues, and blocked intersections.

- **Level of Service F**: Describes unsatisfactory stop-and-go traffic characterized by “traffic jams” and stoppages of long duration. Vehicles at signalized intersections usually have to wait through one or more signal changes, and “upstream” intersections may be blocked by the long queues.

**Life-cycle Costing**: A method of evaluating a capital investment that takes into account the sum total of all costs associated with the investment over the lifetime of the project.

**Light (duty) Rail Transit (LRT)**: "Street cars" or "trolley cars" that typically operate entirely or substantially in mixed traffic and in non-exclusive, at-grade rights-of-way. Passengers typically board vehicles from the street level (as opposed to a platform that is level with the train) and the driver may collect fares. Vehicles are each electrically self-propelled and usually operate in one or two-car trains.

**Line Source**: A long, narrow source of air pollutant emissions such as a roadway or runway.

**Liquefaction**: Liquefaction is the state or process in which surface and near-surface material (soils, alluvium, etc.) is transformed from a solid into a liquid state. This occurs due to increased pore pressure and reduced effective stress. Soil may become liquefied, for example, during and immediately following an earthquake.

**Lithic**: Of and pertaining to a stone (obsidian, chert, basalt, etc.), as “lithic artifacts.”

**Live-work Quarters**: Buildings or spaces within buildings that are used jointly for commercial and residential purposes where the residential use of the space is secondary or accessory to the primary use as a place of work.

**Local Agency**: Local agency means any public agency other than a state agency, board, or commission. Local agency includes but is not limited to cities, counties, charter cities and counties, districts, school districts, special districts, redevelopment agencies, local agency formation commissions, and any board, commission, or organizational subdivision of a local agency when so designated by order or resolution of the governing legislative body of the local agency (source: CEQA Guidelines §15368).
**Local Coastal Program (LCP):** A combination of a local governments land use plans, zoning ordinances, zoning district maps, and (within sensitive coastal resources areas) other implementing actions that together meet the local requirements of, and implement the provisions and policies of, the California Coastal Act of 1976.

**Local Coastal Program Land Use Plan:** The relevant portion of a local government general plan or coastal element that details type, location, and intensity of land use, applicable resource protection and development policies, and, where necessary, implementation actions.

**Lot:** An area of land created or established for purposes of sale, lease, finance, division of interest or separate use, separated from other lands by description on a final map or parcel map.

**Low-income Household:** A household with an annual income usually no greater than 80 percent of the area median family income adjusted by household size, as determined by a survey of incomes conducted by a city or a county, or in the absence of such a survey, based on the latest available eligibility limits established by the U.S. Department of Housing and Urban Development (HUD) for the Section 8 housing program.

**Low-income Housing Tax Credits:** Tax reductions provided by the federal and State governments for investors in housing for low-income households.

**Luminaire or Luminary:** The light-producing element of a light fixture. Examples are bulbs and tubes. Direct viewing of luminaries of greater than 1,000 lumens per fixture is undesirable.

**Major Investment:** Federal regulations define a “major metropolitan transportation investment” as “a high-type highway or transit improvement of substantial cost that is expected to have a significant effect on capacity, traffic flow, level of service, or mode share to the transportation corridor or subarea scale.” (23 CFR 450.104)

**Major Investment Study (MIS):** A Major Investment Study is prepared during the early planning phase to analyze the range of modal alternatives and cost/benefits of “major metropolitan transportation investments,” which are defined as being highway or transit improvements of substantial cost that is expected to have a significant effect on capacity, traffic flow, level of service or mode share at the transportation corridor or subarea scale. TEA-21 eliminated the requirement for a separate MIS document, but the analysis still must be conducted.

**Major Source:** A stationary facility that emits a regulated pollutant in an amount exceeding the threshold level depending on the location of the facility and attainment with regard to air quality status.

**Mano:** A loaf-shaped handstone used for grinding seeds, pigments, and so forth, a metate or millingstone.

**Manufactured (Mobile) Home:** A building transportable in one or more sections that is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured (mobile) home” does not include a “recreational vehicle.”

**Manufactured Housing:** Housing that is constructed of manufactured components, assembled partly at the site rather than totally at the site. Also referred to as modular housing.

**Manufactured Slope:** A slope crated by grading that consists of cut and fill material.

**Market Rate Housing:** Housing that is available on the open market without any subsidy. The price for housing is determined by the market forces of supply and demand and varies by location.
**Mass Grading:** A grading technique in which all lots, building pads, and streets are generally graded over the entire area resulting in the disruption of the majority of the onsite natural grade and vegetation and/often resulting in, but not required to result in, a successive pad/terrace configuration.

**Master Plan of Arterial Highways (MPAH):** A diagram in the Circulation Element that illustrates the arterial designation of roadways. Each arterial designation defines the number of ultimate lanes planned for a given roadway. Arterial designations include: Freeway, Transportation Corridor, Expressway, Major Highway, Primary Highway, Secondary Highway, and Commuter Highway.

**Materials Recovery Facility (MRF):** An intermediate processing facility designed to remove recyclables and other valuable materials from the waste stream for purposes of recycling or composting. A "dirty MRF" removes reusable materials from unseparated trash. A "clean MRF" separates materials from commingled recyclables, typically collected from residential or commercial curbside programs.

**Mature Tree:** A living tree with a cross-sectional area of all major stems, as measured four and one-half (4½) feet above the root crown, of seventy-two (72) or more inches.

**May:** In accordance with CEQA Guidelines §15005, “may” identifies a permissive element which is left fully to the discretion of the public agencies involved.

**Maximum Credible Earthquake:** The largest Richter magnitude (M) seismic event that appears to be reasonably capable of occurring under the conditions of the presently known geological framework.

**Maximum Extent Practicable (MEP):** The extent to which storm water management practices are required to be implemented to reduce storm water pollution. All management practices that are effective at reducing storm water pollution are required to be implemented, except when any of the following conditions are met: 1) other effective management practices would achieve greater or substantially the same pollution control benefits; 2) the management practices would not be technically feasible; 3) the cost of management practice implementation would greatly outweigh pollution control benefits; or, 4) implementation of the management practice would compromise other legal or institutional constraints, expectations, and obligations imposed by federal or state statute or case law.

**Mean:** Average.

**Mean Sea Level:** The average altitude of the sea surface for all tidal stages.

**Median:** The middle value of a population distribution, above or below which lie an equal number of individual values; midpoint.

**Median Strip:** The dividing area, either paved or landscaped, between opposing lanes of traffic on a roadway.

**Memorandum of Understanding (MOU):** A common form of formal agreement between government agencies.

**Mercalli Intensity Scale:** A subjective measure of the observed effects (human reactions, structural damage, geologic effects) of an earthquake. Expressed in Roman numerals from I to XII.

**Merger (District):** Elimination of a special district by transferring its service responsibilities to a city government. The merging district's territory must be totally included inside the city.

**Metate:** A portable stone slab upon which seeds and other grains are milled with a mano (worked with a push-pull motion).
**Metropolitan Planning Organization (MPO):** The regional agency that administers the federally required transportation planning processes in a metropolitan area. An MPO must be in place in every urbanized area with a population over 50,000, and is responsible for the 20-year long-range plan and the Transportation Improvement Program (TIP). The MPO is the coordinating agency for grants, billings, and policy-making for transportation. The MPO is often, but not always, the COG.

**Metropolitan Transportation Plan:** The Metropolitan Transportation Plan means the official intermodal transportation plan that is developed and adopted through the metropolitan transportation planning process for the metropolitan planning area.

**Median:** A physical divider separating lanes of traffic that typically are traveling in opposite directions. A median is often installed to prohibit unsafe turning movements. It can also be used to beautify a streetscape.

**Median Income:** The annual income of each household size within a region that is defined annually by HUD. Half of the households in the region have incomes above the median and half have incomes below the median.

**Megawatt (mW):** One megawatt is equal to 1,000 kilowatts. Refers to the instantaneous amount of electricity being used or generated.

**Microclimate:** The climate of a small, distinct area, such as a city street or a building's courtyard; can be favorably altered through functional landscaping, architecture, or other design features.

**Mineral Resource:** Land on which known deposits of commercially viable mineral or aggregate deposits exist. This designation is applied to sites determined by the State Division of Mines and Geology as being a resource of regional significance, and is intended to help maintain the quarrying operations and protect them from encroachment of incompatible land uses.

**Mineral Resource Zones:** Zones that have been identified as having potential mineral and aggregate resources. The State Mining and Geology Board recommends that these lands be preserved as open space or used for interim uses to allow for future extraction.

**Ministerial (Administrative) Decision:** Describes a governmental decision involving little or no personal judgment by the public official as to the wisdom or manner of carrying out the project. The public official merely applies the law to the facts as presented, but uses no special discretion or judgment in reaching a decision. A ministerial decision involves only the use of fixed standards or objective measurements, and the public official cannot use personal, subjective judgment in deciding whether or how the project should be carried out. Common examples of ministerial permits include automobile registrations, dog licenses, and marriage licenses. A building permit is ministerial if the ordinance requiring the permit limits the public official to determining whether the zoning allows the structure to be built in the requested location, the structure would meet the strength requirements in the Uniform Building Code, and the applicant has paid his fee (source: CEQA Guidelines §15369).

**Mitigated Negative Declaration:** Mitigated negative declaration means a negative declaration prepared for a project when the Initial Study has identified potentially significant effects on the environment, but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed negative declaration and Initial Study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment (source: CEQA Guidelines §15369.5).

**Mitigation:** Mitigation refers to (1) avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree or magnitude of the action and its
implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or, (5) compensating for the impact by replacing or providing substitute resources or environments (source: CEQA Guidelines §15370).

Mitigation, under NEPA, includes (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments. (source: 40 CFR 1508.20)

**Mitigation Measure:** Action taken to reduce or eliminate environmental impacts. Mitigation includes: avoiding the impact altogether by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments.

**Mitigation Monitoring Program:** When a lead agency adopts a mitigated negative declaration or an EIR, it must adopt a program of monitoring or reporting which will ensure that mitigation measures are implemented. (See CEQA Statute Section 21081.6(a) and CEQA Guidelines Sections 15091(d) and 15097).

**Mixed Use:** Properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A “single site” may include contiguous properties.

**Mobile Home:** A structure, transportable in one or more sections, that is at least 8 feet in width and 32 feet in length, is built on a permanent chassis, and designed to be used as a dwelling unit when connected to the required utilities, either with or without a permanent foundation.

**Mobile Sources:** A source of air pollution that is related to transportation vehicles, such as automobiles, motorcycles, trucks, off-road vehicles, boats, and airplanes.

**Moderate Income Household:** A household with an annual income between the lower income eligibility limits and 120 percent of the area median family income adjusted by household size, usually as established by the U.S. Department of Housing and Urban Development (HUD) for the Section 8 housing program.

**Motel:** (1) A hotel for motorists. (2) A facility in which guest rooms or suites are offered to the general public for lodging with or without meals and for compensation, and where guest parking is provided in proximity to guest rooms. Quite often, provision is made for cooking in individual guest rooms or suites.

**Motor Vehicle:** A motor vehicle shall include any and all self-propelled vehicles as defined in the California Motor Vehicle Code including all on-highway type motor vehicles subject to registration under said code and all off-highway type motor vehicles subject to identification under said code.

**Mudflow (Mudslide):** A river flow or inundation of liquid mud down a hillside, usually as a result of a dual condition of loss of brush cover and the subsequent accumulation of water on or under the ground, preceded by a period of unusually heavy or sustained rain.
Multi-jurisdictional Planning: Collaborative planning in which the purpose is to address land use planning issues for an area, such as an entire watershed or other landscape unit, in which there is a mix of public and/or private land ownerships and adjoining or overlapping tribal, state, local government, or other federal agency authorities.

Multimodal: More than one mode of transportation in the same geographic area.

Multiple-Family (Multi-Family) Dwelling Unit: A building or portion of a building containing two or more dwelling units with each dwelling unit occupied by only one household.

Multiple Species Conservation Program (MSCP): A cooperative, long-term habitat conservation planning program for southwestern San Diego County, as authorized under the federal and California Endangered Species Acts and the California Natural Communities Conservation Planning Act. The MSCP is designed to preserve an interconnected system of viable native habitat for the protection of multiple sensitive species by identifying priority conservation areas, Multiple-Habitat Planning Areas (MHPA), where development will be restricted and areas outside the MHPA where future development will be directed.

Municipal Services: Services traditionally provided by local government, including water and sewer, roads, parks, schools, and police and fire protection.

Must: In accordance with CEQA Guidelines §15005, “must” or “shall” identifies a mandatory element which all public agencies are required to follow.

National Ambient Air Quality Standards (NAAQS): Standards set by the U.S. Environmental Protection Agency for the maximum levels of air pollutants that can exist in the ambient air without unacceptable effects on human health or public welfare. There are two types of NAAQS. Primary standards set limits to protect public health and secondary standards set limits to protect public welfare.

National Environmental Policy Act (NEPA): In 1969, the National Environmental Policy Act was enacted establishing a national environmental policy and the Council on Environmental Quality (CEQ) to advise the President on environmental issues. NEPA requires the preparation of environmental impact statements (EIS) for all major federal actions that would have a significant effect on the environment. NEPA served as a model for the California Environmental Quality Act (CEQA) enacted in 1970.

National Flood Insurance Program: A federal program that authorizes the sale of federally subsidized flood insurance in communities where such flood insurance is not available privately.

National Historic Landmark (NHL): Property included in the National Register of Historic Places that has been judged by the Secretary of the Interior to have "national significance in American history, archeology, architecture, engineering and culture."


National Pollutant Discharge Elimination System (NPDES) Permits: Under the NPDES Program (Federal Clean Water Act), any person responsible for the discharge of a pollutant or pollutants into any waters of the United States from any point source must apply for and obtain a permit. According to Section 402 of the Clean Water Act, the Environmental Protection Agency is the issuing authority for all NPDES permits in a state until such time as the state elects to take over the administration and obtains EPA approval of its programs. (The State Water Resources Control Board (SWRCB) has this authority in California.) Dischargers are required to disclose the volume and nature of their discharges. Further, the
EPA or equivalent State Agency has the authority to specify limitations to be imposed on discharges and to require monitoring and reporting as to compliance or non-compliance.

**National Register of Historic Places:** The official inventory established by the National Historic Preservation Act of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering and culture.

**Natural Community Conservation Plan (NCCP):** NCCP generally refers to a plan authorized pursuant to the Natural Communities Conservation Planning Act.

**Natural Grade:** The grade unaffected by construction techniques such as fill, landscaping, or berming.

**Navigable Waters:** The “waters of the United States” that are currently used, where used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; interstate waters; and intrastate lakes, rivers, streams, mudflats, sandflats, and wetlands.

**Negative Declaration:** Negative Declaration means a written statement by the Lead Agency briefly describing the reasons that a proposed project, not exempt from CEQA, will not have a significant effect on the environment and therefore does not require the preparation of an EIR. The contents of a Negative Declaration are described in CEQA Guidelines §15071 (source: CEQA Guidelines §15371).

**Neighborhood:** A planning area commonly identified as such in a community’s planning documents, and by the individuals residing and working within the neighborhood. Documentation may include a map prepared for planning purposes, on which the names and boundaries of the neighborhood are shown.

**Neighborhood Park:** City- or county-owned land intended to serve the recreation needs of people living or working within one-half mile radius of the park.

**Nitric Oxide (NO):** Precursor of ozone, NO₂, and nitrate; nitric oxide is usually emitted from combustion processes. Nitric oxide is converted to nitrogen dioxide (NO₂) in the atmosphere, and then becomes involved in the photochemical processes and / or particulate formation.

**Nitrogen Dioxide (NO₂):** A secondary contaminant formed through a reaction between nitric oxide (NO) and atmospheric oxygen, irritates the lungs at high concentrations and contributes to ozone formation. NO₂ is a criteria air pollutant.

**Nitrogen Oxides/Oxides of Nitrogen (NOx):** A general term pertaining to chemical compounds of nitric oxide (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen. They react with volatile organic compounds, in the presence of heat and sunlight to form ozone. It is also a major precursor to acid rain. A reddish brown gas that is a byproduct of combustion and ozone formation processes. Often referred to as NOX, this gas gives smog its "dirty air" appearance. NO₂ is a criteria air pollutant, and may result in numerous adverse health effects.

**Noise:** Any sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. Noise is unwanted sound.

**Noise Attenuation:** Reduction of the level of a noise source using a substance, material, or surface, such as earth berms and/or solid concrete walls.

**Noise Barrier:** A wall or other solid structure constructed with the objective of attenuating (i.e., reducing) noise behind the barrier; commonly, a noise wall along a roadway.
Noise Contour: A line connecting points of equal noise level as measured on the same scale. Noise levels greater than the 60 Ldn contour (measured in dBA) require noise attenuation in residential development.

Noise Disturbance: Any sound which, as judged by the Director of Community Development, (1) endangers or injures the safety or health of human beings or animals, or (2) annoys or disturbs reasonable persons of normal sensitivities, or (3) endangers or injures personal or real property.

Noise Element: One of the seven state-mandated elements of a local general plan. It assesses noise levels of highways and freeways, local arterials, railroads, airports, local industrial plants, and other ground stationary sources, and adopts goals, policies, and implementation programs to reduce the community's exposure to noise.

Noise Sensitive Land Use: Any land use (i.e., residential development) or designated geographic area (i.e., hospital complex) where “intrusive noise” is incompatible with the conduct of the noise sensitive uses or constitutes a “noise disturbance” for residents or works.

Non-attainment: The condition of not achieving a desired or required level of performance. Frequently used in reference to air quality. A geographic area identified by the U.S. EPA and/or the California Air Resources Board as not meeting either National or California Ambient Air Quality standards for a given pollutant.

Non-conforming Use: A use that was valid when brought into existence, but by subsequent regulation becomes no longer conforming. "Non-conforming use" is a generic term and includes (1) non-conforming structures (by virtue of size, type of construction, location on land, or proximity to other structures), (2) non-conforming use of a conforming building, (3) non-conforming use of a non-conforming building, and (4) non-conforming use of land. Thus, any use lawfully existing on any piece of property that is inconsistent with a new or amended General Plan, and that in turn is a violation of a zoning ordinance amendment subsequently adopted in conformance with the General Plan, will be a non-conforming use. Typically, non-conforming uses are permitted to continue for a designated period of time, subject to certain restrictions.

Non-Growth Area: A geographic subarea used in Ventura County population forecasts to refer to an area where urban development is not expected to occur.

Non-Point Source: Pollution sources that are so general or cover such a wide area that no single, localized source of the pollution can be identified; not an individual, stationary location (i.e., mobile source or area source).

Non-Point Source Discharge: Discharge from a diffuse pollution source (i.e., without a single point of origin or not introduced into a receiving stream from a specific outlet).

Non-Storm Water Discharge: Any discharge to a storm drain system or receiving water that is not composed entirely of storm water.

Notice of Completion: A brief notice filed with the Office of Planning and Research (OPR) by a Lead Agency as soon as it has completed a draft EIR, and is prepared to send out copies for review (source: CEQA Guidelines §15372).

Notice of Determination: A brief notice to be filed by a public agency after it approves or determines to carry out a project which is subject to the requirements of CEQA (source: CEQA Guidelines §15373). The filing of the NOD starts the statute of limitations period.

Notice of Exemption: A brief notice which may be filed by a public agency after it has decided to carry out or approve a project and has determined that the project is exempt from CEQA as being ministerial,
categorically exempt, an emergency, or subject to another exemption from CEQA. Such a notice may also be filed by an applicant where such a determination has been made by a public agency which must approve the project (CEQA Guidelines §15374).

Notice of Intent: A notice of intent, under NEPA, is a notice that an environmental impact statement will be prepared and considered. The notice briefly (a) describes the proposed action and possible alternatives; (b) describes the agency's proposed scoping process including whether, when, and where any scoping meeting will be held; and (c) states the name and address of a person within the agency who can answer questions about the proposed action and the environmental impact statement. (source: 40 CFR 1508.22)

Notice of Intent to Adopt a Negative Declaration (NOI): A notice provided to the public, responsible agencies and trustee agencies that the lead agency plans to adopt a Negative Declaration or Mitigated Negative Declaration based upon the attached environmental document. The filing of the Notice with the State Clearinghouse starts the public review period (See CEQA Guidelines §Section 15072).

Notice of Preparation: A brief notice sent by a Lead Agency to notify responsible agencies, trustee agencies, and involved federal agencies that the Lead Agency plans to prepare an EIR for the project. The purpose of the notice is to solicit guidance from those agencies as to the scope and content of the environmental information to be included in the EIR. Public agencies are free to develop their own formats for this notice (source: CEQA Guidelines §15375).

Objective: A description of a desired condition for a resource. A specific statement of desired future condition toward which the City or County will expend effort in the context of striving to achieve a broader goal. An objective should be achievable and, where possible, should be measurable and time-specific. The State Government Code (Section 65302) requires that general plans spell out the "objectives," principles, standards, and proposals of the general plan. "The addition of 100 units of affordable housing by 1995" is an example of an objective.

Office of Environmental Health Hazard Assessment (OEHHA): A department within the California Environmental Protection Agency that is responsible for evaluating chemicals for adverse health impacts and establishing safe exposure levels. OEHHA also assists in performing health risk assessments and developing risk assessment procedures for air quality management purposes.

Office Use: The use of land by general business offices, medical and professional offices, administrative or headquarters offices for large wholesaling or manufacturing operations, and research and development.

Oil and Gas Exploration and Production: The drilling, extraction, and transportation of subterranean fossil gas and petroleum, and necessary attendant uses and structures, but excluding refining, processing, or manufacturing thereof

Open Space: Land that has been left in its natural state and has not been developed with primary or accessory structures.

Open Space Element: One of the seven state-mandated elements of a local general plan. It contains an inventory of privately and publicly owned open-space lands, and adopted goals, policies, and implementation programs for the preservation, protection, and management of open space lands.

Ordinance: A law or regulation set forth and adopted by a governmental authority, usually a city or county.

Organic Compounds: A large group of chemical compounds containing mainly carbon, hydrogen, nitrogen, and oxygen. All living organisms are made up of organic compounds.
Other Land: Lands which do not meet the criteria of any other category. (Source: Natural Resource Conservation Service)

Outdoor Recreation Use: A privately or publicly owned or operated use providing facilities for outdoor recreation activities.

