

STATE ROUTE 14/STATE ROUTE 138 AND AVENUE K INTERCHANGE IMPROVEMENTS PROJECT

CITY OF LANCASTER, LOS ANGELES COUNTY, CALIFORNIA

District 7 – SR-14 – PM R66.2/R67.1

EA 07-30590

Initial Study with Proposed Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation



August 2018

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State Route 14/State Route 138 And Avenue K Interchange Improvements Project

**INITIAL STUDY WITH PROPOSED MITIGATED
NEGATIVE DECLARATION**

Submitted Pursuant to: (State) Division 13, California Public Resources Code

**THE STATE OF CALIFORNIA
Department of Transportation
CEQA Lead Agency**

**Responsible Agencies: City of Lancaster,
California Transportation Commission**

Aug 28, 2018
Date of Approval

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PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to improve local roadway operations on Avenue K from 20th Street West to 10th Street West (post mile 66.23 to post mile 67.23) including the SR-14/Avenue K interchange, in the City of Lancaster in Los Angeles County.

Determination

An Initial Study has been prepared by Caltrans, District 7. On the basis of this study it is determined that the proposed action will not have a significant effect on the environment for the following reasons:

The proposed project would have no impact on agriculture and forestry resources, land use and planning, mineral resources, and recreation.

In addition, the proposed project would have less-than-significant effects on aesthetics, air quality, geology and soils, cultural resources, hazards & hazardous materials, noise, hydrology and water quality, transportation/traffic, tribal cultural resources, population and housing, public services, and utilities and service systems.

With the following mitigation measures incorporated, the proposed project would have less-than-significant effects on biological resources and mandatory findings of significance.

- **Mitigation Measure BIO-7: Creation of Burrows.** If unoccupied burrows identified during focused burrow surveys (**BIO-3**) cannot be feasibly avoided, existing burrows will be enhanced (enlarged or cleared of debris) or new burrows will be created (by installing artificial burrows) at a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.
- **Mitigation Measure BIO-8: Burrowing Owl Monitoring Plan.** If unoccupied burrows identified during focused burrow surveys (**BIO-3**) cannot be feasibly avoided, a monitoring plan, which will include mitigation success criteria and a monitoring schedule, will be developed and implemented. The plan will be submitted to the CDFW for review prior to construction, and an annual report will be submitted to the CDFW.

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California Department of Transportation

Date of Approval

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Acronyms and Abbreviations

µg/m ³	micrograms per cubic meter
AB	Assembly Bill
ADA	Americans with Disabilities Act
AIA	Airport Influence Area
ARB	California Air Resources Board
AVAQMD	Antelope Valley Air Quality Management District
AVTA	Antelope Valley Transit Authority
Basin	Mojave Desert Air Basin
BAU	business-as-usual
BMP	best management practice
BSA	biological study area
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH ₄	methane
City	City of Lancaster
CNEL	Community Equivalent Noise Level
CO	carbon monoxide
CO Protocol	Transportation Project-Level Carbon Monoxide Protocol
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CTP	California Transportation Plan
dB	decibel
dBA	A-weighted decibels
EIR	Environmental Impact Report
EO	executive order
EPA	U.S. Environmental Protection Agency
EPACT92	Energy Policy Act of 1992
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FTIP	Federal Transportation Improvement Program
GHG	greenhouse gas

HCM	Highway Capacity Manual
HSC	Health and Safety Code
IPCC	Intergovernmental Panel on Climate Change
IRUWMP	Integrated Regional Urban Water Management Plan
IS	Initial Study
LACFD	Los Angeles County Fire Department
LACSD	Los Angeles County Sanitation District
LACWD	Los Angeles County Waterworks District
LASD	Los Angeles County Sheriff's Department
LCFS	low carbon fuel standard
LED	light-emitting diode
L_{eq}	equivalent noise level
$L_{eq}(h)$	hourly equivalent sound level
L_{max}	maximum noise level
LOS	level of service
LT	long-term
MDAB	Mojave Desert Air Basin
Metro	Los Angeles County Metropolitan Transportation Authority
mg/m^3	milligrams per cubic meter
MMT CO_2e	million metric tons of carbon dioxide equivalent
MND	Mitigated Negative Declaration
MPO	Metropolitan Planning Organization
MRZ	Mineral Resource Zone
MSAT	mobile source air toxic
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
NHTSA	National Highway Traffic Safety Administration
NPDES	National Pollutant Discharge Elimination System
NSR	Noise Study Report
OPR	Governor's Office of Planning and Research
$pc/mi/ln$	passenger cars per mile per lane
PIA	project impact area
PM10	particulate matter 10 microns or less in diameter
PM2.5	particulate matter 2.5 microns or less in diameter
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
proposed project	State Route 14/138 Avenue K Interchange Improvements Project
Protocol	<i>Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects</i>
Qf	alluvial fan deposits

Qyfc	Younger Alluvial Fan Deposits
ROW	right of way
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCS	Sustainable Communities Strategy
SEA	Significant Ecological Area
SF ₆	sulfur hexafluoride
SLR	sea-level rise
SR	State Route
ST	short-term
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDM	Transportation Demand Management
TMP	Traffic Management Plan
TNM	Traffic Noise Model
TSM	Transportation System Management
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
v/c	volume to capacity
VMT	vehicle miles traveled
WRP	Water Reclamation Plant

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Chapter 1 Introduction and Overview

1.1 Authority

The preparation of an Initial Study/Mitigated Negative Declaration (IS/MND) is governed by two principal sets of documents: California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000, et seq.). Specifically, Section 15063 of the State CEQA Guidelines and Sections 15070–15075 of Article 6 guide the process for the preparation of a negative declaration or a mitigated negative declaration. Where appropriate and supportive to an understanding of the issues, reference will be made either to the statute, the State CEQA Guidelines, or appropriate case law.

This IS/MND, as required by CEQA, contains (1) a project description; (2) a description of the environmental setting, potential environmental impacts, and consistency with plans and policies; and (3) names of preparers. Avoidance, minimization, and mitigation measures to address potential adverse effects are also provided.

The avoidance, minimization, and mitigation measures included in this IS/MND are designed to reduce or eliminate the potentially significant environmental impacts described herein. Where an avoidance and/or minimization measure described in this document has been previously incorporated into the project, either as a specific feature of design or as a standard measure, this is noted in the discussion.

1.2 Scope of the IS/MND

This IS/MND evaluates the proposed project's effects on the following resources:

- Aesthetics
- Agriculture and forestry resources
- Air quality
- Biological resources
- Cultural resources
- Geology/soils
- Greenhouse gas emissions
- Hazards & hazardous materials
- Hydrology/water quality
- Land use/planning
- Mineral resources
- Noise
- Population/housing
- Public services
- Recreation

- Transportation/traffic
- Tribal Cultural Resources
- Utilities/service systems
- Climate change
- Mandatory findings of significance

1.3 Impact Terminology

The following terminology is used to describe the level of significance of impacts:

- A finding of *no impact* is appropriate if the analysis concludes that the project would not affect the particular topic area in any way.
- An impact is considered *less than significant* if the analysis concludes that it would cause no substantial adverse change to the environment and requires no mitigation.
- An impact is considered *less than significant with mitigation incorporated* if the analysis concludes that it would cause no substantial adverse change to the environment with the inclusion of environmental commitments or other enforceable measures that have been agreed to by the applicant.
- An impact is considered *potentially significant* if the analysis concludes that it could have a substantial adverse effect on the environment after implementation of proposed mitigation measures. For the proposed project, no impacts were determined to be potentially significant.

1.4 IS/MND Organization

The content and format of this report are designed to meet the requirements of CEQA. The IS/MND consists of the proposed findings that the project would have no significant impacts. The bulk of this IS/MND consists of the initial study and supporting studies. The report contains the following sections.

- Chapter 1, *Introduction and Overview*, identifies the purpose and scope of the IS/MND and the terminology used in the report.
- Chapter 2, *Project Description*, identifies the location, background, and planning objectives of the project and describes the proposed project in detail.
- Chapter 3, *Environmental Checklist*, presents the checklist responses for each resource topic. This section includes a brief setting section for each resource topic and identifies the impacts of implementing the proposed project.
- Chapter 4, *Comments and Coordination*, includes continuing coordination with public agencies as part of the environmental process.
- Chapter 5, *References*, identifies all printed references and individuals cited in this IS/MND.
- Chapter 6, *List of Preparers*, identifies the individuals who prepared this report and their areas of technical specialty.

Chapter 2 Proposed Project

2.1 Introduction

The California Department of Transportation (Caltrans), as the lead agency under CEQA, has prepared this IS/MND to evaluate environmental effects associated with the State Route (SR) 14/138 Avenue K Interchange Improvements Project (proposed project), which would be located in the City of Lancaster in Los Angeles County.

Caltrans, in cooperation with the City of Lancaster (City) and the Los Angeles County Metropolitan Transportation Authority (Metro), is proposing to modify the geometry and capacity of Avenue K and the SR-14 (Antelope Valley Freeway)/Avenue K Interchange as well as 15th Street West. The project limits include SR-14 north and south of the interchange, the interchange proper and Avenue K between 10th Street West and 20th Street West, and 15th Street West between Avenue K and Avenue J-8. The project area is entirely within the City of Lancaster. The interchange area is in the State of California (Caltrans) right-of-way (ROW). Figure 2-1 provides a map of the project vicinity of the proposed project. The purpose of the proposed project is to improve operational capacity at this Avenue K interchange and surrounding local streets alleviating projected congestion and bottlenecks, while improving way-finding and other context-sensitive solutions.

The proposed project is included in the Southern California Association of Governments (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) under Project ID 1AL04 (Caltrans 2018a). The project is also included in the 2017 Federal Transportation Improvement Program (FTIP) under Project ID LA0G929 Amendment 15 (Caltrans 2018a). Funding for this project is made available through Metro’s Measure R program and would be used to improve the interchange, alleviating congestion and enhancing safety.

Proposed improvements include realigning the southbound directional on-ramp, widening all six ramps, installing ramp meters at the four on-ramps, modifying the lane configurations on Avenue K and 15th Street West by adding Class II bike lanes/shoulder, providing a pedestrian refuge island in the middle of crosswalks, adding through and turn lanes at intersections, raised median islands, and Americans with Disabilities Act (ADA)-compliant sidewalks. The proposed project has two alternatives, the No-Build Alternative and the Build Alternative as described in Section 2.3, *Project Description*.

2.1.1 Project Location

The proposed project is located on Avenue K and SR-14, south of Avenue J-8, north of Avenue K-8, west of 10th Street West, and east of 20th Street West in the City of Lancaster in Los Angeles County and the Antelope Valley. Avenue K runs in an east-west direction in the project area and generally consists of three lanes in each direction with additional turn lanes at major intersections. SR-14 crosses over Avenue K at an angle and contains freeway ramps in each quadrant of the SR-14/Avenue K interchange. Figure 2-2 provides a map of the project area

2.1.1.1 Existing Site Conditions and Surrounding Land Uses

The proposed project site occurs within a densely populated urban area surrounded by residential and commercial development. The proposed project is within the City of Lancaster and existing Caltrans ROW, consisting of paved roadbed, sidewalk, and landscaping, which are subject to moderate to heavy vehicular and pedestrian traffic. Maintenance and operations routinely occur within the ROW. Parcels adjacent to the ROW are primarily privately owned and consist of a mix of commercial businesses and

isolated vacant or highly disturbed lots. The proposed project site is characterized by a mix of developed and a few sparsely vegetated vacant parcels on generally flat terrain. 15th Street West between Avenue K and Avenue J-8 and Avenue K between 10th Street West and 20th Street West are primarily zoned for Commercial and Commercial Planned Development. The developed land along Avenue K predominantly consists of commercial retail uses (e.g., fast-food restaurants, banks, and gas stations) with related suburban infrastructure including overhead utility lines, streetlights, medians, and surface parking lots serving the commercial uses along the corridor.

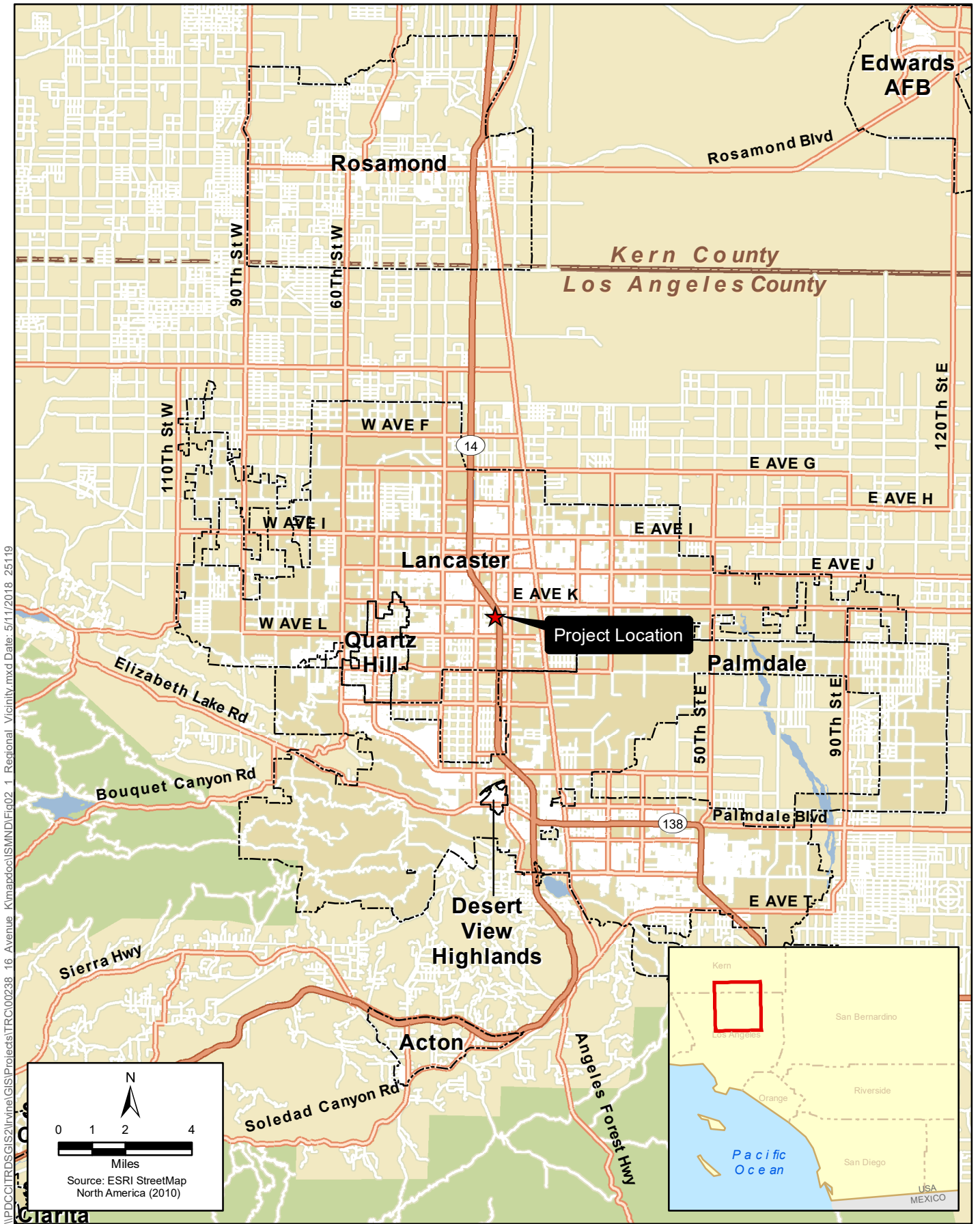
Landscaping is also a notable element along the project corridor and occurs within interchange loop ramps and ramp gores, within portions of the Avenue K median between 17th Street West and 13th Street West, and between sidewalks and parking lots associated with roadside businesses. Landscaping associated with the interchange and Avenue K medians (within the State ROW) consists of a mix of native and non-native trees, shrubs, and ground covers that are mostly evergreen, including ceanothus groundcovers, juniper groundcovers and shrubs, oleanders, and pine trees.

2.1.1.2 Existing General Plan and Zoning

The existing general plan for the City of Lancaster is *City of Lancaster General Plan 2030*, which was published in July 2009. According to the City of Lancaster's Central Zoning Map, the land within the project limits is zoned as Commercial (C), Commercial Planned Development (CPD), and Open Space (O).

2.1.2 Project Background

The Avenue K corridor is currently experiencing high traffic volumes during peak hours (Avenue K, within the project limits, currently carries approximately 1,000 vehicles per direction in the AM and PM peak hours). The increased traffic congestion along Avenue K between 20th Street West and 10th Street West and at the SR-14 and Avenue K interchange is due to the traffic generated by regional and local land use development over the past few years and constrained geometrics. Continued growth in traffic demand in the study area due to projected population, housing, and employment growth would exacerbate congestion levels, thereby adversely affecting mobility and safety.



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Figure 2-1
Project Vicinity
Lancaster SR14/Avenue K Interchange Project

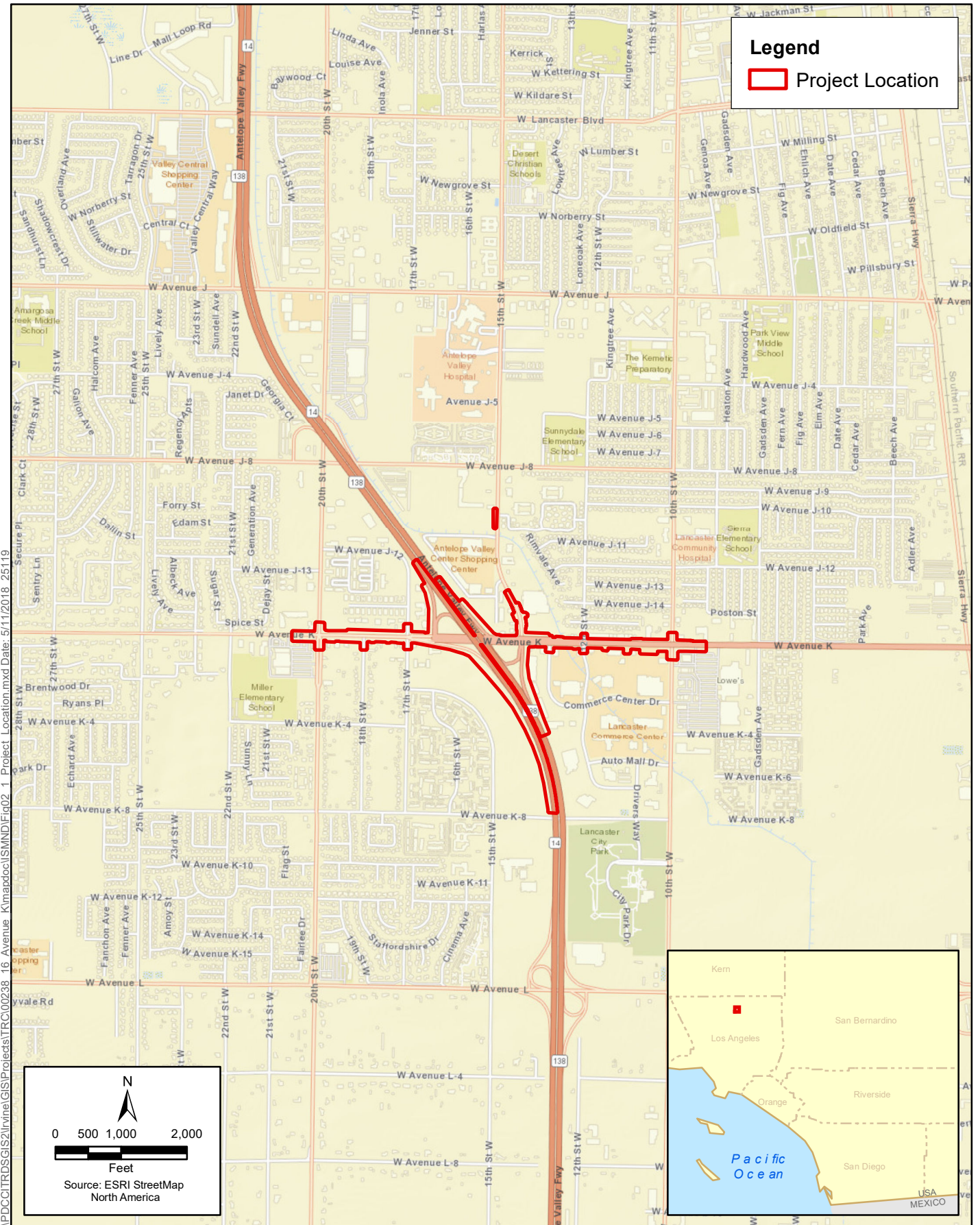


Figure 2-2
Project Location
Lancaster SR14/Avenue K Interchange Project

2.2 Purpose and Need

The primary goal of the SR-14/Avenue K Interchange Improvements Project is to address the traffic congestion and safety concerns on the SR-14/Avenue K Interchange and along Avenue K. The projected continued growth in the area will place additional demands on the regional roadway network, including the Avenue K corridor. The Traffic Engineering Performance Assessment, prepared under separate cover, describes the preliminary traffic forecast and intersection analysis for 2040. According to the Traffic Engineering Performance Assessment, the level of service (LOS) for Avenue K and local intersections would be an unacceptable LOS F. In addition to the projected significant traffic congestion at Avenue K, the following deficiencies have been identified and underscore the need for the project:

- *Northbound Off-Ramp Congestion at the Ramp Terminus at Avenue K*

According to the Traffic Engineering Performance Assessment, each of the single left-turn lane and single right-turn lane would not be able to handle the approximately 400 vehicles per hour and would cause traffic backups, which may extend farther toward the freeway mainline during the AM/PM peak hours.

- *Southbound Directional On-Ramp Geometry on Avenue K/17th Street West*

The existing ramp entrance forms a “free right” approach at the ramp entrance. According to the City’s Master Plan of Trails and Bikeways, a proposed Class II bicycle lane would cross the ramp entrance, resulting in an incompatible vehicular approach speed with bike and pedestrian traffic.

- *Unmetered Northbound and Southbound On-Ramps*

As outlined in the SR-14 Transportation Concept Report, reducing congestion by monitoring vehicle volume is not possible because metering is currently not installed on any of the on-ramps in the project area.

Other issues, such as bicycle/vehicle and bicycle/pedestrian conflicts, pedestrian mobility, bus services, and bottlenecked intersections in 2040, would be alleviated through the improvements proposed by the project.

Accordingly, the goals of the proposed project are to:

- Alleviate projected traffic congestion along Avenue K.
- Improve operational capacity at this interchange and local street intersections by refining the geometry.
- Comply with the Complete Streets Program, a policy that requires streets to be planned, designed, operated, and maintained to enable safe, convenient, and comfortable travel and access for those walking, bicycling, driving automobiles, or riding public transit, by incorporating bicycle and transit travel.
- Reduce the bike/vehicle conflicts at intersections and provide predictable movements by delineating bike lanes.
- Enhance pedestrians’ safety, in conformance with ADA requirements, by providing sidewalks and curb ramps.

- Facilitate rapid and continued economy growth within the city and surrounding areas.
- Effectively manage mainline traffic by installing ramp metering systems.
- Minimize the impact on through and right-turn traffic by coordinating with Antelope Valley Transit Authority (AVTA) to determine the design and location of bus bays and turn-outs.
- Renovate 15th Street West at Avenue K, including establishment of a city monument for greeting visitors, installation of appropriate way-finding signs that point toward important destinations, and modernization of the landscape at each corner of this intersection.

2.3 Project Description

This section describes the proposed action and the project alternatives developed to meet the purpose and need of the project, while avoiding or minimizing environmental impacts. The proposed project includes SR-14 north and south of the interchange (PM R66.2 to PM R67.1), the interchange proper, and Avenue K between 10th Street West and 20th Street West and 15th Street West between Avenue K and Avenue J-8. The Build Alternative, which is described in more detail below, would modify the geometry and capacity of Avenue K and SR-14/Avenue K interchange as well as 15th Street West as described in Section 2.3.1.1 below.

2.3.1 Alternatives

2.3.1.1 Build Alternative

This alternative consists of widening or realigning ramps within the interchange. More specifically, this alternative would widen the northbound off-ramp to five lanes, the southbound off-ramp to three lanes, and the northbound and southbound on-ramps to two lanes while realigning the southbound directional on-ramp and providing ramp metering systems at these on-ramps. Both off-ramp intersections at Avenue K would be widened to accommodate the ramp widening and reconfiguration. Replacement landscaping would also be provided.

Avenue K would be widened from 20th Street West to 10th Street West, as would 15th Street West. This work includes providing Class II bike lanes throughout the project limits along Avenue K and 15th Street West, constructing a third lane on westbound Avenue K between 12th Street West and 10th Street West, constructing right-turn lanes along Avenue K to side streets, various drive approaches, and on-ramps, and widening 15th Street West at Avenue K to improve traffic operations at the intersection. Construction along 15th Street West would take place between Avenue K and the Toys R Us driveway. Pedestrian facilities would be upgraded to meet ADA standards. A new raised curb median would be provided between 20th Street West and 18th Street West and between 12th Street West and 10th Street West. In addition, a new signal is proposed at the driveway closest to the corner of the building along 15th Street West, adjacent to the Toys R Us. The project would also add a new 36-inch potable water line from 10th Street West to 550 feet west of 20th Street West between the curbs for the entire length and likely offset from the centerline. Excavation depth would not exceed 10 feet. The trench would be approximately 8 feet wide and require a single lane closure during installation. The trench would be backfilled and the surface repaved to meet existing grade. Other repaving or cold plane improvements to existing pavement would be provided as necessary, and new City Monument and landscape improvements would be provided at the northeast corner of the Avenue K/15th Street West intersection. Along the southbound on-ramp, the ramp realignment would require the construction of a 635-foot-long retaining wall between SR-14 and the ramp.

A portion of the proposed work would be performed within Caltrans ROW and the remaining work would be performed within the City of Lancaster public road ROW. There would, however, be a need to permanently partially acquire residential, commercial, and vacant lots in order to accommodate the additional through and left-/right-turn and bike lanes and sidewalks on Avenue K. The Build Alternative could require small partial acquisitions of up to 80 properties to accommodate widening of Avenue K. However, it is not anticipated that any structures, businesses, or residences would be displaced as a result of the project. Accordingly, no changes to existing land uses or land use designations would occur, as no existing land uses would be converted to a transportation use. It should be noted that no acquisition of property or ROW easements are required to construct the improvements proposed within the Caltrans ROW.

The Build Alternative is represented visually in Appendix A.

Right-of-Way Impacts

Land acquisitions would be required under the Build Alternative. The existing 100-foot ROW width of Avenue K is unable to accommodate the additional through and left-/right-turn lanes and bike lanes and sidewalks proposed in this project; therefore, the Build Alternative would require partial acquisition of residential, commercial, and vacant lots. The Build Alternative could require small partial acquisitions of up to 80 properties to accommodate widening of Avenue K. However, it is not anticipated that any structures, businesses, or residences would be displaced as a result of the project. Accordingly, no changes to existing land uses or land use designations would occur, as no existing land uses would be converted to a transportation use.

Design Features of the Build Alternative

In State Right of Way

Proposed project improvements within the State ROW include widening or realigning ramps within the SR-14/Avenue K Interchange and improvements to Avenue K between 15th Street West and 17th Street West. The proposed improvements include the following:

1. Realigning and widening the southbound directional on-ramp and constructing a retaining wall along the ramp that would be approximately 635 feet long;
2. Widening the other five on-ramp and off-ramps and the intersections formed by Avenue K and those ramps;
3. Modifying the lane configurations on Avenue K;
4. Installing a ramp metering system and counting facilities for future use;
5. Providing a pedestrian refuge island in the middle of the crosswalk along the east leg of Avenue K/15th Street West/northbound SR-14 off-ramp intersection;
6. Constructing a meandering sidewalk on the south side of Avenue K approximately from the southbound off-ramp to the southbound direct on-ramp; and
7. Constructing a new 36-inch potable water line below Avenue K, between the curbs for the entire length and likely offset from centerline. The trench would be approximately 8 feet wide and require a single lane closure during installation. The trench would be backfilled and the surface repaved to meet existing.

In City Right of Way

Proposed project improvements within the City ROW include improvements along Avenue K from 20th Street West to 17th Street West and from 15th Street West to 10th Street West. In addition, proposed project improvements include improvements along 15th Street West between Avenue K and Avenue J-8. The proposed improvements include the following:

1. Constructing additional pavement width to result in three through lanes in both the east- and west-bound directions along Avenue K and cold planing the existing AC pavement along Avenue K to improve the traffic operation and enhance safety;
2. Providing Class II bike lanes between 20th Street West and 15th Street West in the westbound direction and between 20th Street West and 13th Street West in the eastbound direction;
3. Constructing raised median islands, concrete curb and gutters, driveways, and sidewalks in accordance with the proposed street layout and in conformance with ADA standards along 15th Street West between Avenue K and Avenue J-8;
4. Modifying the existing traffic signal phase to improve traffic operation and enhance safety of the intersections along the Avenue K corridor from 20th Street West to 17th Street West and 15th Street West to 10th Street West and of the intersections along 15th Street West from Avenue K to Avenue J-8;
5. Installing a new traffic signal system on the proposed driveway to the Toys R Us development on 15th Street West;
6. Replacing the existing AC gutter and sidewalk to concrete curb & gutter and sidewalk along Avenue K from 20th Street West to 17th Street West and from 15th Street West to 10th Street West;
7. Replacing removed landscaping with drought-tolerant native plants. Replacement plantings on non-standard 2:1 slopes would occur at the same density as existing plantings. Non-standard 2:1 slopes would require a design exception; and
8. Installing a landscaped structure at the northeast corner of Avenue K/15th Street West intersection for the City that would serve as a welcome sign. This structure would include a visitors' greeting, way-finding signs to point toward important destinations, and modernized landscaping at each corner of the intersection.

Standardized Measures

The Build Alternative includes the following standardized measures that are included as part of the project description. Standardized measures (such as Best Management Practices [BMPs]) are those measures that are generally applied to most Caltrans projects. These standardized or pre-existing measures allow little discretion regarding their implementation and are not specific to the circumstances of a particular project. More information on each measure can be found in the applicable sections of Chapter 3.

- **Aesthetics:** Landscaping within Caltrans ROW will be provided in accordance with Caltrans standards.
- **Air Quality:** The proposed project will comply with Antelope Valley Air Quality Management District (AVAQMD) rules and regulations, including Rule 403 (Fugitive Dust Control) and Rule 1108 (Cutback Asphalt), and the construction contractor will comply with the dust suppression measures in Caltrans' Standard Specifications.

- **Biological Resources and Water Quality:** BMPs for Erosion Control and Water Pollution will be implemented in accordance with Caltrans standards.
- **Cultural Resources:** Standard provisions dealing with the discovery of unanticipated cultural materials or human remains will be included in project plans and specifications.
- **Noise:** The project will conform to the provisions in Section 14-8.02, “Noise Control,” of Caltrans’ 2015 Standard Specifications and Special Provisions.
- **Traffic and Transportation:** A Traffic Management Plan (TMP) will be prepared for the project.

2.3.1.2 No-Build Alternative

The No-Build Alternative assumes the proposed project will not be constructed and allows decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. Under this alternative, no reconstruction or improvements would be made to SR-14, the ramps, 15th Street West or Avenue K. The No Build Alternative would maintain the existing configuration of the SR-14/Avenue K interchange and existing roadway circulation and therefore would not improve the traffic operational capacity leading to deteriorating LOS conditions, worsening air quality, and increased maintenance costs. In addition, it would not enhance the pedestrian safety in the area. There are no other known projects in the area that would address the needs identified for this area.

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

Transportation System Management (TSM) and Transportation Demand Management (TDM) were considered and discussed as part of this project because they were determined to be relevant to the purpose of this project. TSM strategies increase the efficiency of existing facilities and are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes and TDM focuses on regional means of reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. Further strategies considered by the proposed project include proposed bike lanes, ramp metering and signal coordination, as well as turning lanes and pedestrian improvements, which would reduce congestion and enhance safety.

2.3.1.4 Reversible Lanes

Assembly Bill (AB) 2542 amended California Streets and Highways code to require, effective January 1, 2017, that Caltrans or a regional transportation planning agency demonstrate that reversible lanes were considered when submitting a capacity-increasing project or a major street or highway lane realignment project to the California Transportation Commission for approval (California Streets and Highways Code, Section 100.015). Reversible lanes are not feasible for the proposed project, as this section of the project alignment does not include an existing high-occupancy vehicle lane, justified by the existing traffic high LOS on the freeway. For reversible lanes to be feasible there has to be existing capacity where the high-occupancy vehicle lane lanes operate in one direction during the AM peak period and change to the opposite direction during the PM peak. Therefore, it is not feasible to include a reversible lane as a project alternative.

2.3.2 Alternatives Considered by Eliminated from Further Consideration

The City held a workshop with Caltrans and the Federal Highway Administration (FHWA) on February 18, 2014, to discuss the Intersection Control Evaluation process and identify potential alternatives, including converting the signalized intersections to roundabouts for the SR-14/Avenue K interchange.

However, it was concluded that the roundabout alternative was impractical for this project due to the excessive ROW impact and the associated cost. Therefore, the roundabout alternative was eliminated from further consideration.

2.4 Permits and Approvals Needed

Caltrans is the lead agency under CEQA and is responsible for planning and implementing the project and approving the following discretionary actions to implement the project for the Project Approval and Environmental Document phase:

- Adoption of the Mitigated Negative Declaration.
- Adoption of an Environmental Commitments Record.

The City of Lancaster would be the agency responsible for constructing the proposed project.

Other public agencies may also have discretionary authority over the project or aspects of the project, and are considered responsible agencies. The MND can be used by the responsible agencies to comply with CEQA in connection with their permitting or approval authority over the project. The following approvals may also be required to implement the proposed project:

- Caltrans – *Encroachment permit*
- Lahontan Regional Water Quality Control Board - *National Pollutant Discharge Elimination System (NPDES) general construction permit* (for individual construction projects of a particular size or projects that result in point source discharges)
- Lahontan Regional Water Quality Control Board – *Stormwater Pollution Prevention Plan (SWPPP)*

2.5 Related Projects within the Vicinity of the Proposed Project

Table 2-1 lists the related projects that were considered in the cumulative impact analysis as of 2018. The list consists of all potential projects located within approximately 2 miles of the study area.