Overcrowding: As defined by the U.S. Census, a household with greater than 1.01 persons per room, excluding bathrooms, kitchens, hallways, and porches. Severe overcrowding is defined as households with greater than 1.51 persons per room.

Overlay: A land use designation on the land use map, or a zoning designation on a zoning map, that modifies the basic underlying designation in some specific manner. Development of land subject to overlay zoning requires compliance with the regulations of both the base and overlay zones.

Overpayment: The extent to which gross housing costs, including utility costs, exceed 30 percent of gross household income, based on data published by the U.S. Census Bureau. Severe overpayment, or cost burden, exists if gross housing costs exceed 50 percent of gross income.

Oxides of Nitrogen: A reddish-brown gas with an odor similar to bleach. The major source of this pollutant is the high temperature combustion of fossil fuels. Health effects include irritation and damage to lungs and lower resistance to respiratory infections.

Ozone (O₃): A compound consisting of three oxygen atoms that is the primary constituent of smog. It is formed through chemical reactions in the atmosphere involving volatile organic compounds, nitrogen oxides, and sunlight. Ozone can irritate the lungs as well as damage to trees, crops, and materials. There is a natural layer of ozone in the upper atmosphere that shields the earth from harmful ultraviolet radiation. Ozone is a criteria pollutant.

Ozone Precursors: Chemicals such as non-methane hydrocarbons and oxides of nitrogen, occurring either naturally or as a result of human activities, that contribute to the formation of ozone, a major component of smog.

PM10: (See Particulate Matter-Fine).

Paleontological Site: Any area or location containing a trace or impression, or the remains, of plants or animals from past ages.

Parcel: The basic unit of land entitlement. A designated area of land established by plat, subdivision, or otherwise legally defined and permitted to be used or built upon. A lot, or contiguous group of lots, in single ownership or under single control, usually considered a unit for purposes of development.

Parcel Map: A map depicting the establishment of up to four new lots by splitting a recorded lot. Parcel maps are subject to the California Subdivision Map Act and a city’s subdivision regulations.

Parks, Park Land, Parkland: Open space lands whose primary purpose is recreation. Land that is publicly owned or controlled for the purpose of providing parks, recreation, or open space for public use.

Parking, Shared: A public or private parking area used jointly by two or more uses.

Parking Area, Public: An open area, excluding a street or other public way, used for the parking of automobiles and available to the public, whether for free or for compensation.
Parking Management: An evolving Transportation Demand Management (TDM) technique designed to obtain maximum utilization from a limited number of parking spaces. Can involve pricing and preferential treatment for high occupancy vehicles, non-peak period users, and short-term users.

Parking Ratio: The number of parking spaces provided per 1,000 square of floor area (e.g., 2:1 or "two per thousand.")

Parking Space, Compact: A parking space (usually 7.5 feet wide by 16 feet long when perpendicular to a driveway or aisle) permitted in some localities on the assumption that many modern cars are significantly smaller, and require less room, than a standard automobile. A standard parking space, when perpendicular to a driveway or aisle, is usually 8.5 feet wide by 18 feet long.

Parkway: An expressway or freeway designed for non-commercial traffic only; usually located within a strip of landscaped park or natural vegetation.

Parkway Strip: A piece of land located between the rear of a curb and the front of a sidewalk, usually used for planting low ground cover and/or street trees, also known as "planter strip."

Particulate Matter: Any material except uncombined water, that exists in a solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle combustion products.

Particulate Matter-Fine (PM2.5): PM2.5 is a mixture of very small particulates with an aerodynamic diameter equal to or less than 2.5 microns. PM2.5 consists of particles directly emitted into the air and particulates formed in the air from the chemical transformation of gaseous pollutants. PM2.5 particulates are emitted from activities such as industrial and residential combustion, and from vehicle exhaust. Particles 2.5 microns or smaller infiltrate the deepest portions of the lungs, increasing the risks of long-term disease, including chronic respiratory disease, cancer, and increased and premature death.

Particulate Matter (PM10): PM10 is any particulate matter with an aerodynamic diameter equal to or less than 10 microns (about 1/7 the diameter of a single human hair). PM10 consists of particles directly emitted into the air and particulates formed in the air from the chemical transformation of gaseous pollutants. PM10 particulates are emitted from activities such as industrial and residential combustion, and from vehicle exhaust. PM10 causes adverse health effects, atmospheric visibility reduction. It is a criteria pollutant.

Parts Per Million (ppm): The number of weight or volume units of a minor constituent present within each one million units of the major constituent of a solution or mixture, such as salts in water.

Passenger Trips: Relate to the volume of passenger service provided by public transportation—such as buses, trains, and aircraft.

Passive Solar System: system that distributes collected heat via direct transfer from a thermal mass rather than mechanical power. Passive systems rely on building design and materials to collect and store heat and to create natural ventilation for cooling.

Patio Unit: A detached single-family unit, typically situated on a reduced-sized lot, that orients outdoor activity within rear or side yard patio areas for better utilization of the site for outdoor living space.

Peak Hour or Peak Period: The one hour period during which the roadway carries the greatest number of vehicles. Traffic volumes are not constant throughout the day. Peak hours are the times during which volumes are significantly higher than others. Most areas have two peak hours: morning while people travel to work and late afternoon or evening as they leave work and return home. In some cases as third, though usually smaller, peak occurs during the middle of the day. As development intensifies and traffic
volumes increase, the durations of the peaks are extended until eventually the peak hour becomes a peak period that may last for two or three hours. Peak period volumes are important as these are the times of day when the most severe congestion occurs, and intersections must be designed to accommodate these volumes if smooth traffic flow is to be maintained. The peak hour refers to the one-hour period during the a.m. peak period (typically 7 a.m. to 9 a.m.) and the one-hour period during the p.m. peak period (typically 3 p.m. to 6 p.m.) in which the greatest number of vehicle trips are generated by a given land use or are traveling on a given roadway.

**Percent Slope:** A common way of expressing the steepness of the slope of terrain, which is derived by dividing the change in elevation by the horizontal distance traversed. An increase of 20 feet elevation over a 100 foot distance is a 20 percent slope.

**Perched Groundwater:** Groundwater supported by a zone of material of low permeability located above an underlying main body of groundwater with which it is not hydrostatically connected.

**Percolation:** The downward movement of water through the soil or alluvium to the groundwater table.

**Perennial Stream:** Perennial streams have flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

**Performance Standards:** Zoning regulations that permit uses based on a particular set of standards of operation rather than on particular type of use. Performance standards provide specific criteria limiting noise, air pollution, emissions, odors, vibration, dust, dirt, glare, heat, fire hazards, wastes, traffic impacts, and visual impact of a use.

**Permeability (soil):** That quality of the soil or other geologic formations that enables it to transmit water or air.

**Permit:** The possession of a permit issued by the city, or where no permits are issued, the sanctioning of the activity by the jurisdiction as noted in a public record.

**Person:** Person includes any person, firm, association, organization, partnership, business, trust, corporation, limited liability company, company, district, city, county, city and county, town, the state, and any of the agencies or political subdivisions of such entities (source: CEQA Guidelines §15376).

**Person Trips:** Indicates the number of people, and are of interest in situations where there may be opportunities to accomplish more one-person trips with less vehicle trips–such as a carpool.

**Pesticide:** Any material used to control pests. Includes insecticides, herbicides, and rodenticides.

**pH:** A measure of acidity or alkalinity of a material, liquid, or solid. pH represents, on a scale of 0 to 14 with 7 representing a neutral state, 0 representing the most acid and 14 the alkaline.

**Phase I:** For cultural resources, generally consists of a records search, a pedestrian field survey, and a written report.

**Phase II:** Usually will include test excavation pits. The goals are to determine the site’s boundaries, an assessment of the site’s integrity, and evaluation of the site’s importance or significance through a study of its features and artifacts.

**Photochemical Smog:** The atmospheric condition that results when reactive organic gases and nitrogen oxides emitted into the atmosphere react in the presence of sunlight to form other pollutants, such as oxidants.
Photovoltaic: The conversion of sunlight from a photovoltaic cell into electricity.

Planned Community: A large-scale development whose essential features are a definable boundary; a consistent, but not necessarily uniform, character; overall control during the development process by a single development entity; private ownership of recreation amenities; and enforcement of covenants, conditions, and restrictions by a master community association.

Planning and Research, Governor's Office of (OPR): A division of the Governor's Office responsible for coordinating state, regional, and local planning in California, including publishing guidelines for the preparation and content of city and county general plans.

Planning Area: The area directly addressed by the general plan. A city’s planning area typically encompasses the city limits and potentially annexable land within its sphere of influence.

Planning Commission: A body, usually having five or seven members, created by a city or county in compliance with California law (Section 65100) that requires the assignment of the planning functions of the city or county to a planning department, planning commission, hearing officers, and/or the legislative body itself, as deemed appropriate by the legislative body.

Plans, Specifications, and Estimates (PS&E): The bid documents, including general design, specifications, and estimated costs.

Plant Community: A group of plant species commonly occurring together in roughly similar proportions.

Point Source: Specific points of origin where pollutants are emitted into the atmosphere such as factory smokestacks.

Police Power: The inherent right of a government to restrict an individual’s conduct or use of his/her property in order to protect the health, safety, welfare, and morals of the community.

Policy: A specific statement of principle or of guiding actions that implies clear commitment but is not mandatory. A general direction that a governmental agency sets to follow, in order to meet its goals and objectives before undertaking an action program.

Pollutant: Any introduced gas, liquid, or solid that makes a resource unfit for its normal or usual purpose.

Pollution: The presence of matter or energy whose nature, location, or quantity produces undesired environmental effects.

Pollution, Non-Point: Sources for pollution that are less definable and usually cover broad areas of land, such as agricultural land with fertilizers that are carried from the land by runoff, or automobiles.

Pollution, Point: In reference to water quality, a discrete source from which pollution is generated before it enters receiving waters, such as a sewer outfall, a smokestack, or an industrial waste pipe.

Potable Water: Suitable and safe for drinking.

Poverty Level: As used by the U.S. Census, families, and unrelated individuals are classified as being above or below the poverty level based on a poverty index that provides a range of income cutoffs or "poverty thresholds" varying by size of family, number of children, and age of householder. The income cutoffs are updated each year to reflect the change in the Consumer Price Index.
Precursor: A chemical compound that leads to the formation of a pollutant. Reactive organic gases and nitrogen oxides are precursors of photochemical oxidants.

Preservation: As used in historic preservation, the process of sustaining the form and extent of a structure essentially as it exists. Preservation aims at halting further deterioration and providing structural stability but does not contemplate significant rebuilding.

Preserve: An area in which beneficial uses in their present condition are protected; for example, a nature preserve or an agricultural preserve. To keep safe from destruction or decay; to maintain or keep intact.

Prime Agricultural Land: (1) Land used actively in the production of food, fiber, or livestock. (2) All land that qualifies for rating as Class I or Class II in the Soil Conservation Service land use compatibility classifications. (3) Land that qualifies for rating 80 through 100 in the Storie Index Rating. (See Prime Farmland.)

Prime Farmland: Lands with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. The land must be supported by a developed irrigation water supply that is dependable and of adequate quality during growing season. The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date (source: Natural Resource Conservation Service).

Private Project: A “private project” means a project which will be carried out by a person other than a governmental agency, but the project will need a discretionary approval from one or more governmental agencies for: (a) a contract or financial assistance, or (b) a change, permit, license, certificate, or other entitlement for use (source: CEQA Guidelines §15377).

Private Road/Private Street: Privately owned (and usually privately maintained) motor vehicle access that is not dedicated as a public street. Typically the owner posts a sign indicating that the street is private property and limits traffic in some fashion. For density calculation purposes, some jurisdictions exclude private roads when establishing the total acreage of the site; however, aisles within and driveways serving private parking lots are not considered private roads.

Professional Offices: A use providing professional or consulting services in the fields of law, medicine, architecture, design, engineering, accounting, and similar professions, but not including financial institutions or real estate or insurance offices.

Program: An action, activity, or strategy carried out in response to adopted policy to achieve a specific goal or objective. Policies and programs establish the "who," "how" and "when" for carrying out the "what" and "where" of goals and objectives.

Program EIR: An EIR prepared on a series of actions that can be characterized as one large project. A program EIR generally establishes a framework for tiered or project-level environmental documents that are prepared in accordance with the overall program (See CEQA Guidelines §15168(a)).

Project: Project means the whole of an action which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (a) an activity directly undertaken by any public agency including but not limited to public works construction and related activities clearing or grading of land, improvements to existing public structures, enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100-65700; (b) an activity undertaken by a person which is supported in whole or in part through public agency contacts, grants, subsidies, loans, or other forms of assistance from one or more public agencies; (c) an activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies. Project does not include: (a) Proposals for
legislation to be enacted by the State Legislature; (b) Continuing administrative or maintenance activities, such as purchases for supplies, personnel-related actions, general policy and procedure making (except as they are applied to specific instances covered above); (c) The submittal of proposals to a vote of the people of the state or of a particular community; (d) The creation of government funding mechanisms or other government fiscal activities, which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment. The term “project” refers to the activity which is being approved and which may be subject to several discretionary approvals by governmental agencies. The term “project” does not mean each separate governmental approval. Where the Lead Agency could describe the project as either the adoption of a particular regulation under subsection (a)(1) or as a development proposal which will be subject to several governmental approvals under subsections (a)(2) or (a)(3), the Lead Agency shall describe the project as the development proposal for the purpose of environmental analysis. This approach will implement the Lead Agency principle as described in Article 4 (source: CEQA Guidelines §15378). Under NEPA, projects include actions approved by permit or other regulatory decision as well as federal and federally assisted activities. (source: 40 CFR 1508.18)

**Project Description:** Describes the basic characteristics of the project including location, need for the project, project objectives, technical and environmental characteristics, project size and design, project phasing, and required permits. The level of detail provided in the project description varies according to the type of environmental document prepared.

**Project Lot Area:** The total land area of a project after all required dedications or reservations for public improvements, including, but not limited to, streets, parks, schools, flood control channels, etc.

**Property Line:** Boundary line between two or more adjacent legal lots.

**Public Agency:** Public agency includes any state agency, board, or commission and any local or regional agency, as defined in these Guidelines. It does not include the courts of the state. This term does not include agencies of the federal government (source: CEQA Guidelines §15379).

**Public Facilities:** Institutional response to basic human needs, such as health, education, safety, recreation, and inspiration. Also, includes facilities and services such as, but not limited to, police, fire, libraries, parks, and flood control.

**Public Right-of-Way:** Any street, avenue, boulevard, highway, sidewalk, or alley or similar place that is owned or controlled by a governmental entity.

**Public Space:** Any real property or structures thereon which are owned or controlled by a governmental entity.

**Pump Station:** A complete pumping installation, including a storage box, pump or pumps, standby pumps, connecting pipes, electrical equipment, pump house, and outlet chamber.

**Quasi-public:** A use owned or operated by a non-profit, religious or charitable institution and providing educational, cultural, recreational, religious, or similar types of public programs.

**Rare Species:** In accordance with the CEQA Guidelines, a “Species” means a species or subspecies of animal or plant or a variety of plant. A species of animal or plant is: “Rare” when either: (a) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or (b) The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in the Federal Endangered Species Act. A species of animal or plant shall be presumed to be endangered, rare or threatened, as it is listed in: (1) Sections 670.2 or 670.5, Title 14, California; (2) Title 50, Code of Federal Regulations
Section 17.11 or 17.12 pursuant to the Federal Endangered Species Act as rare, threatened, or endangered. A species not included in any listing shall nevertheless be considered to be endangered, rare or threatened, if the species can be shown to meet specific criteria. This definition shall not include any species of the Class Insecta which is a pest whose protection under the provisions of CEQA would present an overwhelming and overriding risk to man as determined by: The Director of Food and Agriculture with regard to economic pests; or The Director of Health Services with regard to health risks (source: CEQA Guidelines §15380).

**Reactive Organic Compound (ROC)/Reactive Organic Gases (ROG):** A photochemically reactive chemical gas, composed of non-methane hydrocarbons, that may contribute to the formation of smog. Also sometimes referred to as Non-Methane Organic Gases (NMOGs).

**Recharge:** The physical process where water naturally percolates or sinks into a groundwater basin.

**Recharge Basin:** A surface facility, often a large pond, used to increase the infiltration of surface water into a groundwater basin.

**Reclamation:** The reuse of resources, usually those present in solid wastes or sewage.

**Record of Decision (ROD):** The Record of Decision is a formal written statement, required under NEPA, wherein a federal lead agency must present the basis for its decision to approve a selected project alternative, summarize mitigation measures incorporated into the project and document any required Section 4(f) approval.

**Recycle:** Per Public Resources Code Section 40180, the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products that meet the quality standards necessary to be used in the marketplace.

**Redevelop:** To demolish existing buildings; or to increase the overall floor area existing on a property; or both; irrespective of whether a change occurs in land use.

**Redevelopment:** The legally-authorized process of rehabilitating or rebuilding a deteriorated section of a city using municipal powers and finances to assemble properties, replace infrastructure, or otherwise assist in creating new facilities and stimulating private development.

**Redevelopment Agency:** California law provides cities with the authority to establish a Redevelopment Agency with the scope and financing mechanisms necessary to remedy blight and provide stimulus to eliminate deteriorated conditions. The law provides for the planning, development, redesign, clearance, reconstruction, or rehabilitation, or any combination of these factors, and the provision of public and private improvements as may be appropriate in the interest of the general welfare by the Redevelopment Agency. Redevelopment law requires a Redevelopment Agency to set aside 20 percent of all tax increment dollars generated from each redevelopment project area for the purpose of increasing and improving the community’s supply of housing for low and moderate income households.

**Regional:** Pertaining to activities or economies at a scale greater than that of a single jurisdiction, and affecting a broad geographic area.

**Regional Park:** A park typically 150-500 acres in size focusing on activities and natural features not included in most other types of parks and often based on a specific scenic or recreational opportunity.

**Regional Transportation Plan (RTP):** The official intermodal metropolitan transportation plan that is developed through the metropolitan planning process for the metropolitan planning area, developed pursuant to 23 CFR part 450.
**Regulation:** A rule or order prescribed for managing government.

**Reservoir:** A pond, lake, tank, basin, or other space either natural or created in whole or in part by the building of engineering structures for the storage of water; a reservoir can be an open lake or an enclosed storage tank.

**Residential Land Use:** Land designated in the city or county general plan and zoning ordinance for buildings consisting only of dwelling units. May be improved, vacant, or unimproved. Any parcel or area of land devoted to housing and ancillary uses.

**Residential Care Facility:** A facility that provides 24-hour care and supervision to its residents.

**Residential, Multiple Family:** Usually three or more dwelling units on a single site, that may be in the same or separate buildings.

**Residential, Single-family:** A single dwelling unit on a building site.

**Resources, Non-renewable:** Refers to natural resources, such as fossil fuels and natural gas, that, once used, cannot be replaced and used again.

**Responsible Agency:** A public agency that proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term "Responsible Agency" includes all public agencies other than the Lead Agency which have discretionary approval power over the project (source: CEQA Guidelines §15381).

**Retrofit:** To add materials and/or devices to an existing building or system to improve its operation, safety, or efficiency. Buildings have been retrofitted to use solar energy and to strengthen their ability to withstand earthquakes, for example.

**Reverse:** A type of fault similar to a normal fault, except the footwall moves downward relative to the hanging wall.

**Reviewing Agencies:** Local, state, and federal agencies with jurisdiction over the project area or resources potentially affected by the project. Cities and counties are also considered reviewing agencies.

**Rezoning:** An amendment to the map and/or text of a zoning ordinance to effect a change in the nature, density, or intensity of uses allowed in a zoning district and/or on a designated parcel or land area.

**Richter Scale:** A logarithmic scale developed in 1935/36 by Dr. Charles F. Richter and Dr. Beno Gutenberg to measure earthquake magnitude by the amount of energy released, as opposed to earthquake intensity as determined by local effects on people, structures, and earth materials. A measure of the size or energy release of an earthquake at its source. The scale is logarithmic; the wave amplitude of each number on the scale is 10 times greater than that of the previous whole number.

**Ridgeline:** A line connecting the highest points along a ridge and separating drainage basins or small-scale drainage systems from one another.

**Right-Lateral:** Movement of a strike-slip fault where, if an observer were standing on one side of the fault, the opposite side would move to the right.

**Right-of-Way (ROW):** That portion of property that is dedicated or over which an easement is granted for public streets, utilities, or alleys.
Riparian: Term used for areas within and adjacent to rivers, streams, and creeks. These areas typically support plant species adapted to (or can tolerate) occasional or permanent flooding and/or saturated soils.

Riparian Ecosystem: An ecosystem defined by linear corridors of variable width occurring along rivers, streams, and creeks. Hydrologic interaction (with a river, stream, or creek) and distinct geomorphic features are two unique components of this ecosystem.

Riparian Habitat: Refers to habitat found in a riparian setting, and includes areas within the jurisdiction of the U.S. Army Corps of Engineers. Riparian habitat would contain the applicable river, stream, or creek (within an Ordinary High Water Mark). Riparian habitat may contain three-parameter wetlands (Federal definition), but usually does not.

Risk Assessment: The qualitative and quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence and/or use of specific pollutants.

Risk of Upset: The risk associated with potential explosions, fires, or release of hazardous substances in the event of an accident or natural disaster.

Runoff: That portion of rain or snow that does not percolate into the ground and is discharged into streams instead.


Safety Element: One of the seven state-mandated elements of the general plan. It establishes the policies and programs to protect the community from risks associated with seismic, geologic, flood, and wildfire hazards.

Sanitary Landfill: The controlled placement of refuse within a limited area, followed by compaction and covering with a suitable thickness of earth and other containment material.

Sanitary Sewer: A system of subterranean conduits that carries refuse liquids or waste matter to a plant where the sewage is treated, as contrasted with storm drainage systems (that carry surface water) and septic tanks or leech fields (that hold refuse liquids and waste matter on the site). Underground pipes that carry off only domestic or industrial waste, not storm water.

Scale: Refers to the geographic area and data resolution under examination in an assessment or planning effort.

Scenic Highway Corridor: The area outside a highway right-of-way that is generally visible to persons traveling on the highway.

Scenic Highway/Scenic Route: A highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and man-made scenic resources and access or direct views to areas or scenes of exceptional beauty or historic or cultural interest. The aesthetic values of scenic routes often are protected and enhanced by regulations governing the development of property or the placement of outdoor advertising.