Table 2-1. Related Projects

No.	Project Name	Location	Description
1	SR-14 (SR-138)/Avenue G Interchange Improvements Project	SR-14/Avenue G	Project would widen Avenue G for a center turn-lane, bike lanes, and sidewalks between 10 th Street West and 25 th Street West, and would include geometric changes to the SR-14 ramps, intersection controls, and pedestrian improvements. The project is approximately 2 miles north of the proposed project.
2	SR-14 (SR-138)/Avenue J Interchange Improvements Project	SR-14/Avenue J	Project would include a new northbound off-ramp and southbound on-ramp, mainline improvements to accommodate ramp modifications, improvements to Avenue J between 15 th Street West and 25 th Street West, and traffic signal improvements. Project would reduce through lanes on Avenue J from 3 lanes to 2 lanes in each direction between 25 th Street West and 15 th Street West to provide bike lanes and wider sidewalks. The project is approximately 1 mile north of the proposed project.
3	SR-14 (SR-138)/Avenue L Interchange Improvements Project	SR-14/Avenue L	Project would reduce through lanes from 4 to 3 lanes in the westbound direction on Avenue L between 15 th Street West and the SR-14 ramps, and reduce through lanes from 3 to 2 lanes in the eastbound direction on Avenue L between the SR-14 ramps and 10 th Street West to provide bike lanes and wider sidewalks. Project would include geometric changes to the SR-14 ramps and traffic signal improvements between 15 th Street West and 10 th Street West to improve vehicle, pedestrian, and bicycle safety. The project is approximately 1 mile south of the proposed project.
4	SR-14 (SR-138)/Avenue M Interchange Improvements Project	SR-14/Avenue M	Project would widen Avenue M from 10 th Street West to 20 th Street West to provide a center turn-lane, bike lanes, and sidewalks. The project includes geometric changes to the SR-14 ramps, intersection controls, and bike and pedestrian improvements from west of 20 th Street West to 10 th Street West. The project is approximately 2 miles south of the proposed project.
5	Planned development	N/A	The planned development is a 20,000-square-foot commercial development that will be located at the intersection of 10 th Street West and Avenue K. Construction of the development has yet to begin. The planned development is in the vicinity of the proposed project.

Source: Kimley-Horn 2018

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Chapter 3 California Environmental Quality Act Evaluation

3.1 Determining Significance under CEQA

The project is subject to state environmental review requirements. Project documentation, therefore, has been prepared in compliance with CEQA. Caltrans is the lead agency under CEQA.

CEQA requires Caltrans to identify each “significant effect on the environment” resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report (EIR) must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of “mandatory findings of significance,” which also require the preparation of an EIR. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as BMPs and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented.

3.3 Evaluation of Environmental Impacts

The No-Build Alternative, would not make any changes to the existing roadway and site conditions would remain unchanged. As a result, no impacts would occur from the No-Build Alternative; therefore, a discussion of impacts associated with this alternative is not presented in the document unless impacts are identified.

The environmental factors checked below would potentially be affected by the Build Alternative (i.e., the project would involve at least one impact that is “Less Than Significant”), as indicated by the checklist on the following pages.

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forest Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards and Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input checked="" type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Transportation/Traffic | <input checked="" type="checkbox"/> Tribal Cultural Resources | <input type="checkbox"/> Utilities/Service Systems |
| | <input checked="" type="checkbox"/> Mandatory Findings of Significance | |

I. Aesthetics	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Information in this section is based on the *Visual Impact Assessment* (Caltrans 2018b).

The project location and setting provide the context for determining the types of changes to the existing visual environment. The project corridor is defined as the area of land that is visible from, adjacent to, and outside the highway ROW, and is determined by topography, vegetation, and viewing distance.

The project area is entirely within the City of Lancaster in Los Angeles County, California. The project vicinity is within a relatively flat valley (1 to 2 percent slope) that lies at the westernmost edge of the Mojave Desert geomorphic province and is back-dropped to the north, west, and south by the Sierra Nevada and San Bernardino Mountain ranges that meet near Lancaster and rise up to 9,600 feet above mean sea level. The natural, undeveloped landscape of the vicinity is arid and composed of exposed earth and gravels that support patches of low-growing grasses, desert shrubs (e.g., creosote and saltbush), and Joshua Trees. However, development in the vicinity provides lush greenery in the form of residential and commercial landscaping that includes lawn, shrubbery, and mature trees that are supported by irrigation.

The limits of the project corridor include SR-14 north and south of the interchange, the interchange proper, Avenue K between 10th Street West and 20th Street West, and 15th Street West between Avenue K-8 and Avenue J-8. Avenue K runs in an east-west direction in the project area and generally consists of three lanes in each direction with additional turn lanes at major intersections. SR-14 crosses over Avenue K at an angle and contains freeway ramps in each quadrant of the SR-14/Avenue K interchange. The project corridor is abutted by a mix of developed parcels and a few sparsely vegetated, vacant parcels. Three single-family residences are located immediately next to one another on the south side of Avenue K, just west of 18th Street West, and these residences have small lawn areas, mature trees and shrubs, and block walls that separate the properties. One residence has chain link fencing around its front yard. 15th Street West between Avenue K and Avenue J-8 and Avenue K between 10th Street West and 20th Street West are primarily zoned for Commercial and Commercial Planned Development. The developed land along Avenue K predominantly consists of commercial retail uses (e.g., fast-food restaurants, banks, and gas stations) with related suburban infrastructure including overhead utility lines, streetlights, medians, sidewalks, and surface parking lots serving the commercial uses along the corridor.

Landscaping is also a notable element along the project corridor that occurs within interchange loop ramps and ramp gores, within portions of the Avenue K median between 17th Street West and 13th Street West, and between sidewalks and parking lots associated with roadside businesses. Landscaping

associated with the interchange and Avenue K medians (within the State ROW) consists of a mix of native and non-native trees, shrubs, and ground covers that are mostly evergreen, including ceanothus groundcovers, juniper groundcovers and shrubs, oleanders, and pine trees. In addition, there are limited amounts of deciduous trees and shrubs associated with the State ROW. The roadside and median landscaping within the State ROW is complemented by medians and paved areas between the sidewalks and landscaped portions of the ramp loops and gores include stamped concrete that mimics brick pavers. In addition, some planting beds in the ramp loops and gores use rock to delineate beds. A short, curvilinear wall is located in the southeast loop ramp. The hardscape (i.e., paving, wall, and stones) and softscape (i.e., individual plants and plant groupings) features used in the ramp plantings utilize angular and curvilinear forms to provide rectilinear and curvilinear visual interest. Seasonal visual interest is also provided by the use of flowering and deciduous and evergreen plant species. Mostly narrow swaths of lawn between sidewalks and parking lots and a mix of evergreen and deciduous ornamental plant species are located along Avenue K, outside of the State ROW. The project corridor is fairly well-lit at night from street and interchange lighting, lighting from residences and businesses, and lighting from vehicle headlights.

Scenic vista views are available to the north, west, and south of the Sierra Nevada and San Bernardino mountains from SR-14, which has an elevated crossing over Avenue K. However, bordering development and landscaping prevent scenic vista views from Avenue K and local arterials crossing the project corridor. In addition, there are no roadways within or near the project area that are designated in federal, state, or local plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds (Caltrans 2017a). Therefore, implementation of the proposed project would not damage scenic resources, such as trees, rock outcroppings, and historic buildings along a scenic highway. However, SR-14 is a classified Landscaped Freeway from PM 66.19 to PM 67.60 (Caltrans 2016). As defined by the Outdoor Advertising Act, a landscaped freeway “means a section or sections of a freeway that is now, or hereafter may be, improved by the planting at least on one side or on the median of the freeway right-of-way of lawns, trees, shrubs, flowers, or other ornamental vegetation requiring reasonable maintenance.” Landscaped freeways must have planting areas that are at least 1,000 feet in length that are in healthy condition and improve the aesthetic appearance of the highway. Functional plantings (i.e., plantings for erosion control, traffic safety, reduction of fire hazards, and traffic noise abatement, or other non-ornamental purposes) do not qualify. The Outdoor Advertising Act prohibits the placement of advertising within 660 feet of the edge of the ROW of a landscaped freeway (Caltrans 2014).

Impact Analysis

Would the project:

a. Have a substantial adverse effect on a scenic vista?

Construction

Less-than-significant impact. The presence of construction equipment and temporary traffic barricades would result in temporary construction impacts by altering the composition of the view available from and to the project corridor and could potentially block existing available scenic vistas to the north, west, and south of the Sierra Nevada and San Bernardino mountains from SR-14. However, because construction activities would be temporary, lasting up to approximately 12 months, and scenic vistas or views would not be permanently altered or obstructed, the impact on scenic vistas during construction would be less than significant.

Operation

No impact. Views of scenic vistas would not be affected by the proposed project because no new features would be introduced that would interfere with or detract from existing vista views that are available.

b. *Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings along a scenic highway?*

According to the Caltrans Scenic Highway Program, no Eligible or Officially Designated State Scenic Highways are present within the project vicinity. Angeles Crest Highway (State Route 2), from just north of Interstate 210 to the Los Angeles/San Bernardino county line, is the closest designated State Scenic Highway and is approximately 50 miles from the proposed project site..

Construction

Less-than-significant impact. Although there are no roadways within or near the project area that are designated in federal, state, or local plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds, and no scenic rock outcroppings and historic buildings are present that would be damaged as a result of the proposed project, grading required to construct the widened and reconfigured freeway ramps would require removal of existing vegetation. In accordance with the Caltrans Highway Design Manual, the ramp slopes would be replanted with native plants, at the same density as existing plantings. In addition, Caltrans design standards require that replanting reflect adjacent communities and natural surroundings, and serve as a visual buffer for objectionable views of the highway facility for adjacent land uses and to frame or enhance good views. Therefore, impacts would be less than significant. Avoidance and Minimization Measure AE-3, *Implement Landscape Design Measures*, would ensure that impacts are minimized.

Landscaping vegetation would also be removed to accommodate the Avenue K widening including vegetation along the roadway sidewalks and within roadway medians. The removal of this vegetation would slightly reduce the quality of views associated with roadway travelers and would likely be viewed negatively by residential and commercial viewers who would experience a change in views and whose properties experience a loss of such features that may be highly valued. Because the proposed project improvements include new replacement landscaping within the Avenue K ROW, this impact would be less than significant. Additionally, implementation of Avoidance and Minimization Measure AE-3, *Implement Landscape Design Features*, and Avoidance and Minimization Measure AE-4, *Replace or Relocate Landscaping and Site Features Affected by the Project*, would ensure landscape features that are damaged or destroyed as a result of the project are either replaced, to the degree possible, or that private property owners are compensated for the loss of such.

Operation

No impact. There are no roadways within or near the project area that are designated in federal, state, or local plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds. Additionally, vegetation within the Caltrans ROW that would be removed during construction of the ramps would be replaced in accordance with Caltrans standards and vegetation within Avenue K ROW would be replaced as part of the proposed project improvements (see discussion above under *Construction*). Therefore, there would be no operational impacts on scenic resources along a designated scenic highway.

c. Substantially degrade the existing visual character or quality of the site and its surroundings?

Construction

Less-than-significant impact. Equipment that would be used for construction includes graders, excavators, drilling rigs, cranes, pavers, compactors, and various types of construction vehicles. General construction activities, construction staging/stockpiling, the storage of road-widening/building materials, the presence of construction equipment, and temporary traffic barricades would result in temporary construction impacts by altering the composition of the view available from and to the project corridor. Because the impacts from the presence of equipment and materials would be temporary, the impacts would be less than significant.

Construction of the proposed project would also result in visual changes associated with wider ramps, realigned ramps, modified slopes of ramps, vegetation removal and replacement, and ramp metering. One of the realigned ramps would require the construction of a 635-foot-long retaining wall between SR-14 and the on-ramp. The retaining wall would be approximately 22 feet tall and would result in a slight increase in reflective glare that could potentially be experienced by travelers on the ramp, due to the introduction of a vertical wall surface. Avoidance and Minimization Measure AES-2 would ensure that long-term aesthetics associated with the retaining wall structure are improved, while serving the dual purpose of reducing the potential for nuisance daytime glare.

The most notable change associated with the ramps would be the removal of vegetation to accommodate grading and the widened ramps. Although detailed landscaping plans have not yet been developed for the proposed project, Caltrans design standards require that the modified ramp slopes be replanted with native plants at the same density as existing plantings to stabilize the slopes and soften their appearance. Therefore, impacts on visual quality due to the removal of freeway ramp vegetation would be less than significant. Avoidance and Minimization Measure AES-3 would also be implemented to ensure that landscape aesthetics associated with the project corridor are retained during landscape plan development.

Visual changes along Avenue K would include the following: closing an existing gap in the sidewalk along the west side of 15th Street West; widening along Avenue K and the partial acquisition of residential, commercial, and vacant lots; vegetation removal along the medians and sidewalks; and shifting sidewalks and entrances closer to residences and businesses. Similar to the ramp impacts described above, the removal of vegetation along the roadway and sidewalks would be the most noticeable change during construction. Given proposed project improvements include new replacement landscaping along Avenue K, the impacts would be less than significant. Additionally, implementation of Avoidance and Minimization Measure AES-4 would ensure landscape features that are damaged or destroyed as a result of the proposed project are either replaced or that private property owners are compensated for the loss of such features

Roadway landscaping is complemented by medians and paved areas that include stamped concrete that mimics brick pavers. Portions of this pavement would be removed during construction and could result in a negative change to the visual landscape if not replaced. The installation of new raised medians would increase the presence of such features within the project corridor. Although these impacts are not expected to be significant, Avoidance and Minimization Measure AES-2 is proposed to ensure that stamped concrete that mimics brick pavers is used as an aesthetic hardscape feature, consistent with existing conditions.

Construction of the proposed project also includes changes to bicycle and pedestrian infrastructure and installing a monument at the northeast corner of the Avenue K and 15th Street West intersection. The proposed changes to bicycle and pedestrian infrastructure would be minor in scale and would be

compatible and consistent with the existing visual character of these areas. In addition, these features would create a safer traveling experience and interface for cyclists, pedestrians, and motorized travelers. The new monument would include a visitors' greeting, way-finding signs to point toward important destinations, and modernized landscaping at each corner of the intersection that would aid in improving visual conditions at this location. Therefore, changes associated with the bicycle and pedestrian infrastructure and City monument are anticipated to be perceived as beneficial by viewer groups.

Utility relocations would only result in minor visual changes. The new 36-inch potable water line within Avenue K would be underground and not visible. Roadway repaving over the trench would blend to meet the existing pavement and no vegetation would be affected by installation of the water line. Therefore, construction of the water line would not substantially degrade the existing visual quality or quality of the site and its surroundings for neighbors in the community or travelers on the roadways. The proposed project would also require the relocation of existing utility lines along Avenue K and 15th Street West and the relocation of Southern California Edison overhead cables. Because overhead utility lines are an existing visual element within the project corridor, relocation of these lines would not substantially change the visual character or quality of the project area.

Overall, the impact of visual changes associated with construction of the proposed project would be less than significant and implementation of the prescribed Avoidance and Minimization Measures would further minimize potential impacts.

Operation

Less-than-significant impact. Completion of the proposed project would result in changes to the existing visual character of the project site. The interchange embankments, modified ramps, vegetation removal, and retaining wall would result in alterations to the visual character and would increase the prominence of highway infrastructure, which would slightly degrade views associated with the corridor. However, the proposed project improvements would include replacement landscaping, which would soften the appearance of the widened ramps and roadway and slope changes. Implementation of Avoidance and Minimization Measures AES-2 and AES-3 would ensure impacts are minimized and would improve the long-term aesthetics associated with the interchange embankments, ramps, retaining wall structure, and roadway widening.

d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Construction

Less-than-significant impact. Nighttime construction would likely occur and some nighttime lighting at the construction site would be required and could result in nuisance light for residents if not properly designed. These impacts, however, would be temporary. Furthermore, all construction lighting would conform to City of Lancaster requirements and guidelines and be directed away from sensitive uses. Lighting would be directed downward, and spill light would be minimized to the greatest extent practicable. Significant changes in ambient illumination levels as a result of project sources are not expected, and construction lighting would not be expected to be a significant nuisance to nearby businesses, employees, and customers. Project construction would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area, and impacts would be less than significant. To ensure that construction lighting impacts would be minimized, Avoidance and Minimization Measure AES-1 would be implemented.

Operation

Less-than-significant impact. Once the project is constructed and operational, the proposed project would introduce marginal new light to the area. New light coming from ramp metering would add an inconsequential amount of light to the project area when meters are in use. Installation of traffic signals on 15th Street West at the proposed entrance to the Toys R Us development would result in an incremental increase in light and glare associated with the proposed project. However, street lighting would also be relocated along the project corridor and ramps and this lighting, if not properly designed, could negatively affect nearby roadway neighbors and roadway users. In particular, replacement street lighting could include light-emitting diode (LED) lighting for security and safety purposes. LED lights can negatively affect humans by increasing nuisance light and glare, in addition to increasing ambient light glow, if shielding is not provided and blue-rich white light lamps are used. This would be an adverse but less-than-significant impact. Implementation of Avoidance and Minimization Measure AES-5 will ensure that the street lighting does not negatively affect nighttime views or sensitive viewers. With the implementation of Avoidance and Minimization Measure AES-5, the impact from construction of the proposed project would be less than significant.