Secondary Treatment: Generally, a level of treatment that produces 85 percent removal efficiencies for biological oxygen demand and suspended solids. Usually carried out through the use of trickling filters or by the activated sludge process.
**Section 106:** Provision in National Historic Preservation Act that requires federal agencies to consider effects of proposed undertakings on properties listed or eligible for listing in the National Register of Historic Places.

**Section 2081:** A section of the California Endangered Species Act (CESA) that governs the take of listed endangered species.

**Section 4(f):** Provision in U.S. Department of Transportation Act that prohibits federal approval or funding of transportation projects that require "use" of any historic site unless (1) there is "no feasible and prudent alternative to the project," and (2) the project includes "all possible planning to minimize harm."

**Section 6(f):** Section 6(f) of the Land and Water Conservation Act requires that the conversion of lands or facilities acquired with Land and Water Conservation Act funds be coordinated with the Department of Interior. Usually replacement in kind is required. Consequently, where conversions of Section 6(f) lands are proposed for highway projects, replacement lands are required.

**Section 7:** A section of the federal Endangered Species Act that requires federal agencies to consult with the U.S. Fish and Wildlife Service and/or National Oceanic and Atmospheric Administration Fisheries for actions that may affect a listed threatened and/or endangered species.

**Section 10(a):** A section of the federal ESA that governs issuance of a permit to allow incidental take of a listed endangered species.

**Sediment:** Organic or inorganic material that is carried by or is suspended in water and that settles out to form deposits in the storm drain system or receiving waters.

**Sedimentation:** Process by which material suspended in water is deposited in a body of water.

**Seiche:** A free or standing-wave oscillation of the surface of water in an enclosed or semi-enclosed basin (such as a lake, bay, or harbor). It is generally caused by local changes in atmospheric pressure, aided by winds, tidal currents and small earthquakes.

**Seismic:** Caused by or subject to earthquakes or earth vibrations.

**Senate Bill 97 (SB 97):** Requires the State of California Office of Planning and Research (OPR), by July 1, 2009, to prepare guidelines for the feasible mitigation of greenhouse gas (GHG) emissions, as required by the California Environmental Quality Act (CEQA). The guidelines must be certified and adopted by January 1, 2010.

**Senate Bill 375 (SB 375):** Links transportation planning and funding to general land use planning and the California Environmental Quality Act (CEQA).

**Sensitive Receptors:** Sensitive receptors are people or institutions with people that are particularly susceptible to illness from environmental pollution, such as the elderly, very young children, people already weakened by illness (e.g., asthmatics), and persons engaged in strenuous exercise.

**Septic System:** A sewage-treatment system that includes a settling tank through which liquid sewage flows and in which solid sewage settles and is decomposed by bacteria in the absence of oxygen. Septic systems are often used for individual-home waste disposal where an urban sewer system is not available.

**Setback:** The horizontal distance between the property line and any structure or between two structures as required by zoning.
**Settlement:** (1) The drop in elevation of a ground surface caused by settling or compacting. (2) The gradual downward movement of an engineered structure due to compaction. Differential settlement is uneven settlement, where one part of a structure settles more or at a different rate than another part.

**Sewer:** The system of pipes that carries wastewater from homes and businesses to a treatment plant or reclamation plant. Sewers are separate from storm drains, which is a system of drains and pipes that carry rainwater from urban streets back to the ocean.

**Shall:** In accordance with CEQA Guidelines §15005, “shall” or “must” identifies a mandatory element that all public agencies are required to follow.

**Shopping Center:** A group of commercial establishments, planned, developed, owned, or managed as a unit, with common off-street parking provided on the site.

**Should:** In accordance with CEQA Guidelines §15005, “should” identifies guidance provided by the Secretary for Resources based on policy considerations contained in CEQA, in the legislative history of the statute, or in federal court decisions that California courts can be expected to follow. Public agencies are advised to follow this guidance in the absence of compelling, countervailing considerations.

**Significance (NEPA):** NEPA requires that an EIS is required when the proposed federal action has the potential to “significantly affect the quality of the human environment.” To determine that potential, one must consider both the context in which the action takes place and the intensity of its effect. Section 1508.27 of the CEQ regulations define the term “significantly” as:

Significantly as used in NEPA requires considerations of both context and intensity:

(a) **Context.** This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

(b) **Intensity.** This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

(2) The degree to which the proposed action affects public health or safety.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment. [43 FR 56003, Nov. 29, 1978; 44 FR 874, Jan. 3, 1979]

Significant Impact or Significant Effect on the Environment: As defined by the CEQA Guidelines, a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant. The lead agency will determine whether a project may have a significant effect on the environment based on substantial evidence in light of the whole record (source: CEQA Guidelines §15382).

Siltation: The accumulating deposition of eroded material; the gradual filling in of streams and other bodies of water with sand, silt, and clay.

Single Event Noise Exposure Level (SENEL): SENEL is the single event aircraft noise descriptor commonly used in California as a result of regulatory requirements by the California Department of Transportation, Division of Aeronautics. It is essentially identical to the equivalent federal descriptor known as “SEL.” In decibels, SENEL shall mean the sound exposure level of a single event, such as an aircraft fly-by, measured over the time interval between the initial and final times for which the sound level of a single event exceeds the threshold sound level. SENEL is an A-weighted measure of an individual flyover, which time integrates the level accumulated during this event with reference to a duration of one second. Because of the integration process, SENEL takes into consideration both the duration and the magnitude of the noise signal.

Single-family Dwelling, Attached: A dwelling unit occupied or intended for occupancy by only one household that is structurally connected with at least one other such dwelling unit.

Single-family Dwelling, Detached: A dwelling unit occupied or intended for occupancy by only one household that is structurally independent from any other such dwelling unit or structure intended for residential or other use.

Single-Family Housing: A conventionally built house consisting of a single dwelling unit occupied by one household.

Site: A parcel of land used or intended for one use or a group of uses and having frontage on a public or an approved private street. A lot.

Slide: A slide is a down slope movement of a soil or rock mass occurring dominantly on shallower slopes at surfaces of rupture or on relatively thin zones of intense shear strain. The displaced mass often slides
beyond the toe of the surface rupture covering the original ground surface of the slope. Slides consist of two main types: rotational and translational. Rotational slides move along a surface of rupture that is curved and concave. Translational slides move along a planar or undulating surface of rupture.

**Slope**: Land gradient described as the vertical rise divided by the horizontal run, and expressed in percent.

**Slope Face**: The slopes located directly below, or leading up to, the crest of a significant ridgeline or prominent landform.

**Slope Steepness**: The relationship (the ratio) between the change in elevation (rise) and the horizontal distance (run) over which that change in elevation occurs. The percent of steepness of any given slope is determined by dividing the rise by the run on the natural slope of land, multiplied by 100.

**Sludge**: The solids that remain after wastewater treatment. This material is separated from the cleaned water, then treated and composted into fertilizer. Another word for sludge is biosolids.

**Smog**: A combination of smoke and other particulates, ozone, hydrocarbons, nitrogen oxides, and other chemically reactive compounds that, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects. The primary source of smog in California is motor vehicles.

**Sole Source Aquifer**: An aquifer upon which a community depends exclusively for its fresh water supply.

**Solid Waste**: Any non-hazardous garbage, refuse or sludge, that is primarily solid but may also include portions of liquid, semi-solid or contained gaseous material resulting from residential, industrial, commercial, agricultural, mining operations, and community activities.

**Source Reduction**: Per Public Resources Code Section 40196, "source reduction" means any action that causes a net reduction in the generation of solid waste. Source reduction includes, but is not limited to, reducing the use of nonrecyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, reducing the amount of yard wastes generated, establishing garbage rate structures with incentives to reduce waste tonnage generated, and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials.

**South Coast Air Quality Management District (SCAQMD)**: The agency responsible for protecting public health and welfare through the administration of federal and state air quality laws, regulations, and policies in the South Coast Air Basin.

**Southern California Association of Governments (SCAG)**: The organization, known in federal law as a Council of Governments or Metropolitan Planning Organization. As the designated Metropolitan Planning Organization, Southern California Association of Governments (SCAG) represents the counties of Imperial, Riverside, San Bernardino, Orange, Los Angeles, and Ventura, and the cities within these six counties. SCAG is mandated by the federal government to research and prepare plans for transportation, growth management, hazardous waste management, and air quality. Additional mandates exist at the state level.

**Specific Plan**: A legal tool authorized by Government Code §65450 et seq. for the systematic implementation of the general plan for a defined portion of a community’s planning area. A specific plan must specify in detail the land uses, public and private facilities needed to support the land uses, phasing of development, standards for the conservation, development, and use of natural resources, and a program of implementation measures, including financing measures.
**Sphere of Influence:** A plan for the probable physical boundaries and service area for a local agency, as determined by the Local Agency Formation Commission. Typically, a sphere of influence is the territory that a city or district is expected to annex. Therefore, spheres of influence are usually larger in area than the actual boundaries of a city or district, although they can be the same as the city or district boundaries.

**Spillover:** Spillover occurs when the illumination intensity outside the property boundaries exceeds one foot-candle.

**Spread:** A spread is a sudden lateral movement of a cohesive rock or soil mass along softer underlying material generally composed of homogenous clays or cohesionless fill. Spread includes a general subsidence of fractures of the mass of cohesive material into the softer underlying material. This type of landslide is often triggered by seismic activity.

**State Agency:** State agency means a governmental agency in the executive branch of the State Government or an entity that operates under the direction and control of an agency in the executive branch of State Government and is funded primarily by the State Treasury (source: CEQA Guidelines §15383).

**State Historic Preservation Officer (SHPO):** Official appointed or designated, pursuant to the National Historic Preservation Act, to administer a state's historic preservation program.

**State Implementation Plan (SIP):** A plan prepared by each state, and subject to U.S. Environmental Protection Agency (EPA) approval, that describes existing air quality conditions and identifies actions and programs to be undertaken by the state and its subdivisions to attain and maintain National Ambient Air Quality Standards. A SIP is a compilation of all of a state’s air quality plans and rules that have been approved by the federal EPA. In California, air districts prepare non-attainment plans that are included in the state’s SIP. The SIP is the portion (or portions) of an applicable implementation plan approved or promulgated, or the most recent revision thereof, under sections 110, 301(d) and 175A of the Clean Air Act.

**Statement of Overriding Considerations:** A statement indicating that even though a project would result in one or more unavoidable adverse impacts, specific economic, social or other stated benefits are sufficient to warrant project approval.

**Statewide Transportation Improvement Plan (STIP):** A staged, multi-year statewide capital improvement program of intermodal transportation projects funded with revenues from the State Highway Account and other sources, and is consistent with the statewide transportation plan and planning processes and metropolitan plans, TIPs and processes.


**Statewide Transportation Plan:** The official statewide, intermodal transportation plan that is developed through the statewide transportation planning process.

**Stationary Source:** A source of air pollution that is not mobile. Any building, structure, facility, or installation that emits or may emit any affected pollutant directly or as a fugitive emission. Building, structure, facility, or installation means any pollutant emitting activities, including activities located in California coastal waters adjacent to the District boundaries, that a. belong to the same industrial grouping, and b. are located on one or more contiguous or adjacent properties (except for activities located in coastal waters, and c. are under the same or common ownership, operation, or control or that are owned or operated by entities that are under common control.
Storm Drain: The system of pipes that carries rain water from urban streets back to the ocean. Storm drain water is not treated before it is discharged. Storm drains are separate from sewers, which is a separate system of pipes to carry wastewater from homes and businesses to a treatment plant or reclamation plant for cleaning.

Storm Drain Inlet: A drainage structure that collects surface runoff and conveys it to an underground storm drain system.

Storm Runoff: Surplus surface water generated by rainfall that does not seep into the earth but flows overland to flowing or stagnant bodies of water.

Storm Water: Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Drainage System: Streets, gutters, inlets, conduits, natural or artificial drains, channels and watercourses, or other facilities that are owned, operated, maintained, and used for the purpose of collecting, transporting, or disposing of storm water.

Stratum: A layer of material deposited by cultural or geological processes.

Structure: Anything, including a building, located on the ground in a permanent location or attached to something having a permanent location on the ground.

Street Cross-Section: A term used to describe the total number of lanes on a street. For instance, a street that has two lanes of northbound traffic, two lanes of southbound traffic, and a refuge lane is commonly referred to as a five-lane cross-section.

Structure: Anything constructed or erected on the ground, or that requires location on the ground, or is attached to something having a location on or in the ground.

Subregional: Pertaining to a portion of a region.

Subsidence: Sinking of the land surface due to a number of factors, of which groundwater extraction is one; the gradual settling or sinking of an area with little or no horizontal motion.

Subsidize: To assist by payment of a sum of money or by the granting of terms or favors that reduce the need for monetary expenditures. Housing subsidies may take the forms of mortgage interest deductions or tax credits from federal and/or state income taxes, sale or lease at less than market value of land to be used for the construction of housing, payments to supplement a minimum affordable rent, and the like.

Sulfur Dioxide (SO$_2$): A strong smelling, colorless gas that is formed by the combustion of fossil fuels. Power plants, that may use coal or oil high in sulfur content, can be major sources of SO$_2$. SO$_2$ and other sulfur oxides contribute to the problem of acid deposition. SO$_2$ is a criteria air pollutant.

Sulfur Oxides: Pungent, colorless gases (sulfates are solids) formed primarily by the combustion of sulfur-containing fossil fuels, especially coal and oil. Considered major air pollutants, sulfur oxides may impact human health and damage vegetation.

Sustainability: Community use of natural resources in a way that does not jeopardize the ability of future generations to live and prosper.

Sustainable Development: Development that maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.
**Substantial Evidence:** Substantial evidence as used in these guidelines means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency. Argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly erroneous or inaccurate, or evidence of social or economic impacts that do not contribute to or are not caused by physical impacts on the environment does not constitute substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (source: CEQA Guidelines §15384).

**Sulfur Dioxide (SO₂):** A colorless, extremely irritating gas or liquid. Sulfur dioxide enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. There are National Ambient Air Quality Standards and California Air Quality Standards for sulfur dioxide.

**Sump:** In drainage, any low area that does not permit the escape of water by gravity flow.

**Surface Water:** Water in lakes, streams or rivers, as distinct from subsurface groundwater.

**Surface Water Runoff:** Precipitation, snow melt, or irrigation water in excess of what can infiltrate the soil surface and be stored in small surface depressions.

**Swale:** An elongated or depressed landform within a landscaped area, that is designed to carry storm or other runoff.

**Taking:** A real estate term traditionally used to mean acquisition by eminent domain but broadened by the U.S. Supreme Court to mean any government action that denies economically viable use of property.

**Temporary Construction Site BMPS:** BMPs that are only temporarily required to address a short-term storm water contamination threat.

**Thermal Mass:** Large quantities of heavy or dense material with a high heat capacity, used in solar buildings to absorb heat, which is then stored and re-radiated as needed for heating and cooling.

**Threatened Species:** A species in danger of becoming endangered within the foreseeable future throughout all or a significant portion of its range. The species is determined to be threatened by the U.S. Fish and Wildlife Service in accordance with the federal Endangered Species Act of 1973, resulting in the prohibition of activities that harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct without an incidental take permit.

Under CEQA, a species of animal or plant is endangered when its survival and reproduction in the wild are in immediate jeopardy form one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors. Although when not presently threatened with extinction, the species exists in such small numbers that it may become endangered if its environment worsens. A species of animal or plant shall be presumed to be rare or endangered as it is listed in: Sections 670.2 or 670.5, Title 14, California Code of Regulations; or Title 50, Code of Federal Regulations Sections 17.11 or 17.12 pursuant to the Federal Endangered Species Act as rare, threatened, or endangered.

**Threshold of Significance:** Criteria for each environmental issue area to assist with determinations of significance of project impacts.

**Title 24 of the California Code of Regulations:** Title 24 is part of the California Buildings Standards Code, the building regulations of California. Part 6 is the Energy Code.
**Topographic Map:** A map showing the various topographic features of a given area, such as hills, valleys, mountains, slope of land surfaces, usually by means of contours or lines connecting points of equal elevation.

**Topography:** The physical shape of the ground surface. Configuration of a surface, including its relief and the position of natural and man-made features.

**Total Dissolved Solids (TDS):** A quantitative measure of the residual minerals dissolved in water that remains after evaporation of a solution. Usually expressed in milligrams per liter or parts per million.

**Total Maximum Daily Load (TMDL):** An estimate of the total quantity of pollutants (from all sources: point, non-point, and natural) that may be allowed into waters without exceeding applicable water quality criteria.

**Total Organic Gases (TOG):** Gaseous organic compounds, including reactive organic gases and the relatively unreactive organic gases such as methane.

**Total Suspended Particulate (TSP):** Particles of solid or liquid matter (such as soot, dust, aerosols, fumes, and mist) up to approximately 30 microns in size.

**Toxic Air Contaminant (TACs):** Airborne chemical compounds determined by the U.S. Environmental Protection Agency (EPA) and the California EPA, including the Office of Environmental Health Hazard Assessment and the California Air Resources Board, to pose a present or potential threat to public health. Air pollutants (excluding ozone, carbon monoxide, PM_{10}, sulfur dioxide, and nitrogen dioxide) that may reasonably be anticipated to cause cancer, developmental effects, reproductive dysfunctions, neurological disorders, heritable gene mutations, or other serious or irreversible acute or chronic health effects in humans. Toxic air pollutants are considered under a different regulatory process (California Health and Safety Code section 39650 et seq.) than pollutants subject to California Ambient Air Quality Standards. Health effects to TACs may occur at extremely low levels, and it is typically difficult to identify levels of exposure that do not produce adverse health effects.

Toxic Hot Spot: A location where emissions from specific sources may expose individuals and population groups to elevated risks of adverse health effects, including but not limited to cancer, and contribute to the cumulative health risks of emissions from other sources in the area.

**Traffic Calming:** The process of designing streets or adding design elements to tame fast traffic and address unsafe traffic conditions. Design elements include, for example, speed humps, narrowed streets, added traffic circle.

**Traffic Model:** A mathematical representation of traffic movement within an area or region based on observed relationships between the kind and intensity of development in specific areas. Many traffic models operate on the theory that trips are produced by persons living in residential areas and are attracted by various non-residential land uses.

**Transect:** A survey conducted by persons walking a study area which has been mentally divided into subareas, in order to systematically locate artifacts exposed on the ground. A series or transects, or passes, are walked by one or more persons in a parallel fashion to inventory an area.

**Transit:** The conveyance of persons or goods from one place to another by means of a local, public transportation system.

**Transit-dependent:** Refers to persons unable to operate automobiles or other motorized vehicles, or those who do not own motorized vehicles. Transit-dependent citizens must rely on transit, para-transit, or
owners of private vehicles for transportation. Transit-dependent citizens include the young, the handicapped, the elderly, the poor, and those with prior violations in motor vehicle laws.

**Transit-oriented Development (TOD):** A mixed-use community within an average 2,000-foot walking distance of a transit stop and core commercial area. TODs mix residential, retail, office, and public uses in a walkable environment, making it convenient for residents and employees to travel by transit, bicycle, foot, or car.

**Transit, Public:** A system of regularly-scheduled buses and/or trains available to the public on a fee-per-ride basis. Also called “Mass Transit.”

**Transportation Control Measures (TCMs):** Air pollution control measures in the Air Quality Management Plan that are directed to reducing air emissions by reducing vehicle miles traveled, vehicle idling, or traffic congestion. Federal and state law specifies requirements for TCMs. Steps taken by a locality to adjust traffic patterns (e.g., bus lanes, right turn on red) or reduce vehicle use (ridesharing, high-occupancy vehicle lanes) to reduce vehicular emissions of air pollutants. It is any measure that is specifically identified and committed to in the applicable implementation plan that is either one of the types listed in §108 of the Clean Air Act, or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions.

**Transportation Demand Management (TDM):** A strategy for reducing demand on the road system by reducing the number of vehicles using the roadways and/or increasing the number of persons per vehicle. TDM attempts to reduce the number of persons who drive alone on the roadway during the commute period and to increase the number in carpools, vanpools, buses and trains, walking, and biking. TDM can be an element of Transportation Systems Management.

**Transportation Equity Act of the 21st Century (TEA 21):** TEA 21 was enacted June 9, 1998 as Public Law 105-178. TEA-21 authorizes and funds the federal surface transportation programs for highways, highway safety, and transit for the 6-year period of 1998-2003. The TEA 21 Restoration Act, enacted July 22, 1998, provided technical corrections to the original law.

**Transportation Improvement Plan (TIP):** A staged, multi-year, intermodal program of transportation projects that is consistent with the metropolitan transportation plan. It is a federal term.

**Transportation Systems Management (TSM):** A comprehensive strategy developed to address the problems caused by additional development, increasing trips, and a shortfall in transportation capacity. Transportation Systems Management focuses on more efficiently utilizing existing highway and transit systems rather than expanding them. TSM measures are characterized by their low cost and quick implementation time frame, such as computerized traffic signals, metered freeway ramps, and one-way streets.

**Trip:** The trip is the basic measurement used to describe transportation volumes. A one-way journey that proceeds from an origin to a destination via a single mode of transportation; the smallest unit of movement considered in transportation studies. Each trip has one "production end," (or origin, often from home, but not always), and one "attraction end," (destination).

**Trip Assignment:** The allocation of vehicle trips to available routes between locations in a traffic study area.

**Trip End:** Every trip has two ends—an origin and a destination. Conversely, every origin or destination generates two trip ends—one arriving and one leaving. For example, traveling from home to work and back involves two trips—home to work and work to home, and four trip ends—home as the origin and home...
as the destination. Quantification of trip ends is useful in describing the contribution of specific land uses to traffic volumes.

**Trip Generation:** The number of vehicle trip ends associated with (i.e., produced by) a particular land use or traffic study site. A trip end is defined as a single vehicle movement. Roundtrips consist of two trip ends.

**Trustee Agency:** A state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the state of California. Trustee agencies include the California Department of Fish and Game, State Lands Commission, the State Department of Parks and Recreation, and the University of California (with regard to sites within the Natural Land and Water Reserves System) (source: CEQA Guidelines §15386).

**Tsunami:** A sea wave produced by large-scale, short-duration disturbance of the ocean floor such as from subsidence, an earthquake, or a volcanic eruption.

**Turn Lane:** A lane devoted to vehicles making a turning movement to go in a different direction. Turn lanes are necessary to ensure the free-flow of traffic in the through lanes by providing a separate area/lane for turning traffic to slow down and complete the turning maneuver without impeding the through traffic.

**Underground Storage Tank (UST):** Refers to tanks used to store gasoline underground.

**Uniform Building Code (UBC):** A national, standard building code that sets forth minimum standards for construction, published by the International Conference of Building Officials (ICBO).

**United States Environmental Protection Agency (EPA):** The federal agency with primary responsibility setting of policy and guidelines and carrying out legal mandates for the protection of natural interests in environmental resources, including the Clean Water Act, Clean Air Act, Safe Drinking Water Act, and the Resource Conservation and Recovery Act. California is included within EPA Region IX, headquartered in San Francisco.


**Unique Farmland:** Lands of lesser quality soils used for the production of the state's leading agricultural cash crops. These lands are usually irrigated but may include non-irrigated orchards or vineyards as found in some climate zones in California (Source: Natural Resource Conservation Service).

**Urban:** Of, relating to, characteristic of, or constituting a city. Urban areas are generally characterized by moderate and higher density residential development (i.e., three or more dwelling units per acre), commercial development, and industrial development, and the availability of public services required for that development, specifically central water and sewer, an extensive road network, public transit, and other such services (e.g., safety and emergency response). Development not providing such services may be “non-urban” or “rural.” CEQA defines “urbanized area” as an area that has a population density of at least 1,000 persons per square mile (Public Resources Code 21080.14(b)).

**Urban and Built-Up Land:** Lands occupied by structures with a building density of at least one unit to one and one-half acres, or approximately six structures to a 10-acre parcel (Source: Natural Resource Conservation Service).

**Urban Design:** The attempt to give form, in terms of both beauty and function, to selected urban areas or to whole cities. Urban design is concerned with the location, mass, and design of various urban components and combines elements of urban planning, architecture, and landscape architecture.
**Urbanized Area:** Urbanized area means a central city or a group of contiguous cities with a population of 50,000 or more, together with adjacent densely populated areas having a population density of at least 1,000 persons per square mile. A Lead Agency shall determine whether a particular area meets the criteria in this section either by examining the area or by referring to a map prepared by the U.S. Bureau of the Census which designates the area as urbanized. Use of the term “urbanized area” in Section 15182 is limited to areas mapped and designated as urbanized by the U.S. Bureau of the Census. (Source: CEQA Guidelines §15387).

**Use Permit:** The discretionary and conditional review of an activity or function or operation on a site or in a building or facility.

**Utility Corridors:** Rights-of-way or easements for utility lines on either publicly or privately owned property.

**Variance:** An adjustment in regulations. Variances are based on discretionary decisions and may be granted to allow deviations from ordinance regulations governing such development factors such as setback, height, lot coverage, lot area and width, signs, off-street parking, landscaping, and wall, fencing, and screening standards. Variances may not be granted to authorize a use or activity that is not otherwise expressly authorized by the zone regulations governing the property. A variance usually is granted only upon demonstration of hardship based on the peculiarity of the property in relation to other properties in the same zone district.

**Vehicle Miles Traveled (VMT):** The total number of vehicle miles traveled over a specified length of time (e.g., daily, monthly, or yearly) or over a specified road or transportation corridor.

**Vehicle Trip:** Vehicle trip describes the number of vehicles traveling from point to point.

**Vehicle Trip Ends:** A single or one-direction vehicle movement with either the origin or destination inside a traffic study site.

**Very Low Income Household:** A household with an annual income usually no greater than 50 percent of the area median family income adjusted by household size, as determined by a survey of incomes conducted by a city or a county, or in the absence of such a survey, based on the latest available eligibility limits established by the U.S. Department of Housing and Urban Development (HUD) for the Section 8 housing program.

**View Corridor:** The line of sight (identified as to height, width, and distance) of an observer looking toward an object of significance to the community (e.g., ridgeline, river, historic building, etc.); the route that directs the viewers attention.

**View Point:** A location from which a site is visible.

**Viewshed:** The surface area that is visible from a given viewpoint or series of viewpoints. It is also the area from which that viewpoint or series of viewpoints may be seen (a collection of viewpoints). The viewshed aids in identifying the views that could be affected by the proposed action.

**Volatile:** Any substance that evaporates readily.

**Volatile Organic Compound (VOC):** Carbon-containing compounds that evaporate into the air, except for specific exempt compounds found to be non-photochemically reactive and thus not participating in smog formation. VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor; some examples include gasoline, alcohol, and solvents used in paints. VOC is synonymous with reactive organic gases and reactive organic compounds.
Volume-to-Capacity Ratio (V/C): In reference to public services or transportation, ratio of peak hour use to capacity. A measure of the operating capacity of a roadway or intersection, in terms of the number of vehicles passing through, divided by the number of vehicles that theoretically could pass through when the roadway or intersection is operating at its designed capacity. Abbreviated as "v/c." At a v/c ratio of 1.0, the roadway or intersection is operating at capacity. If the ratio is less than 1.0, the traffic facility has additional capacity. Although ratios slightly greater than 1.0 are possible, it is more likely that the peak hour will elongate into a "peak period." In evaluating the performance of a roadway, v/c ratios should be considered together with the letter grade system, which is more of a qualitative assessment based heavily on speeds and travel time.

Vulnerability Analysis: A method of analysis that identifies areas in the community that may be affected or exposed, individuals in the community who may display enhanced sensitivity to certain specific hazardous materials, and what facilities, property, or environment may be susceptible to damage should a hazardous materials release occur.

Vulnerable Zone: An area surrounding a site of a potential accident that could experience concentrations of released hazardous materials at levels sufficient to cause adverse health effects.

Warehousing Use: A use engaged in storage, wholesale, and distribution of manufactured products, supplies, and equipment, excluding bulk storage of materials that are inflammable or explosive or that present hazards or conditions commonly recognized as offensive.

Waste Stream: Any and all waste that has been generated and is being processed toward permanent disposition.

Wastewater: Water that has been previously used by a municipality, industry, or agriculture and has suffered a loss of quality as a result of use.

Wastewater Reclamation: Treatment and management of municipal, industrial, or agricultural wastewater to produce water of suitable quality for additional beneficial uses.

Watercourse: Natural or once natural flowing (perennially or intermittently) water including rivers, streams, and creeks. Includes natural waterways that have been channelized, but does not include manmade channels, ditches, and underground drainage and sewage systems.

Watershed: The total area above a given point on a watercourse that contributes water to its flow; the entire region drained by a waterway or watercourse that drains into a lake, or reservoir.

Waters of the United States: Refers to federally regulated streams classified as non-wetlands, as well as wetlands, bordered by an Ordinary High Water Mark. Waters of the United States are regulated by the U.S. Army Corps of Engineers.

Weaving: The process of exiting a site and merging across multiple lanes "with traffic" to reach an intersection and go in a different direction.

Weekday: Any day, Monday through Friday, that is not a legal holiday.

Wetland: Refers to the federal definition, and requires three parameters to be present: hydrologic indicators, hydric soil, and hydrophytic vegetation. Wetlands are a subset of Waters of United States. Wetlands in a riparian contact are regulated by the U.S. Army Corps of Engineers. Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.
**Wildlife Corridor:** A natural corridor, such as an undeveloped ravine, that is frequently used by wildlife to travel from one area to another.

**Williamson Act:** Known formally as the *California Land Conservation Act of 1965*, it was designed as an incentive to retain prime agricultural land and open space in agricultural use, thereby slowing its conversion to urban and suburban development. The program entails a 10-year contract between the city or county and an owner of land whereby the land is taxed on the basis of its agricultural use rather than the market value. The land becomes subject to certain enforceable restrictions, and certain conditions need to be met prior to approval of an agreement.

**Williamson Act Lands:** Lands preserved for agricultural production. Lands under Williamson Act contracts are assessed according to their agricultural use value rather than as potentially developable lands.

**Zero Lot Line:** A detached single-family unit distinguished by the location of one exterior wall on a side property line.

**Zone:** A specifically delineated area or district in a municipality within which regulations and requirements uniformly govern the use, placement, spacing and size of land and buildings.

**Zoning:** The division of a municipality by legislative regulations into areas or zones for the purpose of regulating land use, types of buildings, required yards and setbacks, parking, and other prerequisites to development. Zones are generally shown on a map and the text of the zoning ordinance specifies requirements for each zoning category. A program that implements policies of the General Plan.

**Zoning Map:** Government Code Section 65851 permits a legislative body to divide a county, a city, or portions thereof, into zones of the number, shape, and area it deems best suited to carry out the purposes of the zoning ordinance. These zones are delineated on a map or maps, called the Zoning Map.

**Zoning Ordinance:** A law dividing all land in the city into zones that specifies uses permitted and standards required in each zone.
# Appendix I Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>degrees Fahrenheit</td>
</tr>
<tr>
<td>AADT</td>
<td>annual average daily traffic</td>
</tr>
<tr>
<td>AB</td>
<td>Assembly Bill</td>
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<tr>
<td>ACM</td>
<td>asbestos-containing material</td>
</tr>
<tr>
<td>ACS</td>
<td>American Community Survey</td>
</tr>
<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
</tr>
<tr>
<td>ADL</td>
<td>aerially deposited lead</td>
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<tr>
<td>ADT</td>
<td>average daily trips</td>
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<tr>
<td>Af</td>
<td>Artificial Fill</td>
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<tr>
<td>APE</td>
<td>Area of Potential Effects</td>
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<tr>
<td>AQMP</td>
<td>Air Quality Management Plan</td>
</tr>
<tr>
<td>ARB</td>
<td>California Air Resources Board</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Standards for Testing and Materials</td>
</tr>
<tr>
<td>ATPL</td>
<td>Active Transportation Program</td>
</tr>
<tr>
<td>AVAQMD</td>
<td>Antelope Valley Air Quality Management District</td>
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<tr>
<td>AVEK</td>
<td>Antelope Valley-East Kern Water Agency</td>
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<td>AVGS</td>
<td>Antelope Valley Genealogical Society</td>
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<tr>
<td>AVTA</td>
<td>Antelope Valley Transit Agency</td>
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<tr>
<td>BMP</td>
<td>Best Management Practice</td>
</tr>
<tr>
<td>BSA</td>
<td>Biological Study Area</td>
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<tr>
<td>CAAQS</td>
<td>California Ambient Air Quality Standards</td>
</tr>
<tr>
<td>Cal/EPA</td>
<td>California Environmental Protection Agency</td>
</tr>
<tr>
<td>Cal-IPC</td>
<td>California Invasive Plant Council</td>
</tr>
<tr>
<td>Caltrans</td>
<td>California Department of Transportation</td>
</tr>
<tr>
<td>CARB</td>
<td>California Air Resources Board</td>
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<tr>
<td>CC</td>
<td>Community Commercial</td>
</tr>
<tr>
<td>CCAA</td>
<td>California Clean Air Act</td>
</tr>
<tr>
<td>CDFW</td>
<td>California Department of Fish and Wildlife</td>
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<tr>
<td>CDPH</td>
<td>California Department of Public Health</td>
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<tr>
<td>CEQ</td>
<td>Council on Environmental Quality</td>
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<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
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<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation and Liability Act of 1980</td>
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<td>CERFA</td>
<td>Community Environmental Response Facilitation Act</td>
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<tr>
<td>CESA</td>
<td>California Endangered Species Act</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CH₄</td>
<td>methane</td>
</tr>
<tr>
<td>CHL</td>
<td>California Historical Landmarks</td>
</tr>
<tr>
<td>CHRIS</td>
<td>California Historical Resources Information System</td>
</tr>
<tr>
<td>CM</td>
<td>Commercial Manufacturing</td>
</tr>
<tr>
<td>CMP</td>
<td>Congestion Management Plan</td>
</tr>
<tr>
<td>CoMP</td>
<td>Corridor Master Plan</td>
</tr>
<tr>
<td>CNEL</td>
<td>Community Noise Equivalent Level</td>
</tr>
<tr>
<td>CNPS</td>
<td>California Native Plant Society</td>
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<tr>
<td>CO</td>
<td>carbon monoxide</td>
</tr>
<tr>
<td>CO₂</td>
<td>carbon dioxide</td>
</tr>
<tr>
<td>CO-CAT</td>
<td>Coastal Ocean Climate Action Team</td>
</tr>
</tbody>
</table>
### Appendix I: Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPHI</td>
<td>California Points of Historical Interest</td>
</tr>
<tr>
<td>CRHR</td>
<td>California Register of Historic Places</td>
</tr>
<tr>
<td>CRPR</td>
<td>California Rare Plant Rank</td>
</tr>
<tr>
<td>CTP</td>
<td>California Transportation Plan</td>
</tr>
<tr>
<td>CUP</td>
<td>Conditional Use Permit</td>
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<tr>
<td>CWA</td>
<td>Clean Water Act</td>
</tr>
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<td>DC</td>
<td>Downtown Commercial</td>
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<tr>
<td>DOF</td>
<td>California Department of Finance</td>
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<tr>
<td>DSA</td>
<td>Disturbed Soil Area</td>
</tr>
<tr>
<td>EA</td>
<td>Environmental Assessment</td>
</tr>
<tr>
<td>EO</td>
<td>Executive Order</td>
</tr>
<tr>
<td>ESA</td>
<td>Environmental Site Assessment</td>
</tr>
<tr>
<td>ESA</td>
<td>Environmentally Sensitive Area</td>
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<tr>
<td>FAST Act</td>
<td>Fixing America’s Surface Transportation Act</td>
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<tr>
<td>FCAA</td>
<td>Federal Clean Air Act</td>
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<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
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<tr>
<td>FESA</td>
<td>Federal Endangered Species Act</td>
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<td>FHWA</td>
<td>Federal Highway Administration</td>
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<tr>
<td>FIFRA</td>
<td>Federal Insecticide, Fungicide, and Rodenticide Act</td>
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<tr>
<td>FRIS</td>
<td>Final Relocation Impact Report</td>
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<tr>
<td>FSTIP</td>
<td>Federal State Transportation Improvement Program</td>
</tr>
<tr>
<td>ft</td>
<td>feet</td>
</tr>
<tr>
<td>FTA</td>
<td>Federal Transit Administration</td>
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<tr>
<td>FTIP</td>
<td>Federal Transportation Improvement Program</td>
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<tr>
<td>GHG</td>
<td>greenhouse gas</td>
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<tr>
<td>GIS</td>
<td>Geographic Information Systems</td>
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<tr>
<td>H2S</td>
<td>hydrogen sulfide</td>
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<tr>
<td>HDC</td>
<td>High Desert Corridor</td>
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<tr>
<td>HDR</td>
<td>High Density Residential</td>
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<tr>
<td>HFC-134a</td>
<td>s, s, s, 2-tetrafluoroethane</td>
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<td>HFC-152a</td>
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<td>HFC-23</td>
<td>fluoroform</td>
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<td>HMMP</td>
<td>Habitat Mitigation and Monitoring Program</td>
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<tr>
<td>I</td>
<td>Interstate</td>
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<tr>
<td>IGR</td>
<td>Intergovernmental Review</td>
</tr>
<tr>
<td>in/sec</td>
<td>inch(es) per second</td>
</tr>
<tr>
<td>IND</td>
<td>Industrial</td>
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<tr>
<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<tr>
<td>IRWM</td>
<td>Integrated Water Management Plan</td>
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<tr>
<td>IS</td>
<td>Initial Study</td>
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<tr>
<td>ITS</td>
<td>Intelligent Transportation System</td>
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<tr>
<td>KVA</td>
<td>kilovolt amps</td>
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<tr>
<td>LA</td>
<td>Los Angeles</td>
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<tr>
<td>LACDPH</td>
<td>Los Angeles County Department of Public Health</td>
</tr>
<tr>
<td>LACFD</td>
<td>Los Angeles County Fire Department</td>
</tr>
<tr>
<td>LASD</td>
<td>Los Angeles County Sheriff Department</td>
</tr>
<tr>
<td>lbs/day</td>
<td>pounds per day</td>
</tr>
<tr>
<td>LD 831</td>
<td>Larson Davis Laboratories Model 831</td>
</tr>
<tr>
<td>LED</td>
<td>light-emitting diode</td>
</tr>
<tr>
<td>LEDPA</td>
<td>least environmentally damaging practicable alternative</td>
</tr>
<tr>
<td>L&lt;sub&gt;eq&lt;/sub&gt;</td>
<td>equivalent noise level</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>---------</td>
<td>------------</td>
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<tr>
<td>$L_{eq}$</td>
<td>average noise levels</td>
</tr>
<tr>
<td>$L_{max}$</td>
<td>maximum noise level</td>
</tr>
<tr>
<td>$L_{min}$</td>
<td>minimum noise level</td>
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<tr>
<td>LOS</td>
<td>Level of Service</td>
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<tr>
<td>LRTP</td>
<td>Long Range Transportation Program</td>
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<tr>
<td>LUST</td>
<td>leaking underground storage tank</td>
</tr>
<tr>
<td>MDAB</td>
<td>Mojave Desert Air Basin</td>
</tr>
<tr>
<td>METRO</td>
<td>Los Angeles County Metropolitan Transportation Authority</td>
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<tr>
<td>MFR</td>
<td>Multifamily Residential</td>
</tr>
<tr>
<td>MHDR</td>
<td>Medium High Density Residential</td>
</tr>
<tr>
<td>MMT</td>
<td>million metric tons</td>
</tr>
<tr>
<td>mph</td>
<td>miles per hour</td>
</tr>
<tr>
<td>MPM</td>
<td>Maximum Probably Magnitude</td>
</tr>
<tr>
<td>MPO</td>
<td>Metropolitan Planning Organization</td>
</tr>
<tr>
<td>MR</td>
<td>Medium Residential</td>
</tr>
<tr>
<td>MS4</td>
<td>municipal separate storm sewer system</td>
</tr>
<tr>
<td>msl</td>
<td>mean sea level</td>
</tr>
<tr>
<td>MT</td>
<td>metric tons</td>
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<td>PM$_{10}$</td>
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<td>Transportation Demand Management</td>
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### Acronyms

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<td>Toxic Substances Control Act</td>
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<td>V/C</td>
<td>volume-to-capacity</td>
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<td>volatile organic compounds</td>
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<td>WDR</td>
<td>Water Discharge Requirement</td>
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<td>WPCP</td>
<td>Water Pollution Control Plan</td>
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<td>μg/m³</td>
<td>micrograms per cubic meter</td>
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Appendix J • Agency Contact Letters

Project Name: City of Palmdale - Avenue R Complete Streets and Safe Routes Project

County of Los Angeles
Sheriff’s Department Headquarters
4700 Ramona Boulevard
Monterey Park, California 91754-2169

May 12, 2014

Mike Mischel
Director of Public Works
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

Dear Mr. Mischel,

On behalf of the Los Angeles County Sheriff’s Department, I am writing this letter to voice our support of the City’s application for an Active Transportation Grant for Pedestrian and Bicycle improvements on Avenue R between Sierra Highway and 25th Street East.

This important project will provide a safer walking and biking environment for pedestrians and bicyclists in this portion of Palmdale. Connections will be provided to an existing sidewalk and bicycle lane network on Avenue R. Currently pedestrians and bicyclists, many of which are school-age children, are faced with using a narrow shoulder of the roadway to travel to and from school. In fact, in some cases, they are forced to share the travel lane(s) with vehicles and buses. This situation is certainly undesirable and would be remedied by this project.

The subject area includes low income households and includes a large number of school-age children. Avenue R is part of Metro’s Strategic Arterial Network and is also consistent with the City’s General Plan bike and trails plan. In addition, the project scope encourages active and sustainable transportation options for communities; which is consistent with SCAG’s currently adopted 2012-2035 Regional Transportation Plan (SCS).

We look forward to a successful application and project that will continue to increase transportation options and safety on this corridor. Please contact me if I can be of further assistance.

Sincerely,

[Signature]
Deputy Brent Bunch #447997
Traffic Investigator

Project Name: City of Palmdale - Avenue R Complete Streets and Safe Routes Project
May 12, 2014

Malcolm Dougherty
Director
California Department of Transportation
P.O. Box 942873
Sacramento, CA  94273-0001

RE: Letter of Support for Avenue R Pedestrian and Bicycle Improvements
Active Transportation Program (ATP) Application

Dear Director Dougherty:

The Los Angeles County Metropolitan Transportation Authority (Metro) is pleased to support the Active Transportation Program (ATP) funding request for the Avenue R Pedestrian and Bicycle Improvements in the City of Palmdale. Metro is committed to promoting sustainability through direct actions to implement policies, programs and projects as well as through collaboration with local jurisdictions and agencies to meet the mandate to reduce greenhouse gas emissions as well as to increase mobility, safety and the social and economic vitality of our communities.

Active transportation is a key planning priority within Metro and aligns with regional mobility strategies and plans. The 2012-2035 Regional Transportation Plan/Sustainable Communities Strategies(RTP/SCS) adopted by the Southern California Association of Governments(SCAG) identifies active transportation as a key component. In furthering regional goals, Metro has developed multiple initiatives and programs to systematically address the challenges associated with bicycling and walking trips, including the Countywide Sustainability Planning Policy, the First/Last Mile Strategic Plan, the Safe Routes to School Pilot program and through financial commitments as Part of the Long Range Transportation Plan (LRTP) and the bi-annual Call for Projects process which funds local bicycle and pedestrian projects that are consistent with both local and regional plans.

We find this project to be consistent with the SCAG RTP/SCS and the LRTP and endorse the City of Palmdale's efforts and contribution towards a sustainable transportation future. We respectfully request a favorable consideration of the Avenue R Pedestrian and Bicycle Improvements for the ATP grant.

Sincerely,

Arthur T. Leahy
Chief Executive Officer

Arthur T. Leahy
Chief Executive Officer
Appendix J • Agency Contact Letters

Project Name: City of Palmdale - Avenue R Complete Streets and Safe Routes Project

May 15, 2014

Matt Anderson
Principal

Palmdale High School
Antelope Valley Union High School District

Mike Mielke
Director of Public Works
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

Dear Mr. Mielke,

On behalf of the Palmdale High School, I am writing this letter to voice our support of the City’s application for an Active Transportation Grant for Pedestrian and Bicycle improvements on Avenue R between Sierra Highway and 25th Street East.