Avoidance, Minimization, and Mitigation Measures

- **Avoidance and Minimization Measure AES-1.** At a minimum, the construction contractor shall minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights will be used. Portable lights shall be operated at the lowest allowable wattage and height and shall be raised to a height no greater than 20 feet. All lights shall be screened and directed downward toward work activities and away from the night sky and highway users and highway neighbors, particularly residential areas, to the maximum extent possible. The number of nighttime lights used shall be minimized to the greatest extent possible.
- **Avoidance and Minimization Measure AES-2.** The project engineer/designer shall implement an aesthetic design treatments with a consistent motif for the paved medians, hardscape features, and new retaining wall. Paved medians and hardscaping other than sidewalks shall be paved and colored to resemble brick pavers, consistent with existing conditions. In addition, the retaining wall shall apply aesthetic design treatments. Choosing earth-toned colors for the surfaces would be less distracting to viewers than light or brightly colored surfaces. The design motif applied to the retaining wall shall reflect a combination of naturally colored surfaces and surfaces that are textured to appear as natural materials (e.g., rock or cobble) or that incorporate a design theme (e.g., wildlife and plants of local, native oak woodlands; traditional architectural elements such as inset panels; or other design reflecting local heritage or environment associated with the City or the Mojave Desert) using form liners. This would reduce visual monotony, soften verticality, reduce glare, and be more visually pleasing to viewers than plain surfaces for retaining walls that would be visible to traffic passing the wall. Roughened retaining wall surfaces would soften the verticality of the wall faces by providing visual texture and reducing the amount of smooth surface that can reflect light. Furthermore, if possible, a plantable wall surface, such as a retaining wall structure that allows interstices for planting shall be evaluated for use as a possible BMP to help introduce more landscaping. However, a plantable wall surface shall not be used if it would require more space and create a greater impact on adjacent landscaping. The shade of the wall shall also be carefully considered. Studies have shown that structures two to three degrees darker than the color of the general surrounding area create less of a visual impact than matching or lighter hues.¹ In general, very light buff/tan, brown, or gray colors stand out more than darker colors such as deep

¹ Refer to <https://www.ntc.blm.gov/krc/viewresource.php?courseID=972&programAreaId=50>, *Unit 5 Visual Design Fundamentals*, for more information on this technique and other best management practices and techniques for visual screening.

browns, deep red-browns, and deep warm grays that have the ability to complement the surrounding vegetation.

- **Avoidance and Minimization Measure AES-3.** Landscaping within interchange loops and gores, on constructed earth slopes, and within the medians of Avenue K will improve the visual quality of the roadway corridor by improving corridor aesthetics and helping to reduce the apparent scale of widened travel ways and the new retaining wall. This landscaping will also serve as a buffer and screen against nuisance lighting resulting from oncoming vehicle headlights and roadway lighting and help to prevent or greatly reduce nuisance lighting from affecting nearby sensitive viewers. Prior to approval of the roadway design, the project landscape architect shall work with the Caltrans project landscape architect to review project designs to ensure that the following elements are implemented in the project landscaping plan:
 - The majority of the species composition shall reflect species that are native and indigenous to the local area. Native plant species can be used to create attractive spaces, high in aesthetic quality, that are not only drought-tolerant but attract more wildlife than traditional landscape plant palettes. Use of native species promotes a visual character of California that is being lost through development and reliance on non-native ornamental plant species. Non-invasive, non-native plant species may be used where native plant species will not achieve the desired design intent.
 - All areas within the State and City ROW that have landscaping that is disturbed and has plantable space shall be re-planted in a manner that mimics and emulates the existing landscape design within the State ROW. In addition, new medians shall be planted, where space allows. As such, plants shall be selected to ensure that a plant species of similar scale and form, at maturity, replaces the various plants that are removed. In addition, the replacement plants shall have similar aesthetic qualities that the original planted had. For example, oleanders removed as a result of the proposed project shall be replaced by an evergreen shrub that grows to a similar height and spread and flowers.
 - The species list shall include trees, shrubs, and an herbaceous understory of varying heights, as well as both evergreen and deciduous types. Plant variety will increase the effectiveness of the roadside planting areas by providing multiple layers, seasonality, diverse habitat, and reduced susceptibility to disease. Evergreen groundcovers or low-growing plants, such as *Ceanothus* spp., should be used in areas where taller vegetation would potentially cause driving hazards by obscuring site distances.
 - Where space allows, medians and planter strips between commercial parking lots and sidewalks shall also be replanted.
 - Special attention should be paid to plant choices near residences to ensure that species chosen are of an appropriate height and rely on evergreen species to provide year-round light screening from nuisance light.
 - Vegetation shall be planted within the first 12 months following project completion.
 - The design may also incorporate aesthetic features, such as a cobbling swales or shallow detention areas, which can reduce or eliminate the need for irrigation in certain areas.
- **Avoidance and Minimization Measure AES-4.** Landscaping and related appurtenances (e.g., fencing, privacy walls, mailboxes, business signage, or similar features) associated with private properties that are removed or damaged as a result of the project shall be relocated on the property as part of the proposed project. This measure applies to areas within the bounds of private properties only and does not apply to landscaping and related appurtenances that are affected within the State or City ROWs. Where plant replacement is feasible, replacements shall occur in accordance with Avoidance and Minimization Measure AES-3, *Implement Landscape Design Measures*, above. The

City shall compensate parcel owners, where appropriate and to the degree possible, for landscaping and related appurtenances, fencing, and other similar features that cannot be replaced by the project. Replacement would be of value at least equal to that of existing features. To determine compensation for trees, an arborist certified in appraising a tree for the value it adds to that property shall be used to determine monetary compensation for removal of that tree at such locations. Similarly, a person(s) qualified in evaluating landscape features other than trees, such as fencing, privacy walls, or other similar features, shall be used to determine compensation for loss of features at such locations. The results of the assessment of private-property tree and landscape features shall be used to determine the budget needed to implement this measure and shall be included in the costs to construct the proposed project. Before final project acceptance (i.e., prior to final acceptance of design plans and specifications that will be released for construction contract advertisement and award), funding source(s) for replacement of these features shall be in place.

- **Avoidance and Minimization Measure AES-5.** All artificial outdoor lighting and overhead street lighting shall be limited to safety and security requirements and the minimum required for driver safety. Lighting shall be designed using Illuminating Engineering Society's design guidelines and in compliance with International Dark-Sky Association-approved fixtures. All lighting shall be designed by the lighting designer to have minimum impact on the surrounding environment and shall use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Therefore, lights shall be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, or backscatter into the nighttime sky. The lowest allowable wattage shall be used for all lighted areas, and the number of nighttime lights needed to light an area shall be minimized. Light fixtures shall have non-glare finishes that shall not cause reflective daytime glare. Lighting shall be designed for energy efficiency, with daylight sensors or timers with an on/off program. Lights shall provide good color rendering with natural light qualities, with the minimum intensity feasible for security, safety, and personnel access. Lighting, including light color rendering and fixture types, shall be designed to be aesthetically pleasing. LED lighting shall avoid the use of blue-rich white light lamps and use a correlated color temperature that is no higher than 3,000 Kelvin, consistent with the International Dark-Sky Association's Fixture Seal of Approval Program (International Dark-Sky Association 2010a, 2010b, 2015). In addition, LED lights shall use shielding to ensure that nuisance glare and light spill does not affect sensitive residential viewers. Technologies to reduce light pollution evolve over time; design measures that are currently available may help but may not be the most effective means of controlling light pollution once the project is designed. Therefore, all design measures used to reduce light pollution shall use the technologies available at the time of project design to allow for the highest potential reduction in light pollution.

Cumulative Impacts

Construction and Operation

Less-than-significant impact. Cumulative impacts are those resulting from past, present, and reasonably foreseeable future actions, combined with the potential visual impacts of this project. For this project, it has been determined that the following cumulative visual impacts may occur. The combined visual effect of this proposed project and other development projects planned, recently in construction, or currently in construction would change the visual character of the region. The planned development of a 20,000-square-foot commercial development at the intersection of 10th Street West and Avenue K would be built in the near future. Because the development would closely resemble existing commercial developments along 10th Street West and Avenue K, the development would not substantially degrade existing visual quality or quality of the site and its surroundings because scenic resources associated with the project corridor would not be affected.

Other transportation projects (refer to Chapter 2, Table 2-1, for related projects) may also occur nearby that would widen interchange ramps, such as the intersection of SR-14 with Avenue G, Avenue J, Avenue L, and Avenue M. Future transportation projects may improve local connectors, create larger roadways, introduce additional transportation infrastructure, affect adjacent scenic resources, and negatively affect sensitive viewers. Changes associated with the SR-14/Avenue K project would contribute to cumulative visual impacts associated with other transportation projects by affecting associated vegetation, private properties, and viewers. Future development, roadway improvements, and the SR-14/Avenue K project would all contribute to ambient atmospheric lighting and glare in the area by infilling unlit open space areas with lit buildings and roadways, using blue-rich white light LED lighting, and by increasing the amount reflective surfaces that produce glare. The proposed project, however, would only be associated with street lighting, because highway lighting would not greatly increase as a result of the project. However, the project would contribute to visual changes related to planned and/or proposed development in the area because it would alter the existing visual landscape, degrade the visual quality of the project area, and negatively affect highways users and highway neighbors. Implementation of the avoidance and minimization measures above would ensure that the proposed project would only result in an incremental contribution to cumulative impacts and would reduce the project's impact on visual resources to a less than cumulatively considerable level.

II. Agriculture and Forestry Resources	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<p>In determining whether impacts on 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 Department 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 forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

A review of the 2012 Important Farmland Map of Los Angeles County indicates that the project area contains only lands classified as “Urban and Built-Up Land” and “Other Land” (California Department of Conservation 2014a).

The California PRC defines “forest land” under Section 12220(g) as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. The California PRC defines “timberland” as land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. The California Government Code defines “timberland production zone” under Section 51104(g) as an area that has been zoned pursuant to

Sections 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h) of California Government Code Section 51104. The City of Lancaster Municipal Ordinance has no zoning categories related to forest land or timberland.

Impact Analysis

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?*

Construction and Operation

No impact. According to the Farmland Mapping and Monitoring Program maintained by the Division of Land Protection, the project site is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, nor is it designated as Farmland of Local Importance. Therefore, construction and operational impacts associated with the proposed project would not convert such Farmland to nonagricultural use, and no impact would occur.

- b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?*

Construction and Operation

No impact. The project site is not under Williamson Act contract, which is a legal document that obligates a property owner, and any successors of interest, to enforceable restrictions regarding a property's agricultural and compatible open-space use (California Department of Conservation 2016b). Construction and operational activities associated with the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, no impacts would occur.

- 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))?*

Construction and Operation

No impact. The project site is not zoned as forest land, timberland, or timberland zoned Timberland Production. Project areas are zoned as Commercial and Urban Residential. The project site does not contain forest land or timberland. Therefore, construction and operational activities associated with the proposed project would not conflict with existing zoning or cause rezoning of forest land or timberland, and no impact would occur.

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

Construction and Operation

No impact. The project site is not located on or near forest land. As a result, construction and operational activities associated with the proposed project would not result in the loss or conversion of forest land, and no impact would occur.

- 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?*

Construction and Operation

No Impact. There are no agricultural land uses, forest land, or timberland in the vicinity of the proposed project, and the proposed project would not involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to non-agricultural use or forest land to non-forest use. No impact would occur.

Avoidance, Minimization, and Mitigation Measures

No impacts related to agricultural or forestry resources would occur as a result of the proposed project. Therefore, no avoidance, minimization, or mitigation measures are required.

Cumulative Impacts

Construction and Operation

No impact. The proposed project would not result in any impacts on agriculture and forest resources and therefore would not contribute toward a cumulative impact on agriculture or forestry resources.

III. Air Quality	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
When 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The information in this section was derived from the *Air Quality Report for the SR-14 and Avenue K Interchange Project* (Caltrans 2018a).

Environmental Setting

The proposed project would be located in the southern region of the Antelope Valley, within the larger Mojave Desert Air Basin (MDAB, or the Basin). The MDAB encompasses about 21,480 square miles and includes the desert portions of San Bernardino County, Riverside County, Palo Verde Valley, and the cities of Palmdale and Lancaster in the Antelope Valley. The MDAB is an assemblage of mountain ranges interspersed with long, broad valleys that contain dry lakes. The project site is located in the westernmost portion of the MDAB within the jurisdiction of the AVAQMD.

The closest weather station to the project site is the William J. Fox Airfield weather station (station number 044749), which is approximately 5 miles to the northwest. Annual average high and low temperatures at the weather station are 76°F and 47°F, respectively. Total annual precipitation averages seven inches. Precipitation occurs mostly during the winter, with infrequent precipitation during the summer (Western Regional Climate Center 2016) (Caltrans 2018a). The average annual wind speed at the Palmdale Airport monitoring station is 11 miles per hour; the prevailing winds move in a westerly or southwesterly direction (Western Regional Climate Center 2016).

As discussed in the May 2008 AVAQMD Federal 8-Hour Ozone Attainment Plan, the Basin is downwind from the Los Angeles Basin and, to a lesser extent, is the San Joaquin Valley. Winds from both regions are known to transport ozone and ozone precursors into, and through, the Antelope Valley during the summer. Local Antelope Valley emissions contribute to exceedances of both the NAAQS and CAAQS for ozone. However, the Antelope Valley would be in attainment of the standards without the influence of transported air pollution from upwind regions (AVAQMD 2008).

Table 3-1 shows the state and federal attainment statuses for regulated pollutants. The Basin is in nonattainment for ozone at the state and federal levels and for particulate matter 10 microns or less in diameter (PM10) at the state level. Table 3-2 show the ambient background concentrations for monitored pollutants from the Lancaster Station – Division Street (ARB 70301), which is the closest monitoring station to the project location.

Table 3-1. Attainment Status of the Mojave Desert Air Basin

Pollutant	Attainment Status of MDAB
Ozone (O ₃)	Federal: Nonattainment, Severe 15* State: Nonattainment
Carbon Monoxide (CO)	Federal: Unclassified/Attainment State: Attainment
Respirable Particulate Matter (PM10)	Federal: Unclassified State: Nonattainment
Fine Particulate Matter (PM2.5)	Federal: Unclassified/Attainment State: Unclassified/Attainment
Nitrogen Dioxide (NO ₂)	Federal: Unclassified/Attainment State: Attainment
Sulfur Dioxide (SO ₂)	Federal: Unclassified State: Attainment
Lead (Pb)	Federal: Unclassified/Attainment State: Attainment
Sulfate	State Only: Attainment (entire state)
Hydrogen Sulfide (H ₂ S)	State Only: Unclassified
Visibility Reducing Particles (VRP)	State Only: Unclassified
Vinyl Chloride	State Only: Unclassified (entire state)
Sources: ARB 2016; EPA 2016.	
* Attainment designation is based on the 2008 federal 8-hour standard of 75 parts per billion; the Basin is anticipated to be in nonattainment when the designations for the 2015 federal 8-hour ozone standard are determined by EPA in October 2017.	

Table 3-2. Ambient Background Concentrations from the Lancaster Station – Division Street (ARB 70301)

Pollutant Standards	2014	2015	2016
1-Hour Ozone (O₃)			
Maximum Concentration (ppm)	0.101	0.132	0.108
Number of Days Standard Exceeded			
CAAQS 1-hour Standard (> 0.09 ppm)	3	26	3
8-Hour Ozone (O₃)			
State Maximum Concentration (ppm)	0.087	0.103	0.090
National Maximum Concentration (ppm)	0.087	0.103	0.090
National Fourth-highest Concentration (ppm)	0.081	0.100	0.084
Number of Days Standard Exceeded			
CAAQS 8-hour Standard (> 0.070 ppm)	36	82	65
NAAQS 8-hour Standard (> 0.070 ppm)	35	80	60
Carbon Monoxide (CO)			
Maximum Concentration 1-hour Period (ppm)	1.5	1.5	2.6
Maximum Concentration 8-hour Period (ppm)	1.1	1.3	1.5
Number of Days Standard Exceeded			
NAAQS 8-hour Standard (\geq 9 ppm)	0	0	0
CAAQS 8-hour Standard (\geq 9.0 ppm)	0	0	0

Pollutant Standards	2014	2015	2016
NAAQS 1-hour Standard (≥ 35 ppm)	0	0	0
CAAQS 1-hour Standard (≥ 20 ppm)	0	0	0
Nitrogen Dioxide (NO₂)			
Maximum 1-hour Concentration (ppm)	0.0519	0.0418	0.0488
Annual Average Concentration(ppm)	0.0080	N/A	0.0080
Number of Days Standard Exceeded			
CAAQS (0.18 ppm)	0	0	0
NAAQS (0.100 ppm)	0	0	0
Suspended Particulates (PM₁₀)			
Maximum State 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
Maximum National 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	131.5	123.8	145.0
State Annual Average Concentration (CAAQS = 20 $\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
Number of Days Standard Exceeded (Estimated)			
CAAQS 24-hour Standard ($> 50 \mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
NAAQS 24-hour Standard ($> 150 \mu\text{g}/\text{m}^3$)	0	0	0
Suspended Particulates (PM_{2.5})			
Maximum National 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	42.0	10.4	64.8
24-hour Standard 98 th Percentile ($\mu\text{g}/\text{m}^3$)	27.9	N/A	20.5
National Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	7.2	N/A	7.7
State Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
Number of Days Standard Exceeded (Estimated)			
NAAQS 24-hour Standard ($> 35 \mu\text{g}/\text{m}^3$)	1	0	2

Source: ARB 2017. Data compiled by ICF.

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; $>$ = greater than; \geq = greater than or equal to; CAAQS = California Ambient Air Quality Standards; mg/m^3 = milligrams per cubic meter; n/a = data not available; NAAQS = National Ambient Air Quality Standards; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; ppm = parts per million;

Impact Analysis

Would the project:

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

Construction and Operation

Less-than-significant impact. The project lies in the southern portion of the Basin, which is under the jurisdiction of AVAQMD. AVAQMD is required, pursuant to the federal Clean Air Act (CAA), to reduce emissions of criteria pollutants for which the Basin is in nonattainment. AVAQMD's most recent plan to achieve air quality standards is the AVAQMD Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area), adopted by the AVAQMD Governing Board on May 20, 2008. The 2008 plan outlines comprehensive control strategies to meet the 8-hour federal ozone standard for the portion of the Western Mojave Desert non-attainment area by 2019. As discussed in the 2008 plan, the Antelope Valley is downwind from the Los Angeles basin and, to a lesser extent, is downwind from the San Joaquin Valley. Prevailing winds transport ozone and ozone precursors from both regions into and through the Antelope Valley during the summer ozone season. Although local Antelope Valley emissions contribute to exceedances of both the state and federal standards for ozone, the Antelope Valley would be in attainment for both standards without the influence of this transported air pollution from upwind regions. Nevertheless, AVAQMD has an enhanced nonattainment pollutant monitoring program and requires reasonably available control technology. Ozone is the only pollutant for which the Basin is in

federal nonattainment. AVAQMD is in the process of updating its 8-hour ozone attainment plan as a result of updated federal standards.

In addition to its ozone attainment plan, AVAQMD has published its *CEQA and Federal Conformity Guidelines* (2016), which provide guidance to preparers of environmental documents for any project within AVAQMD jurisdiction as well as the preferred analysis approach. AVAQMD “has dedicated resources to reviewing projects to ensure that they will not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan” (AVAQMD 2016:1). As such, the significance thresholds contained within the AVAQMD *CEQA and Federal Conformity Guidelines* are viewed as the standards against which projects are evaluated to determine their consistency with the regional air quality plan.

The project would comply with all applicable AVAQMD requirements, such as Rule 403 (Fugitive Dust Control) and Caltrans standard specifications for dust suppression. Operation of the proposed project would not involve trip generation and project operation would not result in meaningful increases in criteria pollutants that would exceed the AVAQMD thresholds of significance. Given that the project would not exceed significance thresholds for construction and operation, the proposed project is considered consistent with the 2008 AVAQMD Federal 8-Hour Ozone Attainment Plan and would not conflict with or obstruct its implementation.

The proposed project is not subject to the transportation conformity determination requirement because it would not require federal funding or approval to implement. The project is listed in the recent 2016 RTP/SCS under project ID 1AL04 and in the 2017 FTIP under project ID LA0G929, both of which were determined to be in conformity with the State Implementation Plan and, by extension, the requirements of the, CAA. Therefore, impacts would be less than significant.

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

As shown in Table 3-2, the project site is within an area where state and federal air quality standards are often exceeded for ozone. AVAQMD has promulgated daily and annual significance thresholds to help the Basin attain federal and state air quality standards and protect public health.

Construction

Less-than-significant impact. Construction of the proposed project would result in short-term emissions of criteria pollutants. Mass daily emissions resulting from combustion exhaust and fugitive dust (PM10 and PM2.5) emissions were estimated using the Road Construction Emissions Model (version 8.1.0) and project-specific details derived from the project description and other sources. Fugitive PM10 and PM2.5 emissions estimates take into account compliance with AVAQMD Rule 403.

An estimate of construction-related regional emissions is shown in Table 3-3. Due to the short-term duration of construction activities and that all applicable AVAQMD rules would be followed, construction-period impacts related to potential violations of any air quality standard would be less than significant.

Table 3-3. Estimate of Regional Construction Emissions (pounds per day)

Source	ROG	NO _x	CO	SO _x	PM10 ^a	PM2.5 ^a
Grubbing/Land Clearing	1	14	10	< 1	11	3
Grading/Excavation	7	76	55	< 1	14	5
Drainage/Utilities/Sub-grade	4	40	34	< 1	12	4
Paving	2	17	18	< 1	1	1
Maximum Daily ^b	14	147	117	< 1	38	13

Source: Road Construction Model emissions modeling by ICF 2017.

^a PM10 and PM2.5 emissions estimates assume compliance with AVAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.

^b The maximum daily emissions assumes overlap between the grading/excavation, drainage/utilities/sub-grade, and paving phases, and therefore the maximum emissions from each phase are summed.

ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides

Operation

Less-than-significant impact. As discussed in the *State Route 14 and Avenue K Interchange Project Air Quality Report*, prepared for the proposed project, no quantification of operational emissions of criteria pollutants and their precursors was undertaken because the project would reduce congestion and involve negligible trip redistribution; it would not generate additional trips. This suggests that there would be reductions in emissions or negligible increases in emissions relative to the No-Build Alternative.

Table 3-4 shows the intersection delay and LOS data for study area intersections under the 2020 and 2040 Build Alternative and the No-Build Alternative. The table indicates that all study area intersections would perform with greater, or at least equal, efficiency under the Build Alternative compared to the No-Build Alternative. Because overall delay would be reduced and traffic would flow more efficiently, reductions or negligible increases in operational emissions would occur.

Table 3-4. Opening Year (2020) and Horizon Year (2040) Peak-Hour Intersection Delay and Level of Service

Intersection	Peak Hour	No-Build Alternative		Build Alternative		
		Delay (seconds)	LOS	Delay (seconds)	LOS	
Opening Year (2020)						
1	15 th Street West and Avenue J-8	AM	45.8	D	45.8	D
		PM	31.5	C	31.5	C
2	30 th Street West and Avenue K	AM	27.8	C	27.8	C
		PM	30.5	C	30.5	C
3	20 th Street West and Avenue K	AM	45.2	D	45.2	D
		PM	42.2	D	42.2	D
4	17 th Street West and Avenue K	AM	25	C	24.4	C
		PM	25	C	24.0	C
5	SR-14 southbound Ramps and Avenue K	AM	6.3	A	5.3	A
		PM	11.5	B	7.9	A
6	SR-14 northbound Ramps/15 th Street West and Avenue K	AM	49.2	D	28.5	C
		PM	39.7	D	28.5	C
7	12 th Street West and Avenue K	AM	22.6	C	21.3	C
		PM	25.3	C	24.1	C
8	10 th Street West and Avenue K	AM	36.7	D	36.7	D
		PM	39.8	D	39.8	D
9	15 th Street West and Driveway	AM	—	—	12.1	B
		PM	—	—	19.1	B

Intersection	Peak Hour	No-Build Alternative		Build Alternative		
		Delay (seconds)	LOS	Delay (seconds)	LOS	
Horizon Year (2040)						
1	15 th Street West and Avenue J-8	AM	78.1	E	78.1	E
		PM	34.2	C	34.2	C
2	30 th Street West and Avenue K	AM	28.4	C	28.4	C
		PM	31.9	C	31.9	C
3	20 th Street West and Avenue K	AM	46.6	D	46.6	D
		PM	44.3	D	44.3	D
4	17 th Street West and Avenue K	AM	29.6	C	29.0	C
		PM	51.3	D	50.1	D
5	SR-14 southbound Ramps and Avenue K	AM	9.1	A	6.9	A
		PM	15.3	B	9.7	A
6	SR-14 northbound Ramps/15 th Street West and Avenue K	AM	52.1	D	29.4	C
		PM	46.1	D	30.4	C
7	12 th Street West and Avenue K	AM	22.4	C	20.7	C
		PM	24.9	C	23.2	C
8	10 th Street West and Avenue K	AM	37.6	D	37.6	D
		PM	42.1	D	42.1	D
9	15 th Street West and Driveway	AM	—	—	12.2	B
		PM	—	—	18.9	B

Source: Caltrans 2017b.

Carbon Monoxide Hotspots

Less-than-significant impact. Consistent with the *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol) (Garza et al. 1997), a screening procedure was undertaken to assess the potential for the project to result in carbon monoxide (CO) hotspots. Although the proposed project would not require a federal action and therefore is not subject to federal transportation conformity requirements or a formal CO hotspot analysis, the CO Protocol screening procedure is used as the basis for determining impacts under CEQA. Because there would be no change in trip redistribution under the Build Alternative compared to the No-Build Alternative, there would be no substantive change in local CO emissions or concentrations at any intersection location.

The CO Protocol includes two flowcharts that illustrate when a detailed CO analysis needs to be prepared. The first flowchart, Figure 1 of the CO Protocol (provided in the *State Route 14 and Avenue K Interchange Project Air Quality Report*), is used to ascertain the CO modeling requirements for new projects. The questions (shown in the first flowchart) are relevant to the project. The answers to those questions are as follows:

3.1.1: Is the project exempt from all emissions analyses?

Response: No. Although the project is not subject to the project-level conformity determination requirement, it is not considered an exempt project because it would increase roadway capacity on an important local arterial. As shown in Table 1 of the CO Protocol, the proposed project does not fall into a project category that is exempt from all emissions analysis (proceed to 3.1.2).

3.1.2: Is the project exempt from regional emissions analyses?

Response: No, the project is not exempt from a regional emissions analysis. As shown in Table 2 of the CO Protocol, the proposed project does not meet the criteria of any of the project categories that have been identified as exempt from regional emissions analysis (proceed to 3.1.3).

3.1.3: Is the project locally defined as regionally significant?

Response: Yes, the proposed project is considered a regionally significant transportation project, according to 40 Code of Federal Regulations (CFR) 93.101 (proceed to 3.1.4).

3.1.4: Is the project in a federal attainment area?

Response: No, the proposed project is located in the MDAB, which is a federal severe nonattainment area for ozone (see Table 3-1). If a project area is not classified as an attainment area for all transportation-related criteria pollutants, the project is subject to a regional conformity determination (proceed to 3.1.5).

3.1.5: Is there a currently conforming RTP and TIP?

Response: Yes, the 2016–2040 RTP/SCS and 2017 FTIP (proceed to 3.1.6).

3.1.6: Is the project included in the regional emissions analysis supporting the currently conforming RTP and TIP?

Response: Yes, the project is identified in the 2016–2040 RTP/SCS and 2017 FTIP under Project IDs 1AL04 and LA0G929, respectively. Thus, it has been included in the regional emissions analysis. The description of the Build Alternative in the 2017 FTIP (Amendment 15) is consistent with the project as currently proposed, and the description for Amendment 3 to the 2016–2040 RTP/SCS is in the process of being revised to describe the project as currently proposed (proceed to 3.1.7).

3.1.7: Has the project design concept and/or scope changed significantly from that in the regional analysis?

Response: No, the project design concept has not changed significantly from that in the regional analysis. A revised version of the project description is included in Amendment 15 to the SCAG 2017 FTIP under the same project ID as at present, LA0G929. Such changes are anticipated to result in regional emissions reductions because they would increase the operational efficiency of Avenue K and the SR-14 ramps (proceed to 3.1.9).

3.1.9: The conclusion from this series of questions and answers is that the project needs to be examined for its local air impacts (proceed to Section 4, Figure 3, of the CO Protocol).

On the basis of the answers to the first flowchart, a second flowchart, Figure 3 of the CO Protocol, is used to determine the level of local CO effect analysis required for the project.

The questions that are applicable to the project are in the second flowchart, and the answers to those questions are as follows:

Level 1: Is the project in a CO nonattainment area?

Response: No, the MDAB is classified as an unclassified/attainment area for the federal CO standards (Table 3-1).

Level 1: Was the area redesignated as an attainment area after the 1990 Clean Air Act?

Response: No, the Mojave Desert Air Basin was not redesignated as an attainment area after the 1990, CAA (proceed to Level 7).

Level 7: Does project worsen air quality?

Response: No. According to Section 4.7.1 of the CO Protocol, the following criteria provide a basis for determining if a project has potential to worsen localized air quality:

- *The project significantly increases the percentage of vehicles operating in the cold-start mode. Increasing the number of vehicles in cold-start mode by as little as 2 percent should be considered potentially significant.*

The proposed project would not involve direct development of land, nor would it make undeveloped land more accessible such that an increase in the percentage of vehicles operating in cold-start mode would occur. The proposed project would modify SR-14 ramps and widen the existing Avenue K roadway. However, these improvements would not result in changes to the percentage of vehicles operating in cold-start mode because no new parking would be associated with the proposed project following its construction.

- *The project significantly increases traffic volumes. Increases in traffic volumes in excess of 5 percent should be considered potentially significant. Increasing the traffic volume by less than 5 percent may still be potentially significant if there is also a reduction in average speeds.*

According to the October 2017 *Traffic Operations Analysis Report* prepared for the proposed project, there would be no difference in the traffic volumes between the Build Alternative and No-Build Alternative at the 2020 Opening Year and 2040 Horizon Year.

- *The project worsens traffic flow. For uninterrupted roadway segments, a reduction in average speeds (within a range of 3 to 50 miles per hour) should be regarded as worsening traffic flow. For intersection segments, a reduction in average speed or an increase in average delay should be considered a worsening of traffic flow.*

As shown previously in Table 3-4, under the 2020 Opening Year and 2040 Horizon Year Build Alternative conditions, the operational efficiency of study area intersections would improve during peak hours relative to the No-Build Alternative. Because traffic operations are most constrained during peak hours, the improved efficiency of study area intersections would also improve traffic flow during off-peak periods.

As previously indicated, the proposed project was evaluated using the CO Protocol. Through this screening process, it was determined that the Build Alternative is not expected to result in a new or more severe exceedance of either the state or federal standards.

Particulate Matter Hotspots

Less-than-significant impact. Although most projects generate construction-related particulate emissions, construction activities that last fewer than 5 years are considered temporary impacts under the U.S. Environmental Protection Agency (EPA) transportation conformity rule and are not required to undergo hot-spot review. It is expected that construction of the proposed project would be completed in approximately 12 months. As such, hot-spot review is limited to project operation. The proposed project is not subject to project-level conformity requirements because no federal action is required; the same process is used as the basis for fulfilling the requirements of CEQA.

EPA updated its guidance document titled *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* in November 2015. A project-level PM2.5 and PM10 conformity review, based on this most recent EPA guidance, is provided below.

EPA specifies in 40 CFR 93.123(b)(1) that only “projects of air quality concern” are required to undergo a PM2.5 and PM10 hot-spot analysis. EPA defines projects of air quality concern as certain highway and transit projects that involve significant levels of diesel traffic or any other project that is identified by the PM2.5 State Implementation Plan as a localized air quality concern. A comparison of the proposed project to projects of air quality concern, as defined by 40 CFR 93.123(b)(1), is provided below:

1. **New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.** The proposed project would widen the existing Avenue K roadway and modify the SR-14 ramps. Although the project would connect vehicles to and from SR-14, project implementation would not involve any new points of origin or destinations for truck trips. Furthermore, the October 2017 *Traffic Operations Analysis Report* prepared for the proposed project indicated that there would be no difference in traffic volumes between the Build Alternative and No-Build Alternative at the 2020 Opening Year and 2040 Horizon Year. Therefore, no increase in the number of diesel vehicles would occur as a result of project implementation. Given that the proposed project would not result in new origin or destination points and would not create new access routes to undeveloped land, significant growth in truck traffic volumes would not occur.
2. Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project. As shown in Table 3-4, only one intersection is projected to operate at LOS D or worse in 2020 (10th Street West and Avenue K). Under the 2040 Horizon Year Build Alternative, four intersections are projected to operate at LOS D or worse (15th Street West and Avenue J-8, 20th Street West and Avenue K, 17th Street West and Avenue K, and 10th Street West and Avenue K). Under the Build Alternative at Opening Year 2020 and Horizon Year 2040, delay at these intersections would be less than what would be experienced under the No-Build Alternative. Therefore, no increase in delay for vehicles (including diesel-fueled vehicles) would result from project implementation.
3. **New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.** The proposed project has no bus or rail terminal component, nor would it alter travel patterns to or from any existing bus or rail terminal.
4. **Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.** The proposed project would not expand any bus terminal, rail terminal, or related transfer point that would increase the number of diesel vehicles congregating at any single location.
5. **Projects in or affecting locations, areas, or categories of sites that are identified in the PM2.5- or PM10-applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.** The project site is not in or affecting locations, areas, or categories of sites that are identified in a PM10 or PM2.5 implementation plan. The immediate project area is not considered to be a site of violation or possible violation.

The discussion provided above indicates that the proposed project would not be considered a project of air quality concern as defined by 40 CFR 93.123(b)(1). Therefore, quantitative PM2.5 and PM10 hot-spot evaluations are not required. It is unlikely that the proposed project would generate new air quality violations for PM2.5 or PM10.

Supplemental Analysis of Re-entrained Fugitive Dust

Less-than-significant impact. Fugitive dust emissions from vehicle travel on paved roads (i.e., re-entrained dust) would occur within the project study area. However, because traffic volumes under the Build Alternative would not differ from those under the No-Build Alternative, negligible differences in re-entrained dust would result. As such, fugitive dust emissions would not be attributable to the project.

Mobile Source Air Toxics

Less-than-significant impact. For the Build Alternative, the amount of mobile source air toxics (MSATs) emitted would be proportional to vehicle miles traveled (VMT), assuming that other variables, such as fleet mix, are the same as under the No-Build Alternative. Peak-hour intersection LOS indicates that the operational efficiency of intersections in the study area under the Build Alternative in 2020 would be the same as, or better than, operational efficiency under the No-Build Alternative in 2020 (see Table 3-4). Because no deterioration in roadway operation would occur as a result of project implementation, no meaningful difference in VMT is anticipated.

Any increase in VMT would lead to higher MSAT emissions for the Build Alternative, along with a corresponding decrease in MSAT emissions along parallel routes. Any emissions increase would be offset somewhat by lower MSAT emissions rates resulting from increased speeds. According to the EPA MOVES2014 model, emissions of all of the priority MSATs decrease as speed increases. Because VMT under the Build Alternative would be nearly the same as it would be under the No-Build Alternative, it is expected that there would be no appreciable difference in overall MSAT emissions between the Build and No-Build Alternatives. Also, regardless of the alternative chosen, emissions would most likely be lower than present levels in the design year as a result of EPA's national control programs, which are projected to reduce annual MSAT emissions by more than 90 percent between 2010 and 2050 (FHWA and EPA 2016). Local conditions may differ in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

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

Construction and Operation

Less-than-significant impact. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. The study area for cumulative effects on air quality is the Basin. The Basin experiences chronic exceedances of state and federal ambient air quality standards for ozone as a consequence of its location downwind from both the Los Angeles and Central Valley regions, as well as from past and present projects within Basin boundaries. The Basin is subject to continued nonattainment status by reasonably foreseeable future projects. These nonattainment conditions within the region are considered cumulatively significant. AVAQMD has prepared an attainment plan in order to demonstrate that the portion of the Basin under its jurisdiction will comply with state and federal standards for ozone by 2019.