This important project will provide a safer walking and biking environment for pedestrians and bicyclists in this portion of Palmdale. Connections will be provided to an existing sidewalk and bicycle lane network on Avenue R. Currently, pedestrians and bicyclists, many of which are school-age children, are faced with using a narrow shoulder of the roadway to travel to and from school. In fact, in some cases, they are forced to share the travel lane(s) with vehicles and buses. This situation is certainly undesirable and would be remedied by this project.

The subject area includes low income households and includes a large number of school-age children. Avenue R is part of Metro’s Strategic Arterial Network and is also consistent with the City’s General Plan bike and trails plan. In addition, the project scope encourages active and sustainable transportation options for communities; which is consistent with SCAG’s currently adopted 2012-2035 Regional Transportation Plan (SCS).

We look forward to a successful application and project that will continue to increase transportation options and safety on this corridor. Please contact me if I can be of further assistance.

Sincerely,

Matt Anderson
Principal
Palmdale High School

2137 East Avenue R – Palmdale, California 93550
(661) 273-3181 – FAX (661) 273-1093
Appendix J • Agency Contact Letters

Project Name: City of Palmdale - Avenue R Complete Streets and Safe Routes Project

Antelope Valley Transit Authority

Board of Directors

Chairman
Norm Hickling
County of Los Angeles

Vice-Chairman
Marvin Crist
City of Lancaster

Director
Tom Lackey
City of Palmdale

Director
Steven D. Hofbauer
City of Palmdale

Director
Dianne Knipple
County of Los Angeles

Director
Sandra Johnson
City of Lancaster

Executive Director
Julie M. Austin

May 12, 2014

Mike Mischel
Director of Public Works
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

Dear Mr. Mischel,

On behalf of the Antelope Valley Transit Authority, I am writing this letter to voice our support of the City's application for an Active Transportation Grant for Pedestrian and Bicycle improvements on Avenue R between Sierra Highway and 25th Street East.

This important project will provide a safer walking and biking environment for pedestrians and bicyclists in this portion of Palmdale. Connections will be provided to an existing sidewalk and bicycle lane network on Avenue R. Currently pedestrians and bicyclists, many of which are school-age children, are faced with using a narrow shoulder of the roadway to travel to and from school. In fact, in some cases, they are forced to share the travel lane(s) with vehicles and buses. This situation is certainly undesirable and would be remedied by this project.

The subject area includes low income households and includes a large number of school-age children. Avenue R is part of Metro’s Strategic Arterial Network and is also consistent with the City’s General Plan bike and trails plan. In addition, the project scope encourages active and sustainable transportation options for communities; which is consistent with SCAG’s currently adopted 2012-2035 Regional Transportation Plan (SCS).

We look forward to a successful application and project that will continue to increase transportation options and safety on this corridor. Please contact me if I can be of further assistance.

Sincerely,

Julie M. Austin
Executive Director
May 13, 2014

Mike Mischel
Director of Public Works
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

Dear Mr. Mischel,

On behalf of the Palmdale School District, I am writing this letter in support of the City’s application for an Active Transportation Grant for Pedestrian and Bicycle improvements on Avenue R between Sierra Highway and 25th Street East.

The project will provide more walking and biking areas for pedestrians and bicyclists. This project will also allow for safer means of travel for the pedestrians and bicyclists. Many of our students use narrow pathways to and from school which is unsafe and dangerous.

The Palmdale School District supports this project and feels it will alleviate some of these safety concerns allowing safer routes to and from school for our students, parents, and community members.

Sincerely,

Cathy Shepard
Chief Business Officer
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Appendix K  Responses to Comments

This Appendix contains the written comments received during the public circulation and comment period from December 16, 2016, to January 17, 2017. Comments have been received from the agencies and organizations listed below. A response follows each comment presented.

The following is a listing of the comments included in this Appendix (Note: the date of the comment is listed in parentheses):

- Comment Letter 1 - Fish and Wildlife Service (December 16, 2016)
- Comment Letter 2 - Caltrans District 7 (January 4, 2017)
- Comment Letter 4 - Office of Planning and Research (January 18, 2017)
- Comment Letter 5 - Sprint (December 19, 2016)
- Phone Message Received by Caltrans

In addition, the Regional Water Quality Control Board, Lahontan Region sent their comment letter two weeks after the comment period closed. Letter from San Manuel Band Of Mission Indians was also received a moth after comment period closed. Out of curtesy, Caltrans included the comments letter and provided responses to the letter.

- Comment Letter 6 - Lahontan Regional Water Quality Control Board (January 30, 2017)
- Comment Letter 7 – San Manuel Band of Mission Indians (February 13, 2017)
Appendix K • Responses to Comments

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From: Ray Bransfield <ray_bransfield@fws.gov>
Sent: Friday, December 16, 2016 3:32 PM
To: Chemnitz, Quint M@DOT
Cc: Brian Croft
Subject: Avenue R/Palmdale

Quint,
I just received your NOI for the Avenue R Project in Palmdale. The U.S. Fish and Wildlife Service has no intention to comment on this project because it is located entirely in developed areas and will not affect our trust resources.

Also, the NOI was sent to the Ventura Fish and Wildlife Office. The Ventura Fish and Wildlife Office no longer conducts any activities in the California desert. Please send all future correspondence for Caltrans’ activities in the California desert to:

Assistant Field Supervisor
Palm Springs Fish and Wildlife Office
U.S. Fish and Wildlife Service
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

760 322-2070

If you have any questions, please contact me via email or at (805) 644-1766, extension 317.

Thanks much.
Ray
Appendix K • Responses to Comments

Response to Comment Letter 1 from Fish and Wildlife Service
Dated December 16, 2016

Response to Comment 1-1
The comment is noted and is included in the project record. Since the letter from the U.S. Fish and Wildlife Service (USFWS) does not question the content or conclusions of the Draft Environmental Assessment (EA), no further response is required.

Response to Comment 1-2
The comment is noted and is included in the project record. All future correspondence on this project will be directed to the Palm Springs office. Since the letter from the USFWS does not question the content or conclusions of the Draft EA, no further response is required.
Appendix K • Responses to Comments

January 4, 2017

Mr. Mike Livingston
City of Palmdale
38250 Sierra Highway
Palmdale, CA, 93550

RE: Avenue R Safety Improvement
Mitigated Negative Declaration
GTS# 07-LA-2016-00387
SCH# 2016121050

Dear Mr. Livingston:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The project consists of various bicycle and pedestrian infrastructure improvements in the City of Palmdale along Avenue R to provide safe access to Tumbleweed Elementary School.

Based on the information received, Caltrans has the following comments:

State policies and goals related to sustainable transportation seek to reduce the number of trips made by driving, reduce greenhouse gas emissions, and encourage alternative modes of travel. Caltrans' Strategic Management Plan has set a target of tripling trips made by bicycling, doubling trips made by walking and public transit by 2020. The Strategic Plan also seeks to achieve a 15% reduction in statewide per capita vehicle miles traveled by 2020. Statewide legislation such as AB 32 and SB 375, as well as Governor Executive Orders S-3-05 and B-16-12, further echo the need to pursue more sustainable development and transportation patterns.

As proposed, the project is consistent with Caltrans policy goals. We support the implementation of complete streets, road diets, and other active transportation safety improvements necessary to promote more walking and bicycling.

If you have any questions regarding these comments, please contact project coordinator Severin Martinez, at (213)-897-0067 or severin.martinez@dot.ca.gov and refer to GTS# 07-LA-2016-00387.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

"Provide a safe, sustainable, integrated and efficient transportation system in enhance California's economy and livability"
Response to Comment Letter 2 from Caltrans  
Dated January 4, 2017

Response to Comment 2-1

Caltrans support for the Build Alternative is acknowledged and included in the project record. Since the letter from Caltrans does not question the content or conclusions of the Draft Environmental Assessment (EA), no further response is required.
Appendix K • Responses to Comments

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
1803 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Fax (916) 373-6771
Email: naho@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHCl

January 11, 2017

Mike Livingston
City of Palmdale
58250 Sierra Highway
Palmdale, CA 93550

Re: SCH# 2016121050, Avenue R Safety Improvement Project, City of Palmdale; Los Angeles County, California

Dear Mr. Livingston:

The Native American Heritage Commission (NAHC) has reviewed the Mitigated Negative Declaration prepared for the project referenced above. The review included the Project Description/Introduction, the Environmental Checklist, the Initial Study/Environmental Assessment Chapter 2, Section 2.1.7 Cultural Resources, and Appendix A, prepared by BonTerra Pavnas for the City of Palmdale. We have the following concerns:

- There is no Tribal Cultural Resources section or subsection in the Executive Summary as per California Natural Resources Agency (2016). "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form." [http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-Text-Submitted.pdf]
- There are no mitigation measures specifically addressing Tribal Cultural Resources separately. Mitigation measures must take Tribal Cultural Resources into consideration as required under AB-52, with or without consultation occurring. Mitigation language for archaeological resources is not always appropriate for or similar to measures specifically for handling Tribal Cultural Resources.

The California Environmental Quality Act (CEQA)1, specifically Public Resources Code section 21081, states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.2 If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared.3 In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended in 2014 by Assembly Bill 52. (AB 52).4 AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015. AB 52 created a separate category for "tribal cultural resources", that now includes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."5 Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.6 Your project may also be subject to Senate Bill 18 (SB 18) (Burton, Chapter 905, Statutes of 2004), Government Code 65352.3, if it also involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space. Both SB 18 and AB 52 have tribal consultation requirements. Additionally, if your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 19667 may also apply.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

1 Pub. Resources Code § 21000 et seq.
2 Pub. Resources Code § 21081.1, Cal. Code Regs., tit. 14, § 15064.5 (b); CEQA Guidelines Section 15061.3 (b)
3 Pub. Resources Code § 21081.1, Cal. Code Regs., tit. 14, § 15064 subd. (a);
5 Government Code 65352.3
6 Pub. Resources Code § 21081.2
7 Pub. Resources Code § 21081.3 (a)
Appendix K • Responses to Comments

Agencies should be aware that AB 52 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52. For that reason, we urge you to continue to request Native American Tribal Consultation Lists and Sacred Lands File searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/. Additional information regarding AB 52 can be found online at http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPA_PDF.pdf, entitled “Tribal Consultation Under AB 52: Requirements and Best Practices”.

The NAHC recommends lead agencies consult with all California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

A brief summary of portions of AB 52 and SB 18 as well as the NAHC’s recommendations for conducting cultural resources assessments is also attached.

Please contact me at gayle.totton@nahc.ca.gov or cell (916) 373-3710 if you have any questions.

Sincerely,

Gayle Totton, B.S., M.A., Ph.D.
Associate Governmental Project Analyst

Attachment

cc: State Clearinghouse
Appendix K • Responses to Comments

Pertinent Statutory Information:

Under AB 52:
AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice.

A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. For purposes of AB 52, “consultation shall have the same meaning as provided in Gov. Code § 65362.4 (SB 16).”

The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- Alternatives to the project.
- Recommended mitigation measures.
- Significant effects.

1. The following topics are discretionary topics of consultation:
   - Type of environmental review necessary.
   - Significance of the tribal cultural resources.
   - Significance of the project’s impacts on tribal cultural resources.

If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency.

With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 65364 (f) and 65364.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

If a tribe may have a significant impact on a tribal cultural resource, the lead agency’s environmental document shall discuss both of the following:

- Whether the proposed project has a significant impact on an identified tribal cultural resource.
- Whether feasible alternatives or mitigation measures, including those resources that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.

Consultation with a tribe shall be considered concluded when either of the following occurs:

- The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
- A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program. If it determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable.

If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there is no agreement upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b).

An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

- The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.5 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
- The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

13 Pub. Resources Code § 21080.3.1, subdiv. (d) and (e)
14 Pub. Resources Code § 21080.3.1 (a)
15 Pub. Resources Code § 21080.3.2 (a)
16 Pub. Resources Code § 21080.3.2 (e)
17 Pub. Resources Code § 21080.3.2 (d)
18 Pub. Resources Code § 21080.3.2 (b)
19 Pub. Resources Code § 21080.3.2 (c)
20 Pub. Resources Code § 21080.2 (a)
21 Pub. Resources Code § 21080.2 (b)
22 Pub. Resources Code § 21080.2 (c)
23 Pub. Resources Code § 21080.2 (d)
Appendix K • Responses to Comments

The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1(d) and the tribe failed to request consultation within 30 days. This process should be documented in the Tribal Cultural Resources section of your environmental document.

Under SB 18:
Government Code § 65352.3(a)(1) requires consultation with Native Americans on general plan proposals for the purposes of protecting places, features, and objects described § 5067.9 and § 5091.993 of the Public Resources Code that are located within the city or county's jurisdiction. Government Code § 65650(a), (b), and (c) provides for consultation with Native American tribes on the open-space element of a county or city general plan for the purposes of protecting places, features, and objects described in Sections 5067.9 and 5091.993 of the Public Resources Code.

- SB 18 applies to local governments and requires them to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. Local governments should consult the Governor's Office of Planning and Research's 'Tribal Consultation Guidelines,' which can be found online at: [https://www.opr.ca.gov/docs/09_14_05_updated_guidelines_522.pdf](https://www.opr.ca.gov/docs/09_14_05_updated_guidelines_522.pdf).
- Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space, it is required to contact the appropriate tribes identified by the NAHC by requesting a 'Tribal Consultation Letter.' If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.

- There is no Statutory Time Limit on Tribal Consultation under the law.
- Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5067.9 and 5091.993 that are within the city's or county's jurisdiction.

Conclusion: Consultation should be concluded at the point in which the parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or

- Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation.

NAHC Recommendations for Cultural Resource Assessments:

- Contact the NAHC for:
  - A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - A Native American Tribal Contact List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
    - The request form can be found at [http://nahc.ca.gov/resources/forms/](http://nahc.ca.gov/resources/forms/)

- Contact the appropriate regional California Historical Research Information System (CHRIS) Center for an archaeological records search. The records search will determine:
  - If part or the entire APE has been previously surveyed for cultural resources.
  - If any known cultural resources have been already recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.

- If an archaeological inventory is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

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Appendix K • Responses to Comments

Examples of Mitigation Measures That May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- Avoidance and preservation of the resources in place, including, but not limited to:
  - Planning and construction to avoid the resources and protect the cultural and natural context.
  - Planning greenway, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource.
  - Protecting the traditional use of the resource.
  - Protecting the confidentiality of the resource.

- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

- Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed.23

- Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.24

The lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence:

- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the identification and evaluation of inadvertently discovered archaeological resources.25 In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7083.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15304.5, subd. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

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23 (Civ. Code § 815.3(b)).
25 per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15304.5(f)).
Appendix K • Responses to Comments

Response to Comment Letter 3 from Native American Heritage Commission
Dated January 11, 2017

Response to Comment 3-1
Assembly Bill (AB) 52, which went into effect on July 1, 2015, proposed to include tribal cultural resources in the California Environmental Quality Act (CEQA) analysis, and introduced a new class of resources: Tribal Cultural Resources. The California Office of Administrative Law approved the changes to the CEQA checklist to incorporate the Tribal Cultural Resources questions on September 27, 2016, and the Office of Planning and Research (OPR) drafted a discussion draft on the proposed changes for public review. The comment period of the Discussion Draft of the Proposed Changes to Appendix G of the CEQA was closed on December 18, 2016—two days after the Initial Study (IS)/Environmental Assessment (EA) was distributed for public review. Because OPR had not sent and approved the updated checklist questions before the IS/EA went out for public review, they were not reflected in Appendix A or in the IS/EA. The final IS/EA has been modified to include text outlining the actions taken in compliance with AB 52. This text was added under the Section 2.1.7 Cultural Resources.

Response to Comment 3-2
No mitigation measures were identified because the Project does not contain any known tribal cultural resources. As described in the Section 2.1.7, the Native American Heritage Commission (NAHC) was notified about the Project on May 26, 2015, and was asked to conduct a records search of its Sacred Lands Inventory. The NAHC responded on June 23, 2015, with negative results for the search and provided a list of tribes that it recommends be contacted for additional information. Letters were mailed to the tribes on that list on July 13, 2015, requesting any information the tribes may have regarding the Project area. One response was received via email from Daniel McCarthy, Director – Cultural Resources Management Department, San Manuel Band of Mission Indians. Following this, on September 29, 2015, the NAHC sent a list of additional tribes for consultation pursuant to AB 52. Five tribes (the three tribes that received the first letter and two additional tribes identified by the NAHC) were contacted by the City pursuant to AB 52 on October 26, 2015. No tribes responded as part of this subsequent contact. As a result, no tribal cultural resources requiring protection and mitigation were identified. However, a Caltrans standard construction provision (CUL-1) was included in the Draft IS/EA which calls for work to be halted if previously unidentified cultural materials are unearthed during construction. An additional minimization measure has been added (CUL-2) that
requires that the San Manuel Band of Mission Indians be informed about findings and provided with the copy of the findings report for review and consultation if previously unidentified tribal cultural resources are unearthed during construction.

Response to Comment 3-3
As discussed in Section 2.1.7, an Area of Potential Effect (APE) was prepared in consultation with the Caltrans District 7 and was signed on March 29, 2016. No cultural resources, including historic resources, were found within the APE and thus no adverse and significant impacts to historic resources were identified. A Historic Resources Evaluation Report (HRER) was prepared, which determined that no historic properties are within the project APE. The State Historic Preservation Office (SHPO) concurred with this finding in December 2015. Therefore, the City did base their decision to prepare an IS as an adequate level of environmental documentation pursuant to CEQA in light of the record as a whole.

Response to Comment 3-4
The Project was subject to the requirements of AB 52, the CEQA Tribal Consultation law, which went into effect July 1, 2015. As such, in addition to the initial Native American coordination, consultation under AB 52 was subsequently conducted. On September 29, 2015, the NAHC sent a list of additional tribes for consultation pursuant to AB 52. The City of Palmdale, as the CEQA lead agency, prepared letters inviting the tribes listed on the NAHC Sacred Lands File search to consult with City. The City of Palmdale sent the letters to five tribes on October 26, 2015, thus fulfilling the obligations under AB 52. No tribes responded as part of this subsequent contact.

The Project is not subject to requirements of Senate Bill (SB) 18 because it does not involve the adoption or amendment of the General Plan or Specific Plan, nor does it include the designation of lands as open space.

Response to Comment 3-5
As discussed in response to Comment 3-4 the City of Palmdale, as the CEQA lead agency, sent letters to five tribes on October 26, 2015, inviting consultation under AB 52, thus fulfilling its obligations under AB 52. No tribes responded to the City as part of this subsequent contact.

Response to Comment 3-6
As discussed under response to Comments 3-2 and 3-4, the City of Palmdale requested a Sacred Land Inventory from the NAHC. The City received the list of
tribes and, on July 13, 2015, contacted them accordingly. One response was received via email from Daniel McCarthy, Director – Cultural Resources Management Department, San Manuel Band of Mission Indians. Mr. McCarthy stated that, while the Project is located within the Tribe’s ancestral territory, he is aware of no specific information about significant cultural resources at the Project location. If prehistoric cultural resources were identified during the survey, Mr. McCarthy requested a copy of the report for review and consultation. Following this, and pursuant to AB 52, the City received a second list of tribes from the NAHC to consult with, and initiated the consultation on October 26, 2015. No tribes responded as part of this subsequent contact.

Response to Comment 3-7
The summary of AB 52 and SB 18 is acknowledged.

Response to Comment 3-8
The AB 52 compliance process is described in the Tribal Cultural Resources Section in the IS/EA, and all the steps under AB 52 were followed. The City, as the lead agency, initiated consultation with the NAHC and received a list of tribes to consult. The Project was subject to the requirements of AB 52, the CEQA Tribal Consultation law which went into effect July 1, 2015. As such, in addition to the initial Native American coordination, consultation under AB 52 was subsequently conducted. On September 29, 2015, the NAHC sent a list of additional tribes for consultation pursuant to the AB 52. The City of Palmdale as the CEQA lead agency sent a letter inviting the tribes listed on the NAHC Sacred Lands File search to consult with City. The City of Palmdale sent the letters to five tribes on October 26, 2015, thus fulfilling its obligations under AB 52.

SB 18 requirements do not apply because this Project does not involve a General Plan or Specific Plan amendment, nor does it include designation of lands to open space. Therefore, SB 18 was not discussed in the IS/EA.

Response to Comment 3-9
The NAHC recommendation for Cultural Resources Assessments were followed. A Sacred Lands Files Search was conducted on May 26, 2015, as described in the IS/EA (see Section 2.1.7), and California Historical Research Information System was contacted on June 2, 2015. An archeological inventory survey was conducted on June 2, 2015. No prehistoric cultural resources were observed within the APE.
Response to Comment 3-10

Examples of mitigation are noted. Because this Project does not contain cultural resources, no mitigation measures were recommended. However, standard provisions regarding treatment and disposition of inadvertently discovered Native American human remains were included (see CUL-1). In addition, an avoidance measure was recommended to ensure proper notification of tribal members in case tribal cultural resources are found on site (see CUL-2).
Comment Letter 4

January 18, 2017

Mike Livingston
City of Palmdale
38250 N. Sierra Highway
Palmdale, CA 93550

Subject: Avenue R Safety Improvement Project
SCH#: 2016121050

Dear Mike Livingston:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on January 17, 2017, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project’s ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 2044 SACRAMENTO, CALIFORNIA 95812-2044
TEL (916) 446-0613 FAX (916) 323-3018 www.cpuc.ca.gov
# Appendix K - Responses to Comments

## Avenue R Safety Improvement Project Initial Study/Environmental Assessment

<table>
<thead>
<tr>
<th>SCH#</th>
<th>2018121050</th>
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</thead>
<tbody>
<tr>
<td>Project Title</td>
<td>Avenue R Safety Improvement Project</td>
</tr>
<tr>
<td>Lead Agency</td>
<td>Palmdale, City of</td>
</tr>
<tr>
<td>Type</td>
<td>MND - Mitigated Negative Declaration</td>
</tr>
<tr>
<td>Description</td>
<td>The city of Palmdale, in cooperation with Caltrans, proposes safety improvements along an approximate two-mile long segment of Avenue R, located in the city of Palmdale. The project limits begin just west of Sierra Highway and end about 0.1 mile (550 feet) east of 25th St East. In addition, one intersection at 11th St East and Avenue R-4 will be improved with new pedestrian crossing, sidewalks, and curb ramps (bulb out improvement) to provide safe access to the Tumbleweed ES. Improvements include: restriping, new dedicated bike lane, left-turn lane at the midblock, new sidewalks, ADA-compliant ramps, pedestrians crossings, upgrade to bus stops.</td>
</tr>
</tbody>
</table>

### Lead Agency Contact

| Name | Mike Livingston |
| Agency | City of Palmdale |
| Phone | (661) 257-5312 |
| Email |  |
| Address | 38250 N. Sierra Highway |
| City | Palmdale |
| State | CA |
| Zip | 93500 |

### Project Location

| County | Los Angeles |
| City | Palmdale |
| Region |  |
| Lat / Long |  |
| Cross Streets | Sierra Highway and 25 St East |
| Parcel No. |  |
| Township |  |

### Proximity to:

| Highways | SR 14 |
| Airports | Palmdale |
| Railways | UPRR |
| Waterways | Palmdale Lake |
| Schools | Tumbleweed ES |
| Land Use | Single, medium and multi family residential, commercial manufacturing, commercial facility, community commercial |

### Project Issues

- Aesthetic/Visual: Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects

### Reviewing Agencies

Resources Agency; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; Department of Water Resources; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 7; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 6 (Victorville); Native American Heritage Commission; Public Utilities Commission

### Date Received

| Date Received | 12/16/2016 |
| Start of Review | 12/16/2016 |
| End of Review | 01/17/2017 |
Response to Comment Letter 4 from Office of Planning and Research  
Dated January 18, 2017

Response to Comment 4-1

The Governor’s Office of Planning and Research, State Clearinghouse and Planning Unit letter confirms that the City complies with the State Clearinghouse review requirements for environmental documents. Since the letter from the State Clearinghouse does not question the content or conclusions of the Draft Initial Study (IS), no response is required.
Appendix K • Responses to Comments

Comment Letter 5

From: Fry, Jack R [Cascade Design Contractor for Sprint] <Jack.R.Fry@sprint.com>
Sent: Monday, December 19, 2016 9:22 AM
To: Chemnitz, Quint M@DOT
Cc: Laky, Tibor F Sr [CTO]; Durrett, Lynn L [CTO]; Preston, Kevin A [Cascade Design Contractor for Sprint]
Subject: File: 07-LA-Palmdale, ATPL-5378(038), Avenue R Complete and Safety Improvement Project

Good Morning Mr. Chemnitz,

Thank you for including Sprint on improvements. **Sprint has facilities** within the area of the proposed construction. Sprint’s facilities reside on the Railroad ROW in this area. Please see attached maps depicting the Railroad ROW alignment.

Sprint has prior rights and will produce if required as the project progresses. Sprint will require, at the State of California expense, to protect the fiber system if any work enters Railroad ROW. Sprint will need to review all plans prior to any planning or construction near the fiber facilities. Please send 1 set of scalable plans to Lynn Durrett with Sprint. Sprint will plot the fiber system on the plans.

Lynn Durrett
280 S. Sycamore Avenue
Rialto, Ca. 92376

No facilities may be added closer than two feet vertical or horizontal to Sprint structure including the encasement.

Sprint is very concerned about any excavation near the fiber system. The fiber can be electronically located for the horizontal but the vertical can only be determined by potholing. No mechanized excavation within two feet is allowed. Sprint needs to be present for any activity near the fiber.

Please have all contractors utilize the dig alert procedures before excavating, **CALL BEFORE YOU DIG 800-227-2600.**

Please feel free to contact me should you have any questions.

Sincerely,

Jack Fry
Contract Engineer for Sprint
M 949-862-9302
2592 Du Pont Drive, Irvine, CA 92812
jack.r.fry@sprint.com

This e-mail may contain Sprint proprietary information intended for the sole use of the recipient(s). Any use by others is prohibited. If you are not the intended recipient, please contact the sender and delete all copies of the message.
Appendix K • Responses to Comments

PUBLIC NOTICE
Notice of Intent to Adopt a Mitigated Negative Declaration
Notice of Availability of an Environmental Assessment

Avenue R Safety Improvement Project, between Sierra Highway and 25th Street East

WHAT IS BEING PLANNED?
The California Department of Transportation (Caltrans) District 7, in cooperation with the City of Palmdale (City), proposes to improve two mile segment of Avenue R from just west of Sierra Highway to 0.1 mile east of 25th Street East, in the City of Palmdale. The Project proposes to improve Avenue R and add a dedicated bike lane, a left-turn lane in the midblock, crosswalks and pedestrian crossings along the project segment. It also proposes to add continuous pavement and ramps that are compliant with the Americans with Disabilities Act. The Project purpose is to provide a safer corridor along Avenue R for local students, and to encourage school children and commuters to use active forms of transportation. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) while the City is the lead agency under the California Environmental Quality Act (CEQA).

The alternatives under consideration are "Alternative 1 (Build Alternative), and the "No Build Alternative." 

WHY THIS AD?
Caltrans, in conjunction with the City, has studied the effects that the proposed project may have on the environment and community. The results of these studies are contained in an environmental document known as a Draft Initial Study/Environmental Assessment (DISEA). The purpose of this notice is to inform the public of its completion and availability to any interested individuals, and to provide the public an opportunity to comment and request a public hearing.

WHAT'S AVAILABLE?
The Draft DISEA is available for viewing and download at http://www.cityofpalmdale.org/Businesses/Public-Works/DP. The DISEA is also available for review and reproduction at the Caltrans District 7, Division of Environmental Planning (100 S. Main Street, Los Angeles, CA 90015) on weekdays from 8:00 a.m. to 4:00 p.m. Additionally, the DISEA will be available for review at the Palmdale City Library (700 East Palmdale Boulevard, Palmdale, CA 93550) on weekdays from 10:00 a.m. to 6:00 p.m.

WHERE YOU COME IN CONTACTS
Have the potential impacts been addressed? Do you have information that should be included? Would you care to make any other comments on the project? Please submit your questions or comments in writing no later than 5 p.m., January 16, 2017 to:

Mr. Ron Kosinski, Deputy District Director
California Department of Transportation
Division of Environmental Planning (Ave R/Palmdale)
100 S. Main Street, MS-16A
Los Angeles, CA 90015

If there are no major comments (or requests for a public hearing), Caltrans and the City will proceed with the proposed design. For additional information, or to request a public hearing, please contact Mr. Quint Chinn at (213) 697-2853, or via e-mail at quint.chinn@dot.ca.gov. Thank you for your interest in this transportation improvement project.
Response to Comment 5-1
Coordination with all utility providers, including Sprint, is included in Section 2.1.4. As described, the Project Proponent is aware of the Sprint facilities located within the project right-of-way. Sprint will be given sufficient opportunity to review the Project plans. The receipt of the address is acknowledged. Coordination with Sprint will be conducted as described in standard provision UES-1.

Response to Comment 5-2
Comment noted. As described in standard provision UES-1, during Project design, the City of Palmdale and the Caltrans Right-of-Way Utilities Coordinator will coordinate with utility providers. This type of coordination is a standard process during the design phase. As described in Section 2.1.4 of the Initial Study (IS)/Environmental Assessment (EA), the improvements would be constructed without disrupting operations. This would be done through standard engineering practices.

Response to Comment 5-3
Comment noted. Contractors will utilize the dig alert as requested before excavation.

Response to Comment 5-4
Receipt of the figure and the location of the Sprint facilities is acknowledged.
January 30, 2017

Ron Kosinski, Deputy District Director
California Department of Transportation
Division of Environmental Planning (Ave R/Palmdale)
100 S. Main Street, MS-16A
Los Angeles, CA 90012

COMMENTS ON THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION FOR THE AVENUE R IMPROVEMENT PROJECT, PALMDALE, LOS ANGELES COUNTY

The California Regional Water Quality Control Board, Lahontan Region (Water Board) staff received the Notice of Intent (Notice) to Adopt a Mitigated Negative Declaration (MND) for the above-referenced project (Project) on December 15, 2016. Generally, the Project includes improvements to Avenue R from west of Sierra Highway to 0.1 mile east of 25th Street East in the City of Palmdale, with new pedestrian crossings, curb ramps, new dedicated bike lanes, a left-turn lane, new sidewalks, and bus stop upgrades. The Notice included a webpage link to the location of the Initial Study/Environmental Assessment (ISEA), and was circulated by the California Department of Transportation (Caltrans), in order to solicit input on the potential impacts on the environment and ways in which the significant effects on the Project area are proposed to be avoided or mitigated.

Water Board staff, acting as a responsible agency, is providing these comments to specify the scope and content of the environmental information germane to our statutory responsibilities pursuant to CEQA Guidelines, California Code of Regulations, title 14, section 15006. Based on our review of the limited information provided, we recommend that several issues be considered in the development of the Project, particularly: 1) drainage and stream channels be avoided to the extent practicable to minimize impacts; 2) erosion control construction best management practices (BMPs) be included to effectively treat storm water runoff during the life of the Project; 3) water quality and hydrology analyses that discuss the beneficial uses of the waters and potential Project impacts with respect to those beneficial uses; and 4) established numerical and narrative water quality objectives and standards be used when evaluating thresholds of significance for Project impacts. Our comments are outlined below.
Appendix K • Responses to Comments

WATER BOARD’S AUTHORITY

All groundwater and surface waters are considered waters of the State. Surface waters include streams, lakes, ponds, and wetlands, and may be ephemeral, intermittent, or perennial. All waters of the State are protected under California law. State law assigns responsibility for protection of water quality in the Lahontan Region to the Lahontan Water Board. Some waters of the State are also waters of the U.S. The Federal Clean Water Act (CWA) provides additional protection for those waters of the State that are also waters of the U.S.

The Water Quality Control Plan for the Lahontan Region (Basin Plan) contains policies that the Water Board uses with other laws and regulations to protect the quality of waters of the State within the Lahontan Region. The Basin Plan sets forth water quality standards for surface water and groundwater of the Region, which include designated beneficial uses as well as narrative and numerical objectives which must be maintained or attained to protect those uses. The Basin Plan can be accessed via the Water Board’s web site at http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml

SPECIFIC ISSUES TO BE CONSIDERED

We recommend that the following issues be considered in preparation of the Project.

1. Several drainages cross the Project area. It is anticipated that improvements of adding curbs and sidewalks along Avenue R will increase the amount of impervious surface in the area and, thus, has the potential to increase runoff rates and impact beneficial uses associated with the drainages. The Water Board requires that impacts to water resources be avoided where feasible and minimized to the extent practical. Compensatory mitigation will be required for all unavoidable permanent impacts to surface water resources. Water Board staff coordinate all mitigation requirements with staff from other federal and state regulatory agencies, including the U.S. Army Corps of Engineers (USACE) and the California Department of Fish and Wildlife. In determining appropriate mitigation ratios for impacts to waters of the State, Water Board staff considers Basin Plan requirements, which include, at minimum, a 1.5 to 1 mitigation ratio for impacts to wetlands. Water Board staff uses 12501-SPD Regulatory Program Standard Operating Procedure for Determination of Mitigation Ratios, published December 2012 by the USACE, South Pacific Division, to enable us to determine a mitigation ratio for projects that impact waters in our region.

2. Post-construction storm water management must be considered a significant Project component, and BMPs that effectively treat post-construction storm water runoff should be included as part of the Project. The IS/MND does not specifically identify features to control storm water on-site or prevent pollutants from non-point sources from entering and degrading surface or groundwater. The foremost method of reducing impacts to watersheds from urban development is “Low Impact Development” (LID), the goals of which are to maintain a landscape functionally equivalent to predevelopment hydrologic
conditions and to minimize generation of non-point source pollutants. LID results in less surface runoff and potentially less impacts to receiving waters, the principles of which include: maintaining natural drainage paths and landscape features to slow and filter runoff and maximize groundwater recharge; managing runoff as close to the source as possible; and maintaining vegetated areas for storm water management and onsite filtration.

3. The beneficial uses of water resources are listed either by watershed (for surface waters) or by groundwater basin (for groundwater) in Chapter 2 of the Basin Plan. The environmental document should identify and list the beneficial uses of the water resources within the Project area, both surface waters and groundwater, and include an analysis of the potential impacts to water quality and hydrology with respect to those beneficial uses.

4. Water quality objectives and standards, both numerical and narrative, for all waters of the State within the Lahontan Region, including surface waters and groundwater, are outlined in Chapter 3 of the Basin Plan. Water quality objectives and standards are intended to protect the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. It is these objectives and standards that should be used when evaluating thresholds of significance for Project impacts.

5. To ensure that no net loss of function and value will occur as a result of Project implementation, we request that site facilities, equipment staging areas, and excavated soil stockpiles be microsited outside stream channels and floodplain areas. Buffer areas should be identified and exclusion fencing used to protect the water resource and prevent unauthorized vehicles or equipment from entering or otherwise disturbing the surface waters. Equipment should use existing roadways to the extent feasible.

6. Vegetation clearing should be kept to a minimum. Where feasible, existing vegetation should be mowed so that after construction the vegetation could reestablish and help mitigate for potential storm water impacts.

7. We request that the upper six inches of topsoil be retained and used as a final cover over temporary impact areas. This topsoil contains the native seed bank and soil microbes necessary to help re-establish vegetation post-construction.

PERMITTING REQUIREMENTS

A number of activities associated with the proposed Project have the potential to impact waters of the State and, therefore, may require permits issued by either the State Water Resources Control Board (State Water Board) or Lahontan Water Board. The required permits may include the following.

8. Streambed alteration and/or discharge of fill material to a surface water may require a CWA, section 401 water quality certification for impacts to federal waters (waters of the U.S.), or dredge and fill waste discharge requirements for
Appendix K • Responses to Comments

impacts to non-federal waters, both issued by the Lahontan Water Board or State Water Board. Early consultation with Water Board staff regarding this permit is highly encouraged.

9. Land disturbance of more than 1 acre may require a CWA, section 402(p) storm water permit, including a National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit, Water Quality Order (WQO) 2009-0009-DWQ, obtained from the State Water Board, or individual storm water permit obtained from the Lahontan Water Board.

10. Water diversion and/or dewatering activities may be subject to discharge and monitoring requirements under either NPDES General Permit, Limited Threat Discharges to Surface Waters, Board Order R6T-2014-0049, or General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality, WQO-2003-0003, both issued by the Lahontan Water Board.

Please be advised of the permits that may be required for the proposed Project, as outlined above. The specific Project activities that may trigger these permitting actions should be identified in the appropriate sections of the IS/MND. Should Project implementation result in activities that trigger these permitting actions, the Project proponent must consult with Water Board staff. Information regarding these permits, including application forms, can be downloaded from our web site at http://www.waterboards.ca.gov/alahontan/.

Thank you for the opportunity to comment on the IS/MND. If you have any questions regarding this letter, please contact me at (760) 241-7305 (Brianna.St.Pierre@waterboards.ca.gov) or Patrice Copeland, Senior Engineering Geologist, at (760) 241-7404 (Patrice.Copeland@waterboards.ca.gov).

Brianna St. Pierre, PG
Engineering Geologist

cc: USEPA Region 9, Wetlands Regulatory Office
(R9-WTR8-Mailbox@epamail.epa.gov)
Daniel Swenson, US Army Corps of Engineers
(Daniel.P.Swenson@usace.army.mil)
California Department of Fish and Wildlife, Region 6
(AskRegion6@wildlife.ca.gov)
Quint Chemnitz, Caltrans District 7
(Quint.Chemnitz@dot.ca.gov)
Agnieszka Napiatek, Paomas
(Agnieszka.Napiatek@Psomases.com)
Response to Comment Letter 6 from Lahontan Region- Regional Water Quality Control Board
Dated January 30, 2017

Response to Comment 6-1
This comment from the Lahontan Regional Water Quality Control Board (LRWQCB) is acknowledged. This comment provides an overview of the Project and the role of the Water Board in providing comments.

Response to Comment 6-2
Drainages will be avoided to the maximum extent possible to minimize impacts. However, some impacts to drainages would occur as a result of the Project. Impacts to drainages are minimal and are discussed in Section 2.3.2 (see Table 29 and Table 30).

As discussed in the Section 2.2.1, Water Quality and Storm Water Runoff, the Project would comply with the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit (WQO 2013-0001-DWQ). As discussed on page 138 of the Initial Study (IS)/Environmental Assessment (EA), Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs) and other measures that the State Water Resources Control Board (SWRCB) determines to be necessary to meet the water quality standards. In addition, with implementation of the two standard conditions identified in the IS/EA (WQ-1 regarding BMPs and applicable permits and WQ-2 regarding implementation of Storm Water Pollution Prevention Plan [SWPPP]), it was concluded that the Project will comply with State and federal standards.

Response to Comment 6-3
Erosion-control BMPs will be implemented as discussed in Section 2.2.1, Water Quality and Storm Water Runoff. The Project would be subject to the Construction General Permit (Order No. 2009-009-DWQ), which regulates storm water discharges from construction sites that result in a disturbed soil area of one acre or greater. Additionally, the Project would be subject to the City of Palmdale’s Landscape and Erosion Control Standards and City of Palmdale Zoning Ordinance. The Zoning Ordinance outlines general standards of development, including erosion-control and water-quality protection requirements. Adhering to these standards and requirements would ensure that soil exposed or disturbed by grading activities is properly stabilized and contained on the Project during construction and after completion, thus minimizing the Project’s impacts from soil erosion or loss of topsoil. Measure WQ-2 (Section 2.2.1) specifies implementation of the SWPPP and erosion-control measures.
Response to Comment 6-4

The Affected Environment portion of Section 2.2.1, Water Quality and Storm Water Runoff, provides a discussion of the potential water bodies affected and the beneficial uses of those water bodies. Specifically, the IS/EA states that the drainages in the Project area do not directly connect to the Little Rock Creek or Lake Rosamond; however, due to the regional northeast-trending drainage patterns, these waterbodies can be potentially considered receiving waterbodies for the study area. The Basin Plan identified water quality beneficial uses for Little Rock Creek as Cold Freshwater Habitat, Commercial, Groundwater Recharge, Municipal and Domestic Supply, Non Contact and Contact Recreation, and Wildlife Habitat. Water quality beneficial uses of Lake Rosamond include use of water for natural or artificial Groundwater Recharge, Non Contact Water Recreation, Warm Freshwater Habitat, Saline Water Habitat, and Wildlife Habitat. The Environmental Consequences discussion indicates that there would be no water quality impacts to beneficial uses because construction and operational BMPs will be implemented during Project construction and operation. Construction BMPs were identified as including, but not being limited to, sand and gravel bag barriers, silt fences, inlet protection, and infiltration facilities. BMPs will be further developed during the design phase of the Project and would ensure the Project complies with the requirements of the Construction General Permit (Order No. 2009-009-DWQ) and the Los Angeles County National Pollutant Discharge Elimination System (NPDES) MS4 Permit (WQO 2013-0001-DWQ) requirements.

Response to Comment 6-5

The Basin Plan identifies toxic pollutants that are found in the Antelope Valley Region. These pollutants are mostly associated with the mobilization of urban contaminants during storm events and can transport naturally occurring contaminants such as arsenic and other heavy metals. Contaminants such as pesticides, trash, oil, gasoline, radiator fluid, and animal wastes accumulate during dry months and are then mobilized at concentrated levels during storm events. As noted in Section 2.2.1, Water Quality and Storm Water Runoff, none of the surface waters in the Antelope Valley are on the 2012 303(d) list; therefore, no Total Maximum Daily Loads (TMDLs) have been established. Though specific numerical TMDLs have not been identified for the receiving waters, the Project is required to comply with the requirements of the Construction General and the MS4 Permits. As part of permit compliance requirements, an SWPPP would be prepared, along with erosion-control specific elements. It should also be recognized that the Project proposes a bicycle lane and sidewalk and to enhance safety conditions along Avenue R. These are not capacity-enhancing improvements that would increase traffic with an associated incremental increase in petrochemicals or any of the contaminants of concern identified in the Basin Plan. The water quality and storm water evaluation is consistent with Caltrans requirements and is appropriate for the type of Project being proposed.
Response to Comment 6-6

The groundwater and surface waters are described in the Affected Environment of Section 2.2.1, Water Quality and Storm Water Runoff. The drainages in the Project area are also described in Section 2.3.2, Wetlands and Other Waters. The IS/EA discusses that the City of Palmdale and its surface waters are under the Jurisdiction of Lahontan RWQCB (Region 6). Furthermore, the IS/EA provides information about the drainage features within the Project limits, and impacts under the jurisdiction of Lahontan RWQCB and California Department of Fish and Wildlife (CDFW). In addition, as described in Section 2.2.1 (page 146), in a letter dated January 18, 2005, the Lahontan RWQCB indicated that they do not intend to regulate the City of Palmdale, the City of Lancaster, or unincorporated portions of Los Angeles County within the Lahontan Region under the MS4 permit and the General Permit. This was based on the U.S. Army Corps of Engineers (USACE) findings that the Armargosa Creek Watershed and its contributing drainages are not subject to USACE jurisdiction. The USACE approved a jurisdictional determination in which it considers drainages in the Antelope Valley Area to be non-jurisdictional unless they drain into Lake Palmdale. Since none of the drainages in the Project area drain to Lake Palmdale none are subject to federal jurisdiction. However, the IS/EA identified that the Project would comply with all applicable regulations and laws; will prepare a Water Quality Management Plan (WQMP); will comply with the NPDES Permit. The IS/EA also calculated the potential impacts to drainages on site under Water Quality Control Board and California Department of Fish and Wildlife jurisdiction. With regards to the water quality standards and beneficial uses identified in the Basin Plan, these are discussed in Section 2.2.1 of the IS/EA and repeated in response to Comment 6-4, provided above.

Response to Comment 6-7

The Project would increase the amount of impervious surface for an additional 2.3 acres, as discussed in Section 2.2.1, Water Quality and Storm Water Runoff. The Project would also result in a very slight increase in the quantity of runoff generated in a storm event due to the increase in impervious surface area associated with the added pavement along the expanded street corridor.