The proposed project would comply with AVAQMD rules and regulations, including Rule 403 (Fugitive Dust Control) and Rule 1108 (Cutback Asphalt). Per AVAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements would also be imposed on all projects Basin-wide, which would include all nearby projects.

For the reasons identified above (project consistency with the regional air quality management plan, compliance with AVAQMD rules, and the CEQA requirement that related projects mitigate impacts), project emissions would not be cumulatively considerable during short-term construction or long-term operation.

Naturally Occurring Asbestos

The proposed project would be located six miles northeast of the Amargosa #1 site, which is the nearest naturally occurring asbestos site to the project (Van Gosen and Clinkenbeard 2011). Because construction of the proposed project would not disturb this location or other asbestos sites in the region, no impacts related to naturally occurring asbestos would occur.

d. Expose sensitive receptors to substantial pollutant concentrations?

AVAQMD considers residences, schools, daycare centers, playgrounds, and medical facilities to be sensitive receptor land uses. The closest sensitive receptors to the project site are the three residences adjacent to the project site at the intersection of Avenue K and 18th Street West.

Construction

Less-than-significant impact. During the construction period, which is scheduled to last approximately 12 months, there would be short-term generation of pollutants from construction vehicles and equipment. However, the 12-month construction period is much shorter than the assumed 30-year exposure period used to estimate lifetime cancer risks recommended by the California Office of Environmental Health Hazard Assessment. Furthermore, given the linear nature of the proposed project, sensitive receptors would be exposed to pollutants for a small portion of the total construction period, as equipment would not be operated at a particular location along the alignment for an extended period of time. The diesel particulate matter generated from construction equipment would be sporadic, transitory, and short term in nature. Therefore, the project would not expose receptors to acute and/or chronically hazardous toxic air contaminant pollutants. Impacts related to short-term construction toxic air contaminant emissions would be less than significant.

Operation

Less-than-significant impact. In its *CEQA and Federal Conformity Guidelines*, AVAQMD includes a threshold of significance recommending that major transportation projects within 1,000 feet of a sensitive receptor land use evaluate cancer and non-cancer health risks associated with the project (AVAQMD 2016). However, given that the October 2017 *Traffic Operations Analysis Report* prepared for the proposed project indicated that there would be no change in vehicle volumes under the Build Alternative, exposure of sensitive receptors would be no different from No-Build conditions. Operation of the proposed project would place vehicles marginally closer to sensitive receptors relative to existing conditions, but the change would be negligible and would be more than offset by improvements in pollutant control technologies of new vehicles as well as the retirement of older, higher-polluting vehicles. Furthermore, the project would result in more efficient overall roadway operations within the project limits relative to the No-Build scenario, and implementation would not result in particulate matter or CO hotspots. Therefore, impacts of the proposed project related to exposing sensitive receptors to substantial pollutant concentrations would be less than significant.

e. Create objectionable odors affecting a substantial number of people?

Construction and Operation

Less-than-significant impact. According to the California Air Resources Board (ARB), land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (ARB 2005).

The proposed project does not include any uses identified by ARB as being associated with odors and therefore would not produce objectionable odors associated with project operation. Odors resulting from construction of the proposed project are not likely to affect a substantial number of people because construction activities usually do not emit offensive odors. Potential odor emitters during construction activities include asphalt paving. AVAQMD Rule 1108 limits the amount of volatile organic compound emissions from cutback asphalt. Given mandatory compliance with AVAQMD rules, no construction activities or materials are proposed that would create a significant level of objectionable odors. As such, potential impacts during short-term construction would be less than significant.

Avoidance, Minimization, and Mitigation Measures

No avoidance, minimization, or mitigation measures related to air quality are required.

Cumulative Impacts

Construction and Operation

Please see discussion in Item III.c above.

IV. Biological Resources	Significant and Unavoidable Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The information in this section was derived from the *Natural Environment Study (Minimal Impacts), State Route 14 and Avenue K Interchange Project* (Caltrans 2018c).

ICF and GPA biologists conducted a comprehensive literature review to identify the project setting and potential special-status biological resources that may be found on the project site or within the project vicinity (GPA 2016; ICF 2017; Caltrans 2018c). The literature review was conducted in July 2015, July 2016, August 2017, and May 2018. Pertinent sources reviewed were:

- California Natural Diversity Database (California Department of Fish and Wildlife [CDFW] 2018)
- California Native Plant Society Inventory of Rare and Endangered Plants (California Native Plant Society 2018)
- CDFW Biogeographic Information and Observation System Habitat Connectivity Viewer (CDFW 2015)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (USFWS 2015)

- USFWS Information for Planning and Conservation (IPaC) species list (USFWS 2018)
- U.S. Department of Agriculture Natural Resources Conservation Service Soil Survey Geographic Database (USDA 2016)
- U.S. Geological Survey Lancaster West, California, 7.5-minute topographic quadrangle map (USGS 1974) and the eight surrounding quadrangles (Del Sur, Lancaster East, Ritter Ridge, Sleepy Valley, Palmdale, Little Buttes, Rosamond, and Rosamond Lake)
- Aerial photography dated April 11, 2015 (Google, Inc. 2015)

Environmental Setting

The project site occurs within a densely populated urban area surrounded by residential and commercial development. Open vacant lots are scattered throughout the study area and consist mostly of ruderal lands with some areas of highly disturbed native vegetation communities.

Soils

Six soil types are present within the project site (USDA 2016). These soil types include:

- Cajon loamy sand, 0 to 2 percent slopes
- Hesperia fine sandy loam, 0 to 2 percent slopes
- Rosamond fine sandy loam
- Sunrise sandy loam
- Sunrise sandy loam, shallow
- Tray sandy loam, saline-alkali

Vegetation

The project site is composed primarily of developed and ruderal areas, with scattered areas of highly disturbed native rubber rabbitbrush scrub and highly disturbed native desert saltbush scrub. Land mapped as developed includes roads, residential structures, and areas used for commercial purposes. Ruderal areas are associated with vacant lots surrounded by developed lands. These areas are dominated by nonnative and native annual and perennial species such as rabbitsfoot beard grass (*Polypogon monspeliensis*), Mediterranean schismus (*Schismus barbatus*), shortpod mustard (*Hirschfeldia incana*), tumble mustard (*Sisymbrium altissimum*), and prickly Russian thistle (*Salsola tragus*). Disturbed rubber rabbitbrush scrub on the project site is an open to continuous shrubland dominated by rubber rabbitbrush (*Ericameria nauseosa*) with an understory consisting primarily of nonnative grasses. The disturbed desert saltbush scrub present consists of widely spaced shrubs, primarily spiny saltbush (*Atriplex confertifolia*), in high-salinity soils.

Special-Status Species

The literature search determined that some special-status species have been documented in close proximity to the project site. Burrowing owl (*Athene cunicularia*) and silvery legless lizard (*Anniella pulchra pulchra*) were observed within approximately 2 miles of the project site in 2004 and 2005, respectively. No other special-status species have been documented nearby in the last 20 years (CDFW 2017).

Nesting Birds

The project site has some shrubby vegetation and ornamental trees. This vegetation, along with the SR-14 overpass and bare ground, have the potential to host nesting birds.

Impact Analysis

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?*

Construction

Less-than-significant impact with Mitigation Incorporated. The literature review conducted for the project site resulted in 44 special-status plant and animal species and six habitats and natural communities of special concern within the vicinity of the biological study area (BSA). The BSA includes the project impact area (PIA) and a 300-foot buffer.

Listed and Non-listed Special Status Plants

Of the 21 special-status plant species within the vicinity of the BSA, none were determined to have a reasonable potential to occur within the BSA. This conclusion is based on these species' requirements for a combination of soils, hydrology, habitats, elevation range, and/or disturbance tolerance, along with consideration of the site conditions and observed resources. Avoidance and Minimization Measures **BIO-1** and **BIO-2** would ensure that direct impacts would occur only within the PIA and that direct and indirect impacts on special-status plant species would not occur. Impacts on special-status plants are considered less than significant.

Listed and Non-listed Special Status Wildlife

Of the 23 special-status wildlife species analyzed for potential to occur within the BSA, three of these species—burrowing owl, silvery legless lizard, and coast horned lizard (*Phrynosoma blainvillii*)—were determined to have habitat present within the BSA. Habitat for silvery legless lizard and coast horned lizard is present in the form of low-quality habitat fragments near the edge of the BSA (outside of the PIA); however, both species have a very low potential for occurrence. No work would be conducted within these fragments; all work would be contained within highly disturbed and developed areas of the PIA. Impacts within the PIA are not anticipated to affect silvery legless lizard or coast horned lizard directly or indirectly; as such, no further surveys or avoidance and minimization measures are necessary for these species. Due to the presence of suitable habitat, burrowing owl has a reasonable potential to occur in the BSA and is discussed below.

Burrowing Owl

Burrowing owl is a CDFW Species of Special Concern and requires habitat with three basic attributes: open, well-drained terrain; short, sparse vegetation; and underground burrows or burrow surrogates. It occurs in grasslands, lowland scrub, agricultural lands (particularly rangelands), and some artificial open areas as a year-long resident. No burrowing owls or burrowing owl sign were detected during the reconnaissance site visits conducted by GPA and ICF. However, potential burrowing owl habitat was observed at three locations within the BSA:

- In the disturbed rabbitbrush scrub between 15th Street West (between 17th Street West and West Avenue K) and SR-14

- In the ruderal and disturbed rabbitbrush scrub between Youngblood Place and SR-14
- In the flood control channel that crosses east to west below 15th Street West and between North Avenue K and South Avenue J-8

A focused burrow survey was not completed for the study area, so it is unknown if suitable burrows are present. Until a burrow survey can be completed with complete access to the study area, suitable habitat is assumed to be present. If burrowing owls are utilizing burrows in the site or adjacent areas, the proposed project may have direct and/or indirect impacts on the species. However, the removal of the narrow patches of habitat in the PIA would not be biologically important to the burrowing owl because the habitat in the PIA is largely isolated and highly disturbed. In addition, the implementation of Avoidance, Minimization, and Mitigation Measures **BIO-1** through **BIO-9** would ensure that direct take and indirect impacts would not occur on burrowing owls as a result of the proposed project.

Operation

No impact. No impacts would occur under operation of the proposed project, and no avoidance and minimization measures for operation would be required.

- b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Construction

No impact. No sensitive natural communities occur within or adjacent to the BSA. Approximately 1.34 acres were delineated in the BSA that meet the one-parameter threshold for CDFW jurisdictional vegetated riparian streambed. This area occurs north of Avenue K, along the northeast side of SR-14. All features identified within the BSA during the jurisdictional delineation occur outside the PIA. Direct or indirect impacts on these features would not occur as a result of construction of the project. Although no impacts would occur, implementation of Avoidance and Minimization Measures **BIO-1** and **BIO-2** would ensure that direct and indirect impacts are limited to the PIA and do not occur on jurisdictional features outside of the PIA.

Operation

No impact. No impacts would occur under operation of the proposed project, and no avoidance and minimization measures for operation would be required.

- 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, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?*

Construction

No impact. Approximately 0.07 acre of wetland waters of the U.S. was delineated in the BSA that is potentially jurisdictional under the U.S. Army Corps of Engineers and Regional Water Quality Control Board (RWQCB). Approximately 1.34 acres were delineated in the BSA that meet the one-parameter threshold for CDFW jurisdictional vegetated riparian streambed. This area occurs north of Avenue K, along the northeast side of SR-14. Additionally, there is a concrete-lined drainage south of Avenue K, west of SR-14, that was determined by GPA to be non-jurisdictional (GPA 2016). However, all features and wetlands identified within the BSA during the jurisdictional delineation occur outside the PIA. Direct or indirect impacts on these drainages would not occur as a result of the construction of the project.

Although no impacts would occur, implementation of Avoidance and Minimization Measures **BIO-1** and **BIO-2** would ensure that direct and indirect impacts are limited to the PIA and do not occur on jurisdictional features outside of the PIA.

Operation

No impact. No impacts would occur under operation of the proposed project, and no avoidance and minimization measures for operation would be required.

- 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?*

Construction

Less-than-significant-impact. The BSA is primarily developed and the water features present do not provide fish habitat. However, the disturbed rubber rabbitbrush scrub, disturbed desert saltbush scrub, and landscape vegetation associated with development provide habitat for migratory birds protected by the Migratory Bird Treaty Act and the California Fish and Game Code. Several species of birds detected during the site visit, including house finch (*Haemorhous mexicanus*) and mourning dove (*Zenaida macroura*), may use the BSA for nesting. Shrubs, ornamental trees, the SR-14 overpass, and bare ground are suitable for nesting birds. Therefore, there is potential for impacts on nesting birds if vegetation is removed or activities result in high levels of noise or vibration during nesting bird season (generally defined as February 1 through September 1). Avoidance and Minimization Measure **BIO-9** includes a measure to conduct nesting bird surveys during the construction phase that overlaps with the nesting bird season. Implementation of Avoidance and Minimization Measure **BIO-9** would ensure that impacts on nesting migratory birds would be avoided and thus reduce the impacts to a less-than-significant level.

Wildlife Movement: The proposed PIA and surrounding areas are primarily developed and fragmented by public infrastructure. The site is not within or adjacent to any wildlife movement corridors, nor does the site support suitable vegetation and/or habitat that would provide substantial wildlife movement opportunities. In addition, any potential wildlife movement through the site is limited due to presence of heavy traffic. Current conditions also preclude use of the site as a wildlife nursery. The proposed project would not decrease the potential for the site to be used by wildlife.

Raptor Foraging: The proposed PIA is currently developed as a roadway. Furthermore, the proposed project impacts would be predominantly within the current developed roadway. The adjacent areas that would be affected are minimal and not suitable for foraging raptors due to their proximity to the heavy utilized roadway and limited vegetation. The proposed project would not result in any substantial loss of raptor foraging habitat.

Operation

No impact. The proposed project consists of roadway widening and other operational improvements. There are no components of the project that, once operational, would affect the conditions of migratory wildlife, including nesting birds, within the project site. Therefore, no avoidance and minimization measures for operation would be required.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Construction

No impact. There are no tree species present in the BSA that are covered by the Los Angeles County Protected Tree Ordinance. The proposed project would be located outside of a Significant Ecological Area (SEA). The San Andreas SEA is the nearest SEA, approximately 5 miles southwest of the project site. Therefore, the project would not be in conflict with the Los Angeles County General Plan. The proposed project does not include the removal of Joshua trees (*Yucca brevifolia*) or California junipers (*Juniperus californica*) and the vegetation that would be removed is primarily limited to ruderal, rabbitbrush, and saltbush vegetation. Because of the highly developed nature of the project site, the project site does not contain any land that may qualify as significant desert wash areas. Furthermore, no desert wash habitat was mapped within the project site. The removal of vegetation is not in conflict with the *City of Lancaster General Plan 2030* and no protected significant habitat would be affected. Therefore, no impacts during construction would occur.

Operation

No impact. The proposed project consists of roadway widening and other operational improvements. There are no components of the project that, once operational, would affect any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance within the project area. Therefore, no avoidance and minimization measures for operation would be required.

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?

Construction and Operation

No impact. The project site is not located within any adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; therefore, conflicts with plan provisions would not occur. No impacts are anticipated.

Avoidance, Minimization, and Mitigation Measures

- **Avoidance and Minimization Measure BIO-1: Delineation of Project Limits.** Construction limits shall be demarcated by construction personnel within 5 days prior to the initiation of construction. Construction personnel shall strictly limit their activities, vehicles, equipment, and construction materials to the project footprint and designated staging areas and routes of travel. The construction area(s) shall be the minimal area necessary to complete the proposed project and shall be specified in the construction plans. Construction personnel shall be instructed that their activities are restricted to construction areas.
- **Avoidance and Minimization Measure BIO-2: Best Management Practices for Erosion Control and Water Pollution.** Applicable BMPs shall be implemented. These shall include, but are not limited to:
 - Active construction areas shall be watered regularly to control dust and minimize impacts on adjacent vegetation.
 - Water pollution and erosion control plans shall be developed and implemented in accordance with CDFW requirements.