The Beneficial Uses subsection of Section 2.2.1, explains that there would be no water quality impacts affecting beneficial uses because construction and operational BMPs will be implemented during Project construction and operation. The final scope of the BMPs will be developed in conjunction and compliance with the NPDES Permit. The Project would impact “waters of the State” (the total area of potential RWQCB jurisdiction is approximately 0.14 acre). However, no grading or fill activity of any type will be permitted unless authorized through permitting with the CDFW and/or the RWQCB. As described, in Mitigation Measure BIO-4, the City of Palmdale will obtain all necessary permits for impacts to RWQCB and/or CDFW jurisdictional areas. Mitigation Measure BIO-4 provides mitigation ratio of no less than 1:1, and the City will consult with the RWQCB on the best ratio applicable for this
Appendix K • Responses to Comments

The Project will comply with all applicable federal and State requirements with respect to protecting surface and groundwater waters. The Project will comply with MS4 Permit requirements and thus will ensure that water quality standards will be maintained through implementation of permanent and temporary (construction) BMPs. Post-construction storm water management BMPs will be implemented on the Project site. The NPDES submittal package will provide an outline for the post-construction BMPs.

Response to Comment 6-9

Post-construction storm water management design and treatment-control BMPs will be implemented on the Project site to treat pollutants and to protect the beneficial water uses. A Standard Urban Stormwater Mitigation Plan (SUSMP) or Water Quality Management Plan (WQMP) and an NPDES submittal package will provide an outline for the post-construction BMPs and will be developed in coordination with the Resources Agencies and with all applicable laws and regulations. Calculations to estimate drainage areas and to determine if sufficient area for treatment controls is available to treat the estimated water quality volume and flow will be completed as part of the Project, Specifications, and Estimates phase. It is anticipated that infiltration in the form of subsurface retention and percolation will be employed as one of the significant Low Impact Development (LID) measures within the project limits. As discussed in Section 2.2.1, Water Quality and Storm Water Runoff, due to the small areas of improvement along the roadway alignment, the Project would not result in alteration of the existing drainage pattern.

Response to Comment 6-10

Section 2.2.1, Water Quality and Storm Water Runoff, provides a discussion of the potential water bodies affected and the beneficial uses. Additionally, please see response to Comment 6-4, provided above. As noted above, an SWPPP would be required to address the applicable standards associated with construction and a WQMP will be prepared that addresses post-construction water quality issues. With implementation of the BMPs and applicable control measures, impacts to the beneficial uses would be less than significant.

Response to Comment 6-11

The Beneficial Uses subsection of Section 2.2.1 explains that there would be no water quality impacts affecting beneficial uses because construction and operational BMPs will be implemented during Project construction and operation. The IS/EA identified that the Project would comply with all applicable regulations and laws and will prepare WQMP and NPDES permit. As part of permit compliance requirements, an SWPPP would be prepared, along with erosion control-specific elements. The numerical and narrative water quality standards
Appendix K • Responses to Comments

applicable to the Project will be addressed as part of that process. It should be recognized that the Project proposes a bicycle lane and sidewalk and to enhance safety conditions along Avenue R. These are not capacity-enhancing improvements that would increase traffic with an associated incremental increase in petrochemicals or any of the contaminants of concern identified in the Basin Plan.

Response to Comment 6-12

Section 2.2.4, Wetlands and Other Waters, Measure BIO-1, BIO-2, BIO-4, and BIO-22 describe the measures that the City would take for impacts to the areas subject to RWQCB and CDFW jurisdiction, including drainages and associated riparian areas. Should any impacts to jurisdictional areas occur, the City will prepare a Habitat Mitigation and Monitoring Program (HMMP) for RWQCB and CDFW approval. This HMMP would spell out details of avoidance, minimization, protection measures, and mitigation ratios if impacts cannot be avoided. Among many measures, the HMMP specifies protection of existing native species and habitats; installation of protective fencing and/or signage (so called Ecological Sensitive Area [ESA] or buffer areas); application of salvaged native plant materials; and mitigation ratios for replacement habitats of the same function and value. In addition, site selection for habitat restoration and/or enhancement shall be determined in coordination with the City of Palmdale, the RWQCB, and the CDFW. Measure BIO-22 describes the responsibilities of the biological monitor during vegetation removal activities, including establishing an ESA and ensuring that all construction BMPs are functioning correctly. With implementation of BIO-4 and BIO-22, no net loss function and value would occur as part of Project implementation.

Response to Comment 6-13

As described in Section 2.2.4, Wetlands and Other Waters, Measures BIO-1 and BIO-2 describe installation of ESAs around sensitive habitats and limiting construction areas to the developed and designated non-sensitive habitats. In addition, Measure BIO-22 describes the responsibilities of the biological monitor during vegetation removal activities, including installing of ESAs and ensuring that all construction BMPs are functioning correctly. As such, vegetation clearing will be kept to minimum.

Response to Comment 6-14

As described in Measure BIO-4, Site Preparation and Plant Materials Installation, of Section 2.2.4, Wetlands and Other Waters, site preparation would include protection of existing native species and habitats. Two years prior to mitigation implementation, the City would initiate the collection of native seed materials from local origin. The HMMP will be developed in coordination with the RQWCB and CDFW and, as suggested, will include retention of the upper six inches of topsoil.
Response to Comment 6-15

As described in Section 2.2.1 (page 146), in the letter dated January 18, 2005, the Lahontan RWQCB (State Water Resources Control Board Order No. 2003-0005-DWQ) stated that it does not intend to regulate the City of Palmdale under the General Permit. This was based on the USACE findings that the Armargosa Creek Watershed and its contributing drainages are not subject to USACE jurisdiction. The USACE approved jurisdictional determination states that drainages in the Antelope Valley Area are considered non-jurisdictional unless they drain into Lake Palmdale. Since none of the drainages in the Project area drain to Palmdale Lake, none are subject to federal jurisdiction. However, the IS/EA identified that the Project would comply with all applicable regulations and laws, and it calculated the potential impacts to drainages on site and impacts to “waters of the State” (Refer to Tables 29 and 30). The total area of potential RWQCB jurisdiction is approximately 0.14 acre. Temporary impacts of the Project would consist of 0.004 acre and permanent impacts of the Project would consist of 0.002 acre. Because the Project would impact waters under the jurisdiction of the RWQCB, a Section 401 Water Quality Certification permit will be required. Refer to mitigation measure BIO-4. The City will coordinate with the Lahontan RWQCB to determine whether the Project would be exempt from the permits pursuant to the letter or whether permits must be obtained.

Response to Comment 6-16

As described in Section 2.2.1, Water Quality and Storm Water Runoff, the Project will be required to obtain an NPDES Construction General permit (WQO 2009-0009-DWQ) from the SWRCB because construction of the Project would result in 4.33 acres of soil disturbance. It will also be required to file a Notice of Intent with the SWRCB prior to construction. The Project will be required to prepare a WQMP. This document will be prepared during the design phase and will identify post-construction BMPs to be implemented.

Response to Comment 6-17

As discussed in Section 2.2.1, Water Quality and Storm Water Runoff, no dewatering would be required. Extension of the drainage structure will be accomplished by joining the existing headwall with in-kind, beveled, reinforced concrete openings at both inlet and outlet points. Construction-related BMPs will be implemented to ensure that all stream flows would be diverted away from construction activities and would not create additional runoff. Should it be determined that dewatering is required, the dewatered effluent would be trucked off site and disposed of according to existing laws and regulations. As discussed in Measure WQ-1, the City of Palmdale will consult with the RWQCB and will comply with the provisions of the NPDES permit, if it is determined that the Lahontan RWQCB’s City of Palmdale exemption letter (dated January 18, 2005) is no longer valid.
Response to Comment 6-18

As discussed in responses to Comments 6-1 through 6-18, all applicable permits were identified in Section 2.2.1, Water Quality and Storm Water Runoff, and Section 2.2.4 Wetlands and Other Waters. The City of Palmdale will consult with the RWQCB regarding this Project and will coordinate regarding application of a letter dated January 18, 2005, from the Lahontan RWQCB regarding exemption of the City of Palmdale from the MS4 permit and the General Permit.
Comment Letter 7

From: Chemnitz, Quint M@DOT <quint.chemnitz@dot.ca.gov>
Sent: Tuesday, February 14, 2017 10:20 AM
To: Agnieszka Napiatek
Subject: PW: Avenue R Safety Improvement Project, Palmdale, CA (07-LA-Palmdale; ATPL-578(038))

Hi Aga,

I received this yesterday. Just for reference.

From: Lee Claus [mailto:L.Clauss@sanmanuel-rxn.gov]
Sent: Monday, February 13, 2017 5:03 PM
To: Chemnitz, Quint M@DOT
Subject: Avenue R Safety Improvement Project, Palmdale, CA (07-LA-Palmdale; ATPL-578(038))

From: Lee Claus
Sent: Monday, February 13, 2017 4:26 PM
To: 'quint.chemnitz@dot.ca.gov'
Subject: Avenue R Safety Improvement Project, Palmdale, CA (07-LA-Palmdale; ATPL-578(038))

Dear Mr. Chemnitz,

Thank you for contacting the San Manuel Band of Mission Indians (SMBMI) regarding the above referenced project. SMBMI appreciates the opportunity to review the project documentation, which was received by our Cultural Resources Management Department on December 21, 2016. The proposed project area exists within Serrano ancestral territory and, therefore, is of interest to the Tribe. However, after reviewing documentation found on Culver’s project website, due to the nature and location of the proposed project, SMBMI does not have any concerns with the project’s implementation, as planned, at this time. However, SMBMI requests that the following language be made a part of the project permitting and/or plans:

1. If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5 and that code enforced for the duration of the project.

2. In the event that Native American cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the other portions of the project outside of the buffered area may continue during this assessment period. Additionally, San Manuel Band of Mission Indians will be
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3. If significant Native American historical resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, an SOI-qualified archaeologist shall be retained to develop an cultural resources Treatment Plan, as well as a Discovery and Monitoring Plan, the drafts of which shall be provided to San Manuel Band of Mission Indians for review and comment.
   a. All in-field investigations, assessments, and/or data recovery enacted pursuant to the finalized Treatment Plan shall be monitored by a San Manuel Band of Mission Indians Tribal Participant(s).
   b. The Lead Agency and/or applicant shall, in good faith, consult with San Manuel Band of Mission Indians on the disposition and treatment of any artifacts or other cultural materials encountered during the project.

Note: San Manuel Band of Mission Indians realizes that there may be additional tribes claiming cultural affiliation to the area; however, SMBMI can only speak for itself. The Tribe has no objection if the archaeologist wishes to consult with other tribes in addition to SMBMI and if Caltrans or the City of Palmdale wishes to revise the condition to recognize additional tribes.

Respectfully,

Lee Claus
San Manuel Band of Mission Indians
Cultural Resources Management Department
Cultural Resources Management Director
O: (909) 834-8933 x3248
M: (909) 333-5651
lclaus@sanmanuel-nsn.gov
26569 Community Center Drive
Highland, CA 92346

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Response to Comment Letter 7 from San Manuel Band of Mission Indians  
Dated February 13, 2017

Response to Comment 7-1
The Cultural Resources Section 2.1.7 of the IS/EA discloses that Mr. McCarthy from San Manuel Band of Mission Indians requested a copy of the prehistoric cultural resources report for review and consultation. The measure requested by San Manuel Band of Mission Indians has already been included in the IS/EA as measure CUL-1.

Response to Comment 7-2
Section 2.1.7 provides a minimization measure CUL-2 that requires that the San Manuel Band of Mission Indians be informed about findings and provided with the copy of the findings report for review and consultation if previously unidentified tribal cultural resources are unearthed during construction.

Response to Comment 7-3
Daniel McCarthy, Director – Cultural Resources Management Department, of San Manuel Band of Mission Indians stated in the email correspondence that, while the Project is located within the Tribe’s ancestral territory, he is not aware of specific information about significant cultural resources at the Project location. However, it is Caltrans policy and the requirements of Section 106 of the National Historic Preservation Act (NHPA) that if significant cultural resources finds cannot be preserved on site, and would suffer Adverse Effects, a Memorandum of Agreement (MOA) will be entered into with the State Historic Preservation Officer (SHPO). The MOA specifies how the adverse affect will be taken into account. If data recovery will be the mitigation, a Data Recovery Plan will be prepared and Phase 3 proposal will be prepared for Caltrans review and approval. If significant tribal cultural resources are found during construction a Treatment Plan, and a Discovery and Monitoring Plan will be prepared.
Phone Comments Received by Caltrans

In addition to the official comments, two phone calls from individuals residing in the Project area were received by Caltrans. One individual noted that one of the intersections (Avenue R and 17th Street) is dangerous. This intersection is being modified and improved as part of the project. Another individual, who identified themselves as a property owner, inquired about the next steps for the Project. Caltrans requested that this individual drafts an email; however the email has not been received yet. Caltrans Relocations procedures and benefits are stated in Appendix C.
Appendix L  Minimization and/or Mitigation Summary
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## Minimization and/or Mitigation Summary

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<th>Responsible Party</th>
<th>Timing/Phase</th>
<th>Action Taken to Comply with Task</th>
<th>Remarks</th>
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During Project design, the City shall coordinate with the land owners on the processing of a variance to allow a reduced building setback at those locations where zoning setback requirements will not be met after a partial acquisition.

The City of Palmdale shall develop a Traffic Management Plan during the Plans, Specifications, and Estimates Phase to ensure safe and efficient traffic flow and access throughout the Project study area during all phases of construction. The Traffic Management Plan will include public notification of any modifications to bus stop locations or operational procedures during construction.

During Project design, the City of Palmdale shall coordinate with local schools regarding the timing and construction schedule of this Project.

Prior to construction, the City will obtain all required right-of-way. Owners of property to be acquired shall be compensated for the fair market value of the property as well as damages, if any, to the remaining portions of their properties in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act. Relocation assistance and counseling will be provided to displaced businesses in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act to ensure adequate relocation for displaced businesses. All eligible displacees will be eligible for moving expenses. All benefits and services will be provided equitably to all relocatees without regard to race, color, religion, age, national origin, or disability as specified under Title VI of the Civil Rights Act of 1964.

During right-of-way acquisitions, a Spanish-speaking right-of-way agent shall be used to effectively communicate with displacees.

During Project design, the City of Palmdale and the Caltrans Right-of-Way Utilities Coordinator shall coordinate with utility providers regarding relocation of utilities without interrupting service.
Appendix L • Minimization and/or Mitigation Summary

<table>
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<tr>
<th>Task and Brief Description</th>
<th>Responsible Party</th>
<th>Timing/Phase</th>
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<td>UES-2 Caltrans and the City would also require the contractor to follow a Traffic Management Plan (see UES-3 below) to avoid impacts related emergency service providers.</td>
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<td>UES-3 The City of Palmdale shall develop a Traffic Management Plan during the Plans, Specifications, and Estimates Phase to ensure safe and efficient traffic flow throughout the Project study area during all phases of construction. The Traffic Management Plan shall optimize roadway capacity, signal phasing, and timing during construction. The City of Palmdale shall ensure that emergency service providers are aware of each stage of construction and of any potential service delays. In addition, prior to each construction phase, the City of Palmdale shall coordinate with Los Angeles County Metropolitan Transportation Authority (METRO) to develop appropriate safety provisions during construction. The Traffic Management Plan will include public notification of any modifications to bus stop locations or operational procedures during construction.</td>
<td>City of Palmdale</td>
<td>Design</td>
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<tr>
<td>Traffic and Transportation</td>
<td>City of Palmdale</td>
<td>Prior to construction</td>
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<tr>
<td>TR-1 Prior to the construction phase, the City of Palmdale shall coordinate with the Antelope Valley Transit Authority, the Union Pacific Railroad, Metrolink, and the Southern California Regional Rail Authority (SCRRA) to develop appropriate safety provisions during construction. The Transportation Management Plan will include public notification of any modifications to bus stop locations or operational procedures during construction.</td>
<td>City of Palmdale</td>
<td>Prior to construction</td>
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<tr>
<td>Cultural Resources</td>
<td>Construction Contractor / Cultural Consultant</td>
<td>Construction</td>
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<tr>
<td>CUL-1 If previously unidentified cultural materials are unearthed during construction, it is Caltrans’ policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if the Project limits are extended beyond the current survey limits. If human remains are unearthed during construction, Section 7050.5 of the California Health and Safety Code states that no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition of the remains pursuant to Section 5097.98 of the California Public Resources Code.</td>
<td>Construction Contractor / Cultural Consultant</td>
<td>Construction</td>
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<tr>
<td>CUL-2 If, during ground disturbance activities, previously unidentified tribal cultural resources are unearthed during construction, the San Manuel Band of Mission Indians will be informed about those findings and provided with the copy of the findings report for review and consultation.</td>
<td>City of Palmdale Construction Contractor / Cultural Consultant</td>
<td>Construction</td>
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### Water Quality and Storm Water Runoff

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<th>Task and Brief Description</th>
<th>Responsible Party</th>
<th>Timing/Phase</th>
<th>NNSP Req</th>
<th>Action Taken to Comply with Task</th>
<th>Task Completed</th>
<th>Remarks</th>
<th>Environmental Compliance</th>
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<tbody>
<tr>
<td>WQ-1</td>
<td>The City of Palmdale shall prepare and implement construction site Best Management Practices (BMPs) in compliance with the provisions of the Construction General Permit; the Municipal Separate Storm Sewer System (MS4) Permit (if applicable); the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity; and any subsequent permit as they relate to construction activities for the Project. This will include submission of Permit Registration Documents (PRDs) on the SMARTS System in order to obtain permit coverage, preparation, and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and submission of a Notice of Construction Completion (NCC) to the California Department of Water Resources’ Storm Water Multiple Application and Report Tracking System (SMARTS) upon completion of construction and stabilization of the project site.</td>
<td>City of Palmdale</td>
<td>Prior to Construction</td>
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<tr>
<td>WQ-2</td>
<td>Prior to construction, an SWPPP, along with erosion control-specific elements, shall be prepared by the contractor and submitted to the City for approval. The erosion-control measures shall be designed to limit the effects of soil erosion and water degradation during construction. This plan shall be prepared and implemented in accordance with the requirements of the RWQCB’s NPDES permit requirements.</td>
<td>City of Palmdale / Project Engineer</td>
<td>Prior to Construction</td>
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### Geology/ Soils/Seismic/ Topography

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<tr>
<th>Task and Brief Description</th>
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<th>Environmental Compliance</th>
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</thead>
<tbody>
<tr>
<td>GEO-1</td>
<td>Prior to Final Design, a Geotechnical Report will be prepared and approved by Caltrans and City geologist.</td>
<td>City of Palmdale / Geotechnical Consultant</td>
<td>Prior to Final Design</td>
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<tr>
<td>GEO-2</td>
<td>During construction, a geotechnical consultant shall be retained to provide soil engineering services.</td>
<td>City of Palmdale / Geotechnical Consultant</td>
<td>Construction</td>
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### Paleontology