- Equipment storage, fueling, and staging areas shall be located at sites with minimal risks of direct drainage into surface waters. Project-related spills of hazardous materials shall be reported to appropriate entities including, but not limited to, the County and/or RWQCB, and cleaned up immediately. Contaminated soils shall be removed to approved disposal areas.
- To avoid attracting wildlife to the project site, the construction area shall be kept as clean of debris as possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the site(s).
- Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds before mobilizing to the site and before leaving the site during the course of construction. Cleaning of equipment shall occur at least 300 feet from Environmentally Sensitive Area fencing in a designated area.
- Any exotic species that are removed during construction shall be properly handled to prevent sprouting or regrowth.
- Trucks carrying loads of vegetation removed from the project site shall be covered; vegetation shall be disposed of in accordance with applicable laws and regulations.
- Disturbed areas shall be restored to pre-project conditions. Any planned revegetation or erosion control activities as part of restoration shall be completed using non-invasive species.
- Appropriate firefighting equipment (e.g., extinguishers, shovels, water trucks) shall be available on the project site during all phases of project construction to help minimize the chance of construction-related wildfires; personnel shall be trained in the use of such equipment. Shields, protective mats, and/or other fire-preventative methods shall be used during grinding, welding, and other spark-inducing activities. Smoking shall be prohibited within and adjacent to flammable vegetation.
- **Avoidance and Minimization Measure BIO-3: Focused Burrow Surveys.** In order to further identify the potential for burrowing owl to occur in the PIA, a focused survey shall be conducted in all non-developed portions of the PIA. If no suitable burrows are identified, no protocol-level surveys are required and measures **BIO-4** through **BIO-6** shall not be required. If suitable burrows are found, protocol-level surveys for burrowing owls shall be required. Current CDFW protocol requires that a qualified biologist conduct a focused survey within suitable habitat in the PIA and a 300-foot buffer where accessible to determine presence or absence of the species. The survey shall include four survey visits. One visit shall occur between February 15 and April 15. A minimum of three visits shall occur between April 15 and July 15, with at least one of those visits occurring after June 15. The surveys shall occur during favorable weather conditions (i.e., surveys shall not be conducted during rain, high winds [>20 mph], dense fog, or temperatures over 90°F) from morning civil twilight to 10:00 a.m. and/or from 2 hours before sunset until evening civil twilight. If burrowing owls are present, **BIO-5** and **BIO-6** shall be implemented. If destruction of an unoccupied burrow is unavoidable, **BIO-7** and **BIO-8** shall be implemented.
- **Avoidance and Minimization Measure BIO-4: Take Avoidance Burrowing Owl Survey.** To determine if burrowing owls are occupying the project limits or adjacent areas prior to construction, a take avoidance survey, following CDFW protocol (2012), shall be conducted no more than 7 days prior to initiating ground disturbance activities. In addition, any time lapses between project activities would trigger subsequent take avoidance surveys including, but not limited to, a final survey conducted within 24 hours prior to ground disturbance. The survey shall be conducted from civil

twilight to 10:00 a.m. or 2 hours before sunset until evening civil twilight within areas providing suitable habitat for burrowing owls. The survey will include the proposed project limits and a 300-foot buffer if performed between February 1 and August 31 (burrowing owl nesting season) and a 100-foot buffer if the survey is conducted outside of the nesting season. If burrowing owls are present, **BIO-5** and **BIO-6** shall be implemented.

- **Avoidance and Minimization Measure BIO-5: Avoidance of Burrowing Owl during the Nesting Season.** If burrowing owls are found during pre-construction take avoidance surveys (**BIO-4**) during the nesting season, the burrowing owls shall be fully avoided by establishing an appropriate buffer (minimum of 200 feet), where feasible. This buffer can be reduced by a qualified biologist after monitoring burrowing owls and determining that the proposed activity would not greatly change the burrowing owl activity. Biological monitoring shall be required for any work within 200 feet of an occupied burrowing owl burrow.
- **Avoidance and Minimization Measure BIO-6: Passive Relocation of Burrowing Owl.** If burrowing owls are present during preconstruction take avoidance surveys (**BIO-4**) and avoidance measures are not feasible, passive relocation by a qualified ornithologist may be conducted once it has been confirmed that pairing activities have not begun. Passive relocation efforts shall be conducted in coordination with CDFW. If the burrowing owls are found to be paired and exhibiting potential nesting behavior, the burrowing owls shall be fully avoided as discussed in **BIO-5** until it is confirmed by the qualified biologist that the pair is not nesting and that young are not present, or if present are independently foraging.
- **Mitigation Measure BIO-7: Creation of Burrows.** If unoccupied burrows identified during focused burrow surveys (**BIO-3**) cannot be feasibly avoided, existing burrows will be enhanced (enlarged or cleared of debris) or new burrows will be created (by installing artificial burrows) at a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.
- **Mitigation Measure BIO-8: Burrowing Owl Monitoring Plan.** If unoccupied burrows identified during focused burrow surveys (**BIO-3**) cannot be feasibly avoided, a monitoring plan, which will include mitigation success criteria and a monitoring schedule, will be developed and implemented. The plan will be submitted to the CDFW for review prior to construction, and an annual report will be submitted to the CDFW.
- **Avoidance and Minimization Measure BIO-9: Preconstruction Survey for Nesting Migratory Birds.** If vegetation removal commences during the bird breeding season (defined as February 1 through September 1), a preconstruction survey by an experienced biologist shall occur within 48 hours prior to the initiation of construction activities. The survey shall occur within all suitable nesting habitat proposed for removal and/or disturbance within the PIA and a 150-foot buffer (plus an additional 200-foot visual assessment for nesting raptors), as access is allowed. If nesting birds are found, an initial 150-foot passerine species and 500-foot raptor species (or other distance determined through coordination with the wildlife agencies) avoidance area shall be established around the nest using orange snow fencing until a qualified biologist has determined that young have fledged or nesting activities have ceased. If nesting listed species are detected, the wildlife agencies will be contacted and a 500-foot (or other distance determined through coordination with the wildlife agencies) avoidance area will be established around the nest using orange snow fencing until a qualified biologist has determined that young have fledged or nesting activities have ceased. In the event that vegetation trimming, removal, or other construction activities are suspended for 5 days or more, a preconstruction nesting bird survey shall be conducted within 48 hours prior to re-initiation of work.

Cumulative Impacts

Construction

Less-than-significant impact with Mitigation Incorporated. Sensitive biological resources are not expected to be present within the proposed PIA. Furthermore, the project would not conflict with local ordinances or adopted conservation plans. Because of the context of the proposed project's location within a primarily disturbed/developed area, the likelihood of a cumulatively considerable impact is negligible.

However, there is always a possibility that biological resources, such as nesting birds or sensitive plant or wildlife species, such as burrowing owl, could be present on the site prior to construction. Therefore, the proposed project would be subject to the Migratory Bird Treaty Act and the California Fish and Game Code, which require avoidance of potential impacts on nesting birds. By complying with these requirements through the implementation of Avoidance, Minimization, and Mitigation Measures **BIO-1** through **BIO-9**, the proposed project's contribution to cumulative impacts from other projects in the immediate area or region that would affect similar biological resources would be rendered less than cumulatively considerable.

Operation

No Impact. The proposed project would not result in any impacts on biological resources during operation.

V. Cultural Resources	Significant and Unavoidable Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The information in this section is based on the *Supplemental Historical Resources Compliance Report* (Caltrans 2018d) and the *Archaeological Survey Report, State Route 14/138 and Avenue K Interchange Improvements Project* (Caltrans 2018e).

Historic Setting

Prehistoric Background

Within the broad temporal periods defined for the western Mojave Desert are a number of cultural complexes, some of which span the transition between periods. The background provided below has been summarized from Sutton et al. (2007).

People have occupied the western Mojave Desert since the Pleistocene epoch. Clovis complex (approximately 10,000–8000 B.C.) materials have been found at China Lake, just north of the Antelope Valley. Following the Clovis complex is the Lake Mojave complex, generally dating between 8000 and 6000 B.C. This complex is associated with early Holocene lakes and characterized by stemmed projectile points (e.g., Lake Mojave and Silver Lake) and abundant bifaces as well as formalized steep-edged unifaces, crescents, and occasional core-cobble tools and ground stone implements. Only a few Lake Mojave complex sites have been identified in the western Mojave Desert, including at Rosamond Lake.

The Pinto complex, generally dated to between 7000 and 3000 B.C., follows the Lake Mojave complex, although the two very likely overlapped significantly in time. The Pinto complex appears to be associated with upland habitats and has the most widespread expression of any of the early manifestations in the western Mojave Desert.

There are very few sites in the western Mojave Desert that date to between about 3000 and 2000 B.C., suggesting very low population densities during this time; it is possible that some areas were largely abandoned.

By about 2000 B.C., precipitation increased and the climate cooled. The earliest late Holocene complex is called Gypsum, defined by the presence of a range of corner-notched, concave-based (Humboldt series), and well-shouldered contracting-stem (Gypsum series) projectile point forms. The Gypsum complex dates to between 2000 B.C. and A.D. 200, a temporal span corroborated by numerous radiocarbon dates obtained since the late 1980s. During the Gypsum complex, there apparently was an increase in trade and social complexity. Along with the marker projectile point types, artifact assemblages include evidence of ritual activities, such as quartz crystals, paint, and rock art, as well as numerous bifaces and grinding

implements. Exploitation of artiodactyls, lagomorphs, rodents, and tortoises is evident from a number of Gypsum complex sites, most notably those from Fort Irwin in the central Mojave Desert.

Beginning about A.D. 200, cultural systems appear to have changed dramatically across the entire Mojave Desert, ushering in the Rose Spring complex, generally dated to between A.D. 200 and 1100. There appears to have been a major population increase, dramatic changes in artifact assemblages, and well-developed middens. The marker projectile points for this complex are Eastgate and Rose Spring series. Diffusing into this area at this time were the bow and arrow as well as knives, drills, stone pipes, bone awls, various milling implements, marine shell ornaments, and a large quantity of obsidian (Sutton 1996; Warren and Crabtree 1986).

Rose Spring complex sites are commonly found near springs, along washes, and in some cases, along lake shores. The frequency of obsidian at many Rose Spring complex components indicates that the procurement and processing of obsidian were essential aspects of settlement and subsistence practices. The resource emphasis was on medium-sized to small game, predominantly lagomorphs and rodents.

After about A.D. 1100, the environment began to deteriorate, new technologies were introduced, populations appear to have declined, and a number of separate cultural complexes, believed to represent the prehistoric aspects of ethnographic groups, emerged. Warren (1984:420) observed “strong regional developments” across the Mojave Desert during this time, including Anasazi interests in turquoise mining in the Mojave Trough, a Patayan influence from the Colorado River, and the eastward spread of the Numic Paiute and Shoshone groups (the Numic expansion) from the western or northwestern Mojave Desert beginning at approximately A.D. 1000.

Late prehistoric occupation in the western Mojave Desert included a variety of site types, including major villages with associated cemeteries, special-purpose sites, and seasonal sites. Artifact assemblages consisted of Desert series projectile points (Cottonwood triangular and Desert side notched), buff and brownware ceramics, shell and steatite beads, slate pendants, incised stones, and a variety of milling stones (Warren and Crabtree 1986). Faunal remains typically consist of lagomorphs, deer, rodents, reptiles, and tortoise. Obsidian use decreased significantly, and flaked-stone tool manufacturing shifted to silicate stone.

Native American Ethnographic Background

The Fairmont Butte is associated with overlapping Native American groups, including the Kitanemuk, Kawaiisu, Tataviam, and Vanyume. The Kitanemuk were located primarily along the southeastern Tehachapi Mountains. The Kawaiisu occupied the southern Sierra Nevada south of the Kern River and into the northern Tehachapi Mountains just south of Tehachapi Pass. The Tataviam lived in the Sierra Pelona, along the southern edge of the western Mojave Desert and to the west, in the upper Santa Clara River area. The Vanyume lived along much of the length of the Mojave River, from the eastern Mojave Desert to at least the Victorville region, and perhaps even farther upstream to the south. They also appear to have lived in the southern and southwestern Antelope Valley.

Historic Background

Captain Pedro Fages, an early Spanish explorer, is considered one of the first Europeans to travel through the Antelope Valley. Fages crossed the southern part of the area around 1772 in search of deserters of the Spanish Army. Four years later, Fray Francisco Garces, another early Spanish traveler, crossed through the western end of Antelope Valley en route to the coastal missions.

The earliest known Euroamerican in the area was explorer Jedediah Smith, who led an expedition of 15 men through the valley in search of the Buena Ventura River in 1827. It was not until 1846 that the

Antelope Valley's first settlement was established. The settlement, started by Jose Flore on his 48,800-acre land grant, Rancho La Liebre, was situated in the western part of the region. In 1853, not long after the establishment of Flore's settlement, the Antelope Valley was subdivided by the U.S. General Land Office subsequent to the acquisition of Alta California through the Treaty of Guadalupe Hidalgo (Gardner 2002:7–8).

Additional settlers to the area came in the form of miners. Mineral discoveries in the southwest portion of the Antelope Valley prompted individuals to settle in that region during the 1850s and 1860s. Gold, silver, and copper extracted from areas such as Soledad Canyon contributed to the valley's economic foundation and aided support industries such as agriculture (County of Los Angeles 2010:11).

Although mineral deposits were discovered throughout the region, development in the Antelope Valley was largely due to the presence of the Southern Pacific Railroad line. Many of the towns that sprang up along the railroad line, often named by railroad officials, are still in existence, including Lancaster (Gardner 2002:8–11). The presence of the railroad led to significant agricultural development of the area.

In the early twentieth century, there was a boost in work opportunities in the Antelope Valley, brought about by construction of the Los Angeles Aqueduct in 1908 (completed 1913). Once completed, the aqueduct provided Southern California with much-needed water. The Antelope Valley received another boost with the introduction of aviation research and development in the area. The valley was chosen as the site for Edwards Air Force Base, which is located on the former 1933 Muroc Air Force Base (sometimes referred to as Muroc Field). Today, the Antelope Valley is home to several aerospace and aeronautical companies, including the Boeing Company and Lockheed Martin Aeronautics Company (Antelope Valley Chamber of Commerce 2010:6).

Records Search

A cultural resources records search was conducted for the project area and a 1-mile buffer to identify any previously recorded cultural resources or previously conducted cultural surveys. As such, it would identify historical resources and archaeological sites within the project site and a 1-mile radius. The records search was conducted at the South Central Coastal Information Center at California State University, Fullerton, a branch of the California Historical Resources Information Center. It maintains California's official records of cultural resource studies and archaeological sites within Los Angeles, Orange, and San Bernardino counties. In addition to archaeological site records, the South Central Coastal Information Center maintains copies of the following reference material:

- National Register of Historic Places
- California Register of Historical Resources
- California Inventory of Historic Resources
- California Historical Landmarks database
- Archaeological base maps
- Historical maps

Previous Cultural Studies

The results of the records search determined that 56 previous studies had been conducted within 1 mile of the SR-14 and Avenue K interchange study area. Of these, 22 examined land within the study area, whereas the other 35 examined land within the records search buffer area.

No previously recorded prehistoric or historical-period cultural resources were identified within the study area.

Archaeological Survey

An archaeological survey of the interchange study areas as well as a 100-foot (30-meter) buffer around the project area (to accommodate any future changes to the interchange study areas) was conducted from September 2 to 4, 2015, by Statistical Research Incorporated archaeologists Matthew Hyland and Sarah Nava. Private property and areas that were developed and had no ground exposure were not surveyed. The total survey acreage was 70 acres. No archaeological resources were identified in the PAL during the archaeological survey.

The SR-14 and Avenue K interchange project area is heavily urbanized (i.e., most of the area has been developed). The surrounding land uses are both commercial and residential, with many housing tracts located nearby. Modern disturbances to the area have included leveling and grading for the construction of the current SR-14 and Avenue K. The majority of the work will not reach undisturbed soils because it consists of pavement with adjacent sidewalks with expected thickness of less than 2 feet (estimated at 18 inches). Sewer and storm drain construction has disturbed intact native soils to depths ranging from 8 to 10 feet below street level along the entire length of Avenue K within the PAL. Overall, the potential for any subsurface findings in the PAL is low because of previous ground-disturbing activities—particularly the SR-14 construction and sewer and storm drain construction—even though the surrounding area where the proposed project is located has a high potential for buried archaeological sites.

Impact Analysis

Would the project:

a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No historical resources were identified in the following inventories during the records search:

- National Register of Historic Places
- California Register of Historical Resources
- California Inventory of Historic Resources
- California Historical Landmarks database

As identified in the *Historical Resources Compliance Report*, the following properties within the project area were evaluated by an architectural historian meeting the Secretary of the Interior's Professional Qualifications Standards, do not meet the criteria set forth in Section 15064.5(a) of the State CEQA Guidelines, and therefore are not historical resources for the purposes of CEQA:

- 1203 West Avenue K, Lancaster

- 1802 West Avenue K, Lancaster
- 1810 West Avenue K, Lancaster
- 1816 West Avenue K, Lancaster

Additionally, pursuant to Caltrans' PRC 5024 Memorandum of Understanding Stipulation VIII.C.5, a review of the statewide historic bridge inventory determined that the following state-owned cultural resource within the project area was previously determined not eligible for inclusion in the National Register of Historic Places or for registration as a California Historical Landmark, and that determination is still valid. As a result, the following property is not considered a historical resource for the purposes of CEQA:

- Bridge No. 53 2381R, Avenue "K" UC (SR-14 at Avenue K), 07-LA-014-R66.73-LAN

Construction and Operation

No impact. No historical resources have been identified within the boundaries of the proposed project area. Therefore, there would be no impacts on historical resources during the construction or operational phases.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No archaeological resources have been identified within the boundaries of the proposed project area.

Construction

Less-than-significant impact. The paucity of archaeological features on the surface does not preclude their existence at the subsurface level. The project area is relatively flat and soils consist of Younger Alluvial Fan Deposits (Qyfc) and modern alluvial fan deposits (Qf) (Hernandez 2010). The Qyfc soils are Holocene to Late Pleistocene-aged while the Qf soils are Holocene-aged. Landforms that were formed during the Holocene epoch are considered to have sensitivity for buried archaeological sites. Therefore, the project site can be considered sensitive for buried archaeological sites. In addition, Amargosa Creek, which has been channelized in the project area, crosses the eastern portion of the project area, between SR-14 and 12th Street West. Lands adjacent to natural water courses are considered to have elevated sensitivity for buried archaeological sites.