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<tr>
<th>Task and Brief Description</th>
<th>Responsible Party</th>
<th>Timing/Phase</th>
<th>NNSP Req</th>
<th>Action Taken to Comply with Task</th>
<th>Task Completed</th>
<th>Remarks</th>
<th>Environmental Compliance</th>
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</thead>
<tbody>
<tr>
<td>PAL-1</td>
<td>Prior to the start of construction, it is recommended that a paleontologist be retained to review construction plans to ascertain areas that, because of the grading depth, may have to be monitored for paleontological resources.</td>
<td>City of Palmdale</td>
<td>Prior to Construction</td>
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<td>PAL-2</td>
<td>Paleontological monitoring shall be conducted by a qualified individual. Based on field reviews and the paleontological literature available, it does not appear that full-time monitoring would be required at all of the proposed excavation sites in the Project study area. It is anticipated that only minor monitoring and</td>
<td>Paleontologist</td>
<td>Construction</td>
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<td>Task and Brief Description</td>
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<td>spot checks would be necessary where soil disturbance occurs below a depth of five feet in native sediments.</td>
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<td>PAL-3</td>
<td>Paleontologist / Construction Contractor</td>
<td>Final Design</td>
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<tr>
<td>Before completion of final engineering and in accordance with the guidelines in the Caltrans Standard Environmental Reference, a Paleontological Mitigation Plan shall be prepared by a qualified paleontologist for inclusion in the Plans, Specifications, and Estimate and be implemented during the Project’s excavation phase. The qualified principal paleontologist shall attend pregrading meetings and consult with grading and excavation contractors. The construction contractor’s employees shall attend paleontological resource awareness training session(s) if they will be involved in earth moving Project activities. The Paleontological Mitigation Plan shall generally discuss fossil discovery, recovery, and subsequent handling.</td>
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<td>Hazardous Waste or Materials</td>
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<td>HAZ-1</td>
<td>Hazardous Materials Consultant</td>
<td>Prior to Ground Disturbance</td>
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<td>Prior to ground disturbance activities, soil samples shall be conducted for the potential presence of persistent pesticides. The samples should be analyzed for organochlorine pesticides (OCPs) using US EPA Method 8081.</td>
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<td>HAZ-2</td>
<td>Hazardous Materials Consultant</td>
<td>Prior to Ground Disturbance</td>
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<td>Prior to ground disturbance activities, soil shall be assessed for the presence of aerially deposited lead (ADL) prior to disposal. A Lead Compliance Plan should be prepared prior to the start of construction activities.</td>
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<td>HAZ-3</td>
<td>Hazardous Materials Consultant</td>
<td>Prior to Demolition</td>
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<td>Prior to demolition of the buildings structures, a lead-based paint (LBP) survey will be required to be conducted.</td>
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<td>HAZ-4</td>
<td>Hazardous Materials Consultant</td>
<td>Prior to Demolition</td>
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<tr>
<td>Prior to demolition of the building structures, an asbestos-containing materials (ACMs) survey will be required.</td>
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<td>HAZ-5</td>
<td>Hazardous Materials Consultant / Construction Contractor</td>
<td>Prior to Construction</td>
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<td>If yellow traffic markings are removed separately from the adjacent pavement, the markings should be removed and sampled for lead chromate prior to construction, consistent with Caltrans’ SSP 14-11.12. If the paint is nonhazardous, then SSP 36-4 should be followed.</td>
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<td>HAZ-6</td>
<td>Construction Contractor</td>
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<td>If, during Project construction, treated wood waste is found on the site and is not reused in the Project area in a manner consistent with the intended use for the preservative, it must be disposed of as a hazardous waste at an appropriately permitted disposal facility.</td>
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<td>Task and Brief Description</td>
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<td>HAZ-7</td>
<td>Construction Contractor</td>
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<td>If, during Project construction, signs of discolored soils is found on site and in the Project area, a certified consultant should conduct a polychlorinated biphenyls (PCBs) survey. Discolored soils should be considered a potential PCB hazards unless tested and should be handled accordingly.</td>
<td>Construction Contractor</td>
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<td>Air Quality</td>
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<tr>
<td>AIR-1</td>
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<td>All construction activities will be conducted in compliance with the Antelope Valley Air Quality Management District’s Rule 403, Fugitive Dust.</td>
<td>Construction Contractor</td>
<td>Construction</td>
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<td>AIR-2</td>
<td>Construction Contractor</td>
<td>Prior to Construction</td>
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<td>The following administrative controls and hazard awareness actions will be included in the Contractor’s Specifications:</td>
<td>Construction Contractor</td>
<td>Prior to Construction</td>
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<td>• Prior to Project construction initiation, and for any personnel additions after Project construction initiation, the City’s contractor shall be informed of the following California Department of Public Health (CDPH) materials on Valley Fever, or any updated materials as applicable. The following materials will be distributed to worksite supervisors:</td>
<td>Construction Contractor</td>
<td>Prior to Construction</td>
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<td>• Prior to Project construction initiation, and for any personnel additions after Project construction initiation, the City’s contractor shall be informed of the following CDPH materials on Valley Fever, as well as any updated materials as applicable. The following materials will be distributed to construction workers:</td>
<td>Construction Contractor</td>
<td>Prior to Construction</td>
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<td>Task and Brief Description</td>
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<td><strong>Noise</strong></td>
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<td>NO-1</td>
<td>Construction Contractor</td>
<td>Final Design</td>
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<td>Prior to approval of grading plans and/or prior to issuance of demolition, grading, and building permits, the following noise-reduction measures shall be identified in the construction plans or specifications:</td>
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<td>• The construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. Stationary equipment shall be equipped with noise enclosures or shall be screened to minimize noise impact.</td>
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<td>• The construction contractors shall place all stationary construction equipment so that the equipment is as far as practicable from noise-sensitive receptors and oriented so emitted noise is directed away from noise-sensitive receptors.</td>
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<td>• The construction contractors shall locate equipment and material staging in areas that will create the greatest distance between staging area noise sources and noise sensitive receptors.</td>
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<td>• Construction activities shall be limited to between the hours of 6:30 AM and 8:00 PM, Monday through Saturday.</td>
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<tr>
<td>• Equipment maintenance and staging area activities shall be limited to between the hours of 6:30 AM and 8:00 PM.</td>
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<td>• No radios, boom boxes, or similar audio equipment shall be operated during construction.</td>
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<td>NO-2</td>
<td>City of Palmdale</td>
<td>Prior to Demolition</td>
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<td>At least 30 days, but no more than 45 days, prior to the start of demolition and construction activities, all property owners and occupants within 100 feet of the Project site shall be notified of the pending construction of the project. The notification shall include the construction start date, days and hours of work, and estimated completion date. The notification shall also state that the Project will include typical and sometimes loud noise, and it shall provide mobile phone and email contact information.</td>
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<td><strong>Biological Resources</strong></td>
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<td>BIO-1</td>
<td>City of Palmdale/ Biologist</td>
<td>Prior to Construction</td>
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<td>Prior to construction, highly visible barriers (e.g., orange construction fencing) shall be installed around the Black Willow Thicket habitat adjacent to the Project footprint to designate this Environmentally Sensitive Area (ESA) to be preserved. No grading or fill activity of any type shall be permitted in this ESA unless authorized through permitting with the California Department of Fish and Wildlife (CDFW) and/or the Regional Water Quality Control Board (RWQCB) (see Section 2.3.2). No construction activities, materials, or equipment shall be allowed in the ESA. All construction equipment shall be operated in such a manner as to prevent accidental damage to this ESA. No structure of any kind or incidental storage of equipment or supplies shall be allowed in the ESA. In areas where such structures have been permitted, they shall be removed prior to commencement of any construction activities.</td>
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<td>where vegetation is immediately adjacent to planned grading activities, silt fence barriers shall be installed at the ESA boundaries to prevent accidental deposition of fill material in the ESA.</td>
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<td>BIO-2</td>
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<td>All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities shall occur in Developed or designated non-sensitive habitat areas (e.g., Ruderal, Developed) and outside Black Willow Thicket areas and any associated drainages.</td>
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<td>BIO-3</td>
<td>City of Palmdale / Project Engineer</td>
<td>Design</td>
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<td>A construction Storm Water Pollution Prevention Plan (SWPPP) and Soil Erosion and Sedimentation Plan (SESP) will be developed to minimize erosion and to identify specific pollution prevention measures that will eliminate or control potential point and non-point pollution sources on site during the Project's construction phase and during Project operation. The SWPPP will identify specific Best Management Practices (BMPs) to be implemented during Project construction to protect water quality. In addition, the SWPPP will contain provisions for changes to the plan such that alternative mechanisms can be used, if necessary, during Project design and/or construction to achieve the stated goals and performance standards.</td>
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<td>BIO-4</td>
<td>City of Palmdale</td>
<td>Prior to Ground Disturbance</td>
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<td>Prior to initiation of Project activities, City of Palmdale shall obtain all necessary permits for impacts to RWQCB and/or CDFW jurisdictional areas. Mitigation for the loss of jurisdictional resources shall be negotiated with the resource agencies during the regulatory permitting process. Potential mitigation options shall include one or more of the following: (1) payment to a mitigation bank or regional riparian enhancement program (e.g., invasive plant or wildlife species removal) and/or (2) restoration of riparian habitat either on site or off site at a ratio of no less than 1:1, determined through consultation with the above-listed resource agencies. If in-lieu mitigation fees are required, prior to the initiation of any construction-related activities, the City of Palmdale shall pay the in-lieu mitigation fee to a mitigation bank/enhancement program for the in-kind (equivalent vegetation type and acreage) replacement of impacted jurisdictional resources. If a Restoration Program is required, prior to the initiation of any construction-related activities, the City of Palmdale shall prepare and submit a Riparian Habitat Mitigation and Monitoring Program (HMMP) for RWQCB and CDFW approval. If a Riparian HMMP is required, it shall state that riparian vegetation shall be removed during the non-nesting bird season (i.e., September 1 to February 28) and shall contain the items discussed below.</td>
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<td>k. Responsibilities and Qualifications. The responsibilities and qualifications of the City of Palmdale, ecological specialists, and restoration (landscape) contracting personnel who will implement the plan shall be specified. At a minimum, the HMMP shall specify that the ecological specialists and contractors have performed successful installation and long-term monitoring and maintenance of southern California native habitat mitigation/restoration programs, which were</td>
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### Minimization and Mitigation Summary

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<th>Task and Brief Description</th>
<th>Responsible Party</th>
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<td>implemented under natural resource agency permit conditions. A successful program shall be defined as one that has been signed off by the resource agencies.</td>
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<td>l. <strong>Performance Criteria.</strong> Mitigation performance criteria to be specified in the HMMP shall include native vegetation percent coverage and diversity (minimum), non-native vegetation percent coverage (maximum), and the cessation of irrigation a minimum of two years prior to eligibility for sign-off.</td>
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<td>m. <strong>Site Selection.</strong> Site selection for habitat restoration and/or enhancement shall be determined in coordination with the City of Palmdale, the RWQCB, and the CDFW.</td>
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<td>n. <strong>Native Plant and Seed Materials Procurement.</strong> One to two years prior to mitigation implementation (or as far in advance as practicable prior to planting/seeding implementation), the City of Palmdale or its consultants/contractors shall initiate collection of the native seed materials specified in the HMMP. It is highly recommended that all seed mixes be of local origin (i.e., collected within the same subwatershed as the selected mitigation site).</td>
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<td>o. <strong>Wildlife Surveys and Protection.</strong> The HMMP shall specify any wildlife surveys (e.g., nesting bird surveys, focused surveys for special status species) and biological monitoring that are required to avoid adverse impacts to wildlife species during the performance of mitigation site preparation, installation, or maintenance tasks. The HMMP shall also describe potential restrictions on these tasks due to sensitive wildlife conditions on the mitigation site (e.g., suspension of these tasks during the nesting bird season).</td>
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<td>p. <strong>Site Preparation and Plant Materials Installation.</strong> Mitigation site preparation shall include (i) protection of existing native species and habitats (including compliance with seasonal restrictions, if any); (ii) installation of protective fencing and/or signage (as needed); (iii) initial trash and weed removal (during the non-nesting bird season); (iv) soil treatments, as needed (i.e., imprinting, decompacting); (v) installation of erosion-control measures (i.e., fully natural/bio-degradable [not ‘photo-degradable’] fiber roll); (vi) application of salvaged native plant materials (i.e., duff) as available; (vii) temporary irrigation installation; (viii) a minimum one-year preliminary ‘grow-and-kill’ weed abatement program (prior to the installation of native plant and seed materials), including specification of approved herbicides; (ix) planting of container species; and (x) seed mix application.</td>
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<td>q. <strong>Schedule.</strong> An implementation schedule shall be developed that includes planting and seeding to occur in late fall and early winter (i.e., between November 1 and December 31) and the frequency of long-term maintenance and monitoring activities (including the dates of annual quantitative surveys, as described below).</td>
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<td>r. <strong>Maintenance Program.</strong> The Maintenance Program shall include (i) protection of existing native species and habitats (including compliance with seasonal restrictions, if any); (ii) maintenance of protective fencing</td>
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### Task and Brief Description

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<td>and/or signage; (iii) trash and weed removal, including specification of approved herbicides; (iv) maintenance of erosion-control measures; (v) inspection/repairs of irrigation components; (vi) replacement of dead container plants (as needed); (vii) application of remedial seed mixes (as needed); (viii) herbivory control; and (ix) removal of all non-vegetative materials (i.e., fencing, signage, irrigation components) upon Project completion. The mitigation site shall be maintained for a period of five years to ensure the successful establishment of riparian habitat in the restored and created areas; however, the City of Palmdale may request that the RWQCB and the CDFW release it from maintenance requirements prior to five years if the mitigation program has achieved all performance criteria.</td>
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<td>s. Monitoring Program. The Monitoring Program shall include (i) qualitative monitoring (i.e., general habitat conditions, photo-documentation from established photo stations); (ii) quantitative monitoring (e.g., randomly placed point-intercept transects); (iii) annual monitoring reports, which shall be submitted to the resource agencies for five years or until project completion; and (iv) wildlife surveys and monitoring, as described above. The annual monitoring reports shall include a detailed discussion of mitigation site performance (e.g., measured vegetation coverage and diversity) and compliance with required performance criteria; a discussion of wildlife species' use of the restored and/or enhanced habitat area(s); and a list of proposed remedial measures to address non-compliance with any performance criterion. The site shall be monitored for five years or until the RWQCB and CDFW have released the City of Palmdale from maintenance requirements.</td>
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<td>t. Long-Term Preservation. Long-term site preservation shall be outlined in the HMMP to ensure the mitigation site is not impacted by future projects.</td>
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### BIO-5

A pre-construction focused survey shall be conducted for Peirson's morning-glory, white pygmy-poppy, and Mojave spineflower during their respective blooming periods in a year of adequate rainfall (as determined by monitoring a reference population of this species to confirm germination). If this species occurs in the impact area, Project design shall avoid and minimize impacts to the extent practicable. If impacts cannot be avoided, in the spring before construction begins, seed shall be collected by a qualified biologist or qualified seed collector from plants that would be impacted; seed shall be used in revegetation efforts or at the mitigation site.

| BIO-5 | | | | | | | |
| A pre-construction focused survey shall be conducted for Peirson’s morning-glory, white pygmy-poppy, and Mojave spineflower during their respective blooming periods in a year of adequate rainfall (as determined by monitoring a reference population of this species to confirm germination). If this species occurs in the impact area, Project design shall avoid and minimize impacts to the extent practicable. If impacts cannot be avoided, in the spring before construction begins, seed shall be collected by a qualified biologist or qualified seed collector from plants that would be impacted; seed shall be used in revegetation efforts or at the mitigation site. | City of Palmdale/ Biologist | Prior to Construction | | | | | |

### BIO-6

A pre-construction survey for the silvery legless lizard shall be conducted by a qualified biologist in the proposed impact area. If this species is observed and is in imminent danger from construction activities, a qualified biologist (i.e., one holding the necessary permits and/or authorizations to handle this species) shall capture and relocate the silvery legless lizard to appropriate habitat outside the impact area. Prior to translocating any silvery legless lizards, the CDFW shall review and approve the translocation site and the methods by which the animals

<p>| BIO-6 | | | | | | | |
| A pre-construction survey for the silvery legless lizard shall be conducted by a qualified biologist in the proposed impact area. If this species is observed and is in imminent danger from construction activities, a qualified biologist (i.e., one holding the necessary permits and/or authorizations to handle this species) shall capture and relocate the silvery legless lizard to appropriate habitat outside the impact area. Prior to translocating any silvery legless lizards, the CDFW shall review and approve the translocation site and the methods by which the animals | City of Palmdale/ Biologist | Prior to Construction | | | | |</p>
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<td>Shall be moved. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.</td>
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<td>A qualified biologist shall be present during vegetation removal of Rubber Rabbitbrush Scrub and Disturbed Rubber Rabbitbrush Scrub. If this species is observed and is in imminent danger from construction activities, a qualified Biologist (i.e., one holding the necessary permits and/or authorizations to handle this species) shall capture and relocate the coast horned lizard to appropriate habitat outside the impact area. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.</td>
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<td>Prior to the start of the construction day and at the end of the construction day, a qualified Biologist shall inspect all open trenches, holes, or other excavations for the presence of small mammals and other wildlife. A qualified Biologist shall relocate any animals found trapped in excavated areas. Excavations that remain open overnight shall be covered to prevent wildlife from becoming trapped.</td>
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<td>Vegetation clearing shall be conducted during the bird non-nesting season (i.e., September 1 to January 31). If vegetation clearing would be conducted during the bird nesting season (i.e., February 1 to August 31), a qualified biologist shall conduct a survey no more than three days prior to construction to determine whether any birds are nesting in or adjacent to the impact area. If nesting is not occurring, construction work can proceed. If an active nest is present, construction work will be restricted within a buffer area of 250 feet (or as otherwise determined by a qualified biologist based on the location of the nest) until fledglings have left the nest. Any encroachment into the buffer area shall only be allowed if a qualified biologist determines that the proposed activity will not disturb the nest occupants. Any active nests shall be mapped on an aerial photograph, and the location information shall be given to City of Palmdale. The location of active nests shall be marked on applicable construction plans as ESAs. A nesting bird survey report (including mapping of any active nests) shall be prepared by the biologist and shall be submitted to the City of Palmdale.</td>
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<td>At least 14 days prior to construction activities, a qualified Biologist shall conduct a pre-construction survey to determine if there are any active burrowing owl burrows and if any avoidance and minimization measures will be required. A final pre-construction survey shall be conducted within 24 hours prior to ground disturbance. If no active burrows are observed, construction work can proceed.</td>
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### BIO-11

If an active burrow is observed outside the burrowing owl nesting season (i.e., September 1 to February 28) and the burrow is within the impact area, standard burrowing owl burrow closing procedures will be used to exclude burrowing owls (i.e., using passive relocation with one-way doors). Per CDFW’s 1995 recommendations, two artificial burrows will be provided for each burrow that is destroyed. The location of the artificial burrows will be determined in consultation with the CDFW.

If an active burrow is observed during the burrowing owl’s non-nesting season (i.e., September 1 to February 28) and the burrow is not within the impact area, construction work will be restricted to within 150 feet of the burrow (or as otherwise determined by the project biologist in consultation with the CDFW).

If an active burrow is present and nesting is believed to be occurring during the nesting season (i.e., March 1 to August 31), construction work and access will be restricted to within 250 feet of the burrow (or as otherwise determined by the project biologist in consultation with the CDFW) until fledglings have left the burrow to ensure compliance with Section 3503.5 of the California Fish and Game Code.

Results of the surveys will be provided to the CDFW.

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### BIO-12

Tree removal shall occur during the bird non-nesting season (i.e., September 1 to January 31). If construction activity begins during the raptor nesting season (i.e., February 1 to June 30), a qualified biologist shall survey within and adjacent to the construction limits for the presence of occupied raptor nests prior to the start of construction. The survey shall be conducted within seven days prior to the start of construction.

Any active raptor nests shall be mapped on an aerial photograph by the Biologist, and the location information shall be given to the City of Palmdale. The location of active nests shall be marked on applicable construction plans as an ESA. If no active nests are found, no further surveys shall be required. A nesting raptor survey report (including mapping of any active nests) shall be prepared by the Biologist and shall be submitted to City of Palmdale. Any active nest(s) shall be protected as an ESA until nesting activity has ended to ensure compliance with the California Fish and Game Code (Sections 3503, 3503.5, and 3513) and the Migratory Bird Treaty Act (MBTA). To protect any active nest sites, the following restrictions on construction are required between February 1 and June 30 (or until nests are no longer active as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 500 feet in any direction from an active raptor nest (or as otherwise determined by a qualified Biologist) and (2) access and surveying shall not be allowed within 100 feet of nests (or as otherwise determined by a qualified biologist).

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<td><strong>BIO-13</strong> Construction activities within 300 to 500 feet of potential nesting areas shall be scheduled to begin between July 1 and January 31 to avoid the raptor nesting season. If vegetation removal activities would occur during the raptor nesting season (February 1 to June 30), a pre-construction survey for nesting raptors shall be conducted by a qualified biologist within seven days prior to clearing of any vegetation. If any active nests are detected, the biologist shall designate a buffer around the nest (ranging from 300 to 500 feet depending on the sensitivity of the species and the location of the nest) that must be protected until the chicks have fledged or until the biologist has determined that the nest has failed.</td>
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<td><strong>BIO-14</strong> Tree removal shall occur during the Swainson’s hawk’s non-nesting season (i.e., September 1 to January 31). If construction would be initiated during the Swainson’s hawk nesting season (i.e., February 1 to August 31), a pre-construction survey for Swainson’s hawk nests shall be conducted by a qualified biologist within a 0.5-mile radius of the Project site for the presence of an active nest. The pre-construction survey shall be conducted in accordance with the Swainson’s Hawk Technical Advisory Committee’s (SHTAC’s) Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley (2000). If no active nests are found, no further surveys shall be required. A nesting raptor survey report (including mapping of any active nests) shall be prepared by the biologist and shall be submitted to the City of Palmdale and the CDFW.</td>
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<td><strong>BIO-15</strong> If a Swainson’s hawk is nesting within 0.5 mile of the proposed impact area, the CDFW shall be consulted to evaluate the potential for disturbance of the nesting birds during construction and to approve measures that would avoid impacts on the active nest; authorization to proceed shall be obtained before work starts. The active nest site shall be protected until nesting activity has ended to ensure compliance with the California Endangered Species Act and Sections 3503.5 and 3513 of the California Fish and Game Code. Any Swainson’s hawk nests shall be mapped on an aerial photograph by the biologist, and the location information shall be given to the City of Palmdale. The location of active nests shall be marked on applicable construction plans as an ESA.</td>
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<td><strong>BIO-16</strong> To protect an active nest site, the following restrictions on construction are required between February 1 and August 31 (or until nests are no longer active, as determined by a qualified biologist); (1) clearing limits shall be established a minimum of 500 feet in any direction from any occupied Swainson’s hawk nest and (2) access and surveying shall be restricted within 300 feet of any occupied Swainson’s hawk nest. Any encroachment into the 500-/300-foot buffer area around the known nest shall be allowed only if a qualified biologist determines that the proposed activity will not disturb the nest occupants.</td>
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<td>A qualified Biologist shall be present during vegetation removal of Rubber Rabbitbrush Scrub and Disturbed Rubber Rabbitbrush Scrub. If Mohave ground squirrel is observed and is in imminent danger from construction activities, a qualified biologist (i.e., one holding the necessary permits and/or authorizations to handle this species) shall capture and relocate the Mohave ground squirrels to appropriate habitat outside the impact area. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.</td>
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<td>All vegetation cleared from the impact area shall be removed immediately. No soils excavated from the Project site shall be kept on site unless secured. Stockpiled soils shall be secured with extra strength cover foil buried at least one foot underground to discourage wildlife from burrowing.</td>
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<td>A worker environmental awareness program (WEAP) training shall be provided to construction personnel that discusses the Mohave ground squirrel, its habitat, and Best Management Practices (BMPs) to protect it during construction.</td>
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<td>Prior to the start of the construction day and at the end of the construction day, a qualified biologist shall inspect all open trenches, holes, or other excavations for the presence of small mammals and other wildlife. A qualified biologist shall relocate any animals found trapped in excavated areas. Excavations that remain open overnight shall be covered to prevent wildlife from becoming trapped.</td>
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<td>During Project construction, all invasive plant species found on site shall be handled, transported, and disposed of off site by a qualified contractor to minimize the potential for spreading invasive species and/or their seeds off site. All plants and their seed pods shall be secured in such a manner that no contamination of native soils or natural areas would occur.</td>
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<td>A qualified biologist shall monitor vegetation removal and construction along the undeveloped parcel between 15th Street East and 17th Street East. The biological monitor shall be on site at all times during the approximate seven-day vegetation clearing and construction period for this segment. The biological monitor will ensure that construction will stay within marked boundaries; that no disturbance of the ESA occurs; and that BMPs are functioning properly. The biological monitor will prepare weekly monitoring memos with site photographs for the duration of the monitoring effort in this segment; the weekly monitoring memos shall be submitted to the City of Palmdale.</td>
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<td>Prior to construction, if new landscaping is proposed, landscape designs shall be submitted by a qualified biologist to the City of Palmdale for review and approval. The review shall determine that no invasive exotic plant species are to be used in any proposed landscaping. Suitable substitutes shall be recommended by the reviewing biologist. All mulch, topsoil, and seed mixes used during landscaping activities and all erosion-control BMPs that are implemented shall be free of invasive plant species propagules.</td>
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<td>The Project would incorporate the use of energy-efficient lighting. Existing traffic signals will be upgraded to use light-emitting diode (LED) bulbs, which consume ten percent of the electricity of traditional lights, thereby reducing indirect carbon dioxide (CO₂) emissions.</td>
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List of Technical Studies that are Bound Separately

Community Impact Memorandum
Final Relocation Impact Statement
Natural Environment Study
Historical Property Survey Report
Historic Resource Evaluation Report
Historic Architectural Survey Report
Environmental Site Assessment
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