Significant buried archaeological resources could be discovered during construction-related ground disturbance within native soils. Implementation of Avoidance and Minimization Measures **CUL-1**, **CUL-2**, and **CUL-3** would reduce this impact to a less-than-significant level.

Operation

No impact. There is no potential for unearthing buried archaeological resources because the proposed project would be a paved roadway and excavation or ground disturbance during operation would not occur. Therefore, archaeological resources would not be affected during operation of the proposed project.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction

Less-than-significant impact. There are no known paleontological resources or unique geologic features within the project site. Sediment in the project area of potential effects near the ground surface is Holocene in age (Ponti et al. 1981) and has no potential for containing vertebrate fossils. However, fossils could be present at depths greater than 5 feet, and could be found and disturbed or damaged during excavations for the project. Implementation of Avoidance and Minimization Measure **CUL-4** would reduce any potential impact to a less-than-significant level. Therefore, construction-related impacts on paleontological resources would be less than significant.

Operation

No impact. As mentioned, there are no known paleontological resources or unique geologic features within the project site. There is no potential for unearthing paleontological resources during operation of the project because ground disturbance would not occur. Therefore, impacts on paleontological resources during project operation would not occur.

d. Disturb any human remains, including those interred outside of formal cemeteries?

Construction

No impact. The project site does not contain a formal cemetery and is not adjacent to a formal cemetery. The project vicinity is fully developed, and there is no record of human remains being identified during development of the area. Furthermore, the project site and vicinity (1) have been surveyed for archaeological resources; (2) are not known to contain human remains interred outside formal cemeteries; and (3) are not known to be located on a burial ground. Therefore, it is highly unlikely the proposed project would disturb any human remains during construction. If human remains are discovered, State Health and Safety Code (HSC) Section 7050.5 states that further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC), who would then notify the Most Likely Descendant. Further provisions of PRC 5097.98 are to be followed as applicable, as prescribed by Avoidance and Minimization Measure **CUL-2**.

Operation

No impact. The proposed project would not have the potential to disturb human remains, as it is a road improvement project within an existing roadway and located in a developed area.

Avoidance, Minimization, and Mitigation Measures

- **Avoidance and Minimization Measure CUL-1: Stop work if buried cultural deposits are encountered during construction activities.** If buried cultural resources, such as chipped or ground stone, historic debris, or building foundations, are inadvertently discovered during ground-disturbing activities, work shall immediately stop within a 100-foot radius of the find until a qualified archaeologist can assess the significance of the find, treat the find according to accepted practices, and, if necessary, develop a response plan. Preservation in place shall be the preferred treatment method, per State CEQA Guidelines Section 15126.4(b) (Avoidance, Open Space, Capping, Easement).
- **Avoidance and Minimization Measure CUL-2: Stop work if human remains are encountered during construction activities.** If human skeletal remains are encountered, ground-disturbing

activities shall stop within a 100-foot radius of the discovery. Under HSC Section 7050.5, if human remains are discovered during any project activity, the County Coroner must be notified immediately. If human remains are exposed, HSC Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition, pursuant to California PRC Section 5097.98. If the County Coroner determines that the remains are Native American, the coroner shall contact the NAHC within 24 hours. A qualified archaeologist shall also be contacted immediately. The NAHC, pursuant to PRC Section 5097.98, shall immediately notify those persons it believes to be most likely descended from the deceased person so they can inspect the burial site and make recommendations for treatment or disposal.

- **Avoidance and Minimization Measure CUL-3: Archaeological and Native American monitoring of ground-disturbing activities.** Monitoring during all earth moving activities shall be performed by a qualified archaeologist and a professional tribal monitor from San Manuel Band of Mission Indians. At least 14 days before start of construction, Caltrans shall enter an agreement with San Manuel Band of Mission Indians specifying appropriate treatment of inadvertent discoveries of cultural resources. A tribal monitor shall be required on site during all ground-disturbing activities. The monitor shall have the authority to temporarily halt ground-disturbing activities in the area of the find to allow recovery of cultural resources in coordination with the Project Archaeologist.
- **Avoidance and Minimization Measure CUL-4: Stop work if paleontological resources are encountered during construction activities.** During grading and site preparation activities, if paleontological resources are encountered, all work in the immediate vicinity of the find shall halt until a qualified paleontologist can evaluate the find and make recommendations. Paleontological resource materials may include fossils, plant impressions, or animal tracks that have been preserved in rock. Impacts on these resources, if not properly handled, would be potentially adverse. If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery would be required. Construction shall not resume until the appropriate avoidance and minimization measures are implemented or the materials are determined to be less than significant.

Cumulative Impacts

Construction

Less-than-significant impact. Known cultural resources are not present within the proposed project limits. However, there is always a possibility that archaeological resources could be unearthed during deeper excavation during project construction. Given the project's compliance with Avoidance and Minimization Measures **CUL-1**, **CUL-2**, **CUL-3**, and **CUL-4**, even in the event that archaeological or paleontological resources are discovered during construction, impacts would be expected to be less than significant and preservation of the materials would be sought so as not to result in an impact, or thus contribute to a cumulative impact on cultural resources.

Operation

No impact. The proposed project would not result in any impacts on cultural resources during operation.

VI. Geology and Soils	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The geology and soils information contained herein is based on the *SR-14 Avenue K Interchange Improvements PA/ED, Preliminary Materials Report* (Caltrans 2017c). The Alquist-Priolo Earthquake Fault Zoning Act requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development and prohibit construction on or near active fault traces to reduce hazards associated with fault rupture. The Alquist-Priolo Earthquake Fault Zones are the regulatory zones that include surface traces of active faults. The nearest fault is the San Andreas Fault, over 7 miles south of the project site. The project site is not within a State of California Alquist-Priolo Earthquake Fault Hazard Zone.

Impact Analysis

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.*

Construction

Less-than-significant impact. As described above, the project site is not within a State of California Alquist-Priolo Earthquake Fault Hazard Zone. In addition, the proposed project would not include the addition of new structures meant for human occupancy or otherwise expose existing structures to increased risk of fault induced rupture (California Office of Emergency Services 2015). There are no active or potentially active faults with the potential for surface fault rupture directly beneath the project site. Therefore, the potential for surface fault rupture during construction activities is considered minimal and impacts would be less than significant.

Operation

Less-than-significant impact. The proposed project would be constructed according to the California Building Code and the County of Los Angeles Building Code, which would minimize anticipated impacts related to the proximity of the project site to the San Andreas Fault. Furthermore, as mentioned, there are no active or potentially active faults with the potential for surface rupture directly beneath the project site. Additionally, no structures for human habitation are included in the proposed project. As such, people or structures would not be exposed to substantial impacts from a rupture of a known earthquake fault and impacts would be less than significant.

- ii). *Strong seismic ground shaking?*

Construction and Operation

Less-than-significant impact. Strong seismic ground shaking effects can include ground lurching and shallow ground rupture, soil liquefaction, and dynamic settlement. These effects, which are a possibility throughout the Southern California region, are dependent on the on-site geology and the distance between the project site and the causal fault. The project site is within the seismically active area of Southern California and has the potential to experience strong ground shaking from local and regional faults. The closest major active fault that could produce these effects in the vicinity of the project site is the San Andreas Fault, which is approximately 7 miles to the south. The proposed project would be designed to include all applicable California Division of Occupational Safety and Health standards and technical specifications required by the seismic safety codes of the California Building Code and built to current seismic standards. Therefore, compliance with building codes would minimize the anticipated impacts related to the proximity of the San Andreas Fault by requiring the proposed project to be built to withstand seismic ground shaking. As a result, impacts would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Construction and Operation

Less-than-significant impact. Liquefaction is defined as a loss of strength of saturated cohesionless soil generally due to seismic shaking. Liquefaction occurs more often in areas where shallow groundwater exists and in areas underlain by silts and fine sands. Liquefaction occurs when saturated, low-density, loose materials (e.g., sand or silty sand) are weakened and transformed from a solid to a near-liquid state as a result of increased pore water pressure, which can be caused by strong ground motion from an earthquake or other severe vibratory motion. Soil liquefaction causes ground failure that can damage roads, pipelines, buildings with shallow foundations, and levees. Liquefaction can occur in areas characterized by water-saturated, cohesionless, granular materials at depths less than 40 feet. Saturated unconsolidated alluvium with earthquake intensities greater than Modified Mercalli Intensity VII may be susceptible to liquefaction. This would include areas with shallow perched groundwater.

Construction and operational activities associated with the proposed project would not expose people or structures to substantial adverse effects from seismic-related ground failure, including liquefaction. The site is located on deep alluvial soil deposits eroded from the San Gabriel and San Bernardino Mountains to the south. Soil density ranges from slightly compact to very dense. Shallow groundwater is generally not expected within the project's boundaries. Because shallow groundwater is not expected within project's boundaries and because the foundation soils are relatively dense in nature, the potential for liquefaction and liquefaction-induced settlement is considered negligible. Additionally, according to the Office of Emergency Services, the project site is not in a liquefaction zone (California Office of Emergency Services 2015). Therefore, people or structures would not be exposed to substantial adverse effects from seismic-related ground failure, including liquefaction, and impacts would be less than significant.

iv). Landslides?

Construction and Operation

No impact. A landslide is a mass of rock, soil, and debris displaced down-slope by sliding, flowing, or falling. The susceptibility of land (slope) failure is dependent on the slope and geology as well as the amount of rainfall, excavation, or seismic activities. Construction and operation of the proposed project would not expose people or structures to substantial adverse effects from landslides. The project site is relatively flat, with an approximately 40-foot elevation change across the project site. Additionally, according to the Department of Conservation, the project site is not in an area that is considered susceptible to an earthquake-induced landslide (California Department of Conservation 2005). Additionally, there are no steep slopes on parcels adjacent to the project site. Therefore, people or structures would not be exposed to substantial adverse effects from landslides during construction and operational activities. Impacts would not occur.

b. Result in substantial soil erosion or the loss of topsoil?

Construction

Less-than-significant impact. Construction of the proposed project would not result in substantial soil erosion or the loss of topsoil. The proposed project is expected to disturb an area greater than 1 acre; therefore, it would be subject to the requirements of the Construction General Permit. As such, BMPs would be employed during construction, such as sediment and erosion control measures to prevent

pollutants from leaving the site. Additionally, construction of the proposed project would comply with stormwater and grading ordinances. Therefore, construction impacts related to soil erosion or loss of topsoil would be less than significant.

Operation

Less-than-significant impact. Operation of the proposed project would not result in substantial soil erosion or the loss of topsoil. Stormwater BMPs to address stormwater requirements and treatment of surface water runoff, as well as utility conflicts, may potentially require drainage easements, temporary construction easements, and/or utility easements. BMPs would likely be limited to biofiltration swales and a detention basin in the southwest quadrant along Avenue K. BMPs would minimize the potential for soil erosion during operation of the proposed project. Therefore, operational impacts related to soil erosion or loss of topsoil would be less than significant.

- 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 an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?*

Construction and Operation

Less-than-significant impact. As mentioned above, due to the relatively flat topography of the project site, hazards from landslides are considered negligible. Land subsidence and surface fissures can occur as a result of groundwater extraction. The extraction of mineral or oil resources can also result in subsidence. The proposed project would not increase groundwater extraction and would not lower groundwater levels. The native soils consist predominantly of silty sands with gravel shallow bedrock. The proposed project would not cause soils to become unstable or result in land subsidence, lateral spreading, liquefaction, or collapse. Additionally, construction of the proposed project would be subject to the California Building Code and the County of Los Angeles Building Code, which would further reduce potential geologic hazard impacts, including those related to unstable soils. Impacts would be less than significant.

- 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?*

Construction and Operation

No impact. Construction and operation of the proposed project would not occur on expansive soils; therefore, substantial risks to life or property would not occur. Expansive soils are fine-grained soils (generally high-plasticity clays) that can undergo a significant increase in volume with an increase in water content as well as a significant decrease in volume with a decrease in water content. Changes in the water content of highly expansive soils can result in severe distress for structures constructed on or against the soils. None of the soils typical of the project area would normally be classified as expansive according to Table 18-1B of the Uniform Building Code. Additionally, construction of the proposed project would be subject to the California Building Code and the County of Los Angeles Building Code, which would further reduce potential geologic hazard impacts, including those related to expansive soils. Therefore, impacts would not occur.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

Construction and Operation

No impact. The project does not include housing or any other use that would require the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater. Impacts would not occur.

Avoidance, Minimization, and Mitigation Measures

No potentially significant impacts related to geology and soils would occur as a result of the proposed project. Therefore, no avoidance, minimization, or mitigation measures are required.

Cumulative Impacts

Construction and Operation

No impact. A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact when considered with past, present, and reasonably foreseeable future projects. Currently, there is one planned development in the vicinity of the proposed project and four interchange improvements projects within the study area.

Past development projects have contributed to the existing conditions in Southern California. Some of the buildings in the vicinity of the project were constructed prior to modern seismic design requirements; however, these buildings and structures have been, and will continue to be, retrofitted to withstand seismic activity. Similar to the proposed project, related projects would be built in a seismically active region of Southern California and could experience ground shaking and other seismic hazards. However, the project would also be subject to the California Building Code, current seismic standards, and other requirements that would make sure the structures are able to withstand seismic activity. Therefore, construction of the proposed project and related project would not result in cumulatively considerable impacts with respect to geology and seismicity. No cumulative impact from past, present, and probable future projects would occur.

Grading and excavation activities associated with construction of the proposed project and related project could result in the exposure of soils to wind and water erosion. This could result in a cumulative loss of soil. However, as noted above, projects involving grading of an area greater than 1 acre would be subject to the requirements of the Construction General Permit, which necessitates implementation of BMPs for erosion control. As a result, the proposed and related project would not result in significant cumulative impacts related to soil erosion.

Construction and operation of the proposed project would not change the geologic properties of the area. Seismic and geologic risks would not increase or decrease as a result of the proposed project or related project. Therefore, the proposed project would not result in cumulatively considerable impacts with respect to geology, soils, and seismicity.

As a result, the proposed project would not contribute to a potentially significant cumulative impact. When considered along with other related projects, the Build Alternative is not expected to contribute to a cumulatively significant incremental impact on geology and soils or to have a considerable contribution to cumulative geology and soil impacts.

VII. Greenhouse Gas Emissions	Significant and Unavoidable Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>Would the project:</p> <p>a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</p> <p>b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</p>	<p>Caltrans has used the best available information based to the extent possible on scientific and factual information, to describe, calculate, or estimate the amount of greenhouse gas emissions that may occur related to this project. The analysis included in the climate change section of this document provides the public and decision-makers as much information about the project as possible. It is Caltrans' determination that in the absence of statewide-adopted thresholds or GHG emissions limits, it is too speculative to make a significance determination regarding an individual project's direct and indirect impacts with respect to global climate change. Caltrans remains committed to implementing measures to reduce the potential effects of the project. These measures are outlined in the climate change section that follows the CEQA checklist and related discussions.</p>			

See Section 3.3.1, *Climate Change*, section for discussion of greenhouse gas (GHG) emissions and climate change.

VIII. Hazards and Hazardous Materials	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The information in this section was derived from the *Draft Initial Site Assessment, SR-138 (SR-14) Avenue K Interchange Project* (Caltrans 2018f).

The project study area is located within the Antelope Valley. The Antelope Valley is a topographically closed triangular valley that is bounded on the southwest by the San Gabriel Mountains, on the northwest by the Tehachapi Mountains, and on the north and east by lower hills, ridges, and buttes. The Antelope Valley is filled to depths of more than 5,000 feet with Tertiary and Quaternary fluvial and lacustrine sediments from adjacent mountain ranges (Caltrans 2018f). Historically, the site was either undeveloped or used for agricultural purposes. Today, the project study area is part of SR-14 and other infrastructure improvements necessary to provide freeway access for the City of Lancaster.

Impact Analysis

Would the project:

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

Construction

Less-than-significant impact. Construction activities would include the transport, use, and disposal of small amounts of fuel hydrocarbons, solvents, paints, oils, grease, and caulking during the construction phase; however, the use of such materials is typical for construction projects. This would not represent the transport, use, and disposal of acutely hazardous materials. Compliance with federal, state, and local regulations, in combination with construction BMPs implemented from a mandatory SWPPP (see Section IX, *Hydrology and Water Quality*), is expected. Additionally, there are no known hazardous materials sources within the roadway and freeway ROWs. There are no known hazardous materials release within the study area roadway and freeway ROWs other than the eight historic automotive facility leaking underground storage tank releases. All but one of these incidents has received closure from RWQCB for their investigation and cleanup activities. In the unlikely event that odiferous, stained, or discolored soil is encountered during construction, Avoidance and Minimization Measure **HAZ-1** would be implemented to ensure appropriate identification and handling of potentially hazardous materials. Therefore, it is not expected that construction activities would require the routine transport, use, or disposal of hazardous materials, and impacts would be less than significant.

Operation

Less-than-significant impact. The proposed project is a roadway improvement project and would not use hazardous materials (e.g., solvents, cleaning agents, paints, pesticides, petroleum fuels, propane, batteries, and aerosols). Furthermore, the proposed project would be required to comply with applicable federal, state, and local regulations related to hazardous materials. Therefore, operational impacts related to the routine transport, use, or disposal of hazardous materials would be less than significant.

- 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?*

Construction

Less-than-significant impact. Although the construction equipment that would be used to build the proposed project could release oils, grease, solvents, and other materials through accidental spills, which could affect surrounding land uses, the consequences of construction-related spills are generally limited compared with other accidental spills and releases. This is because the amount of hazardous material released during a construction-related spill is relatively small (e.g., a single piece of construction equipment generally holds less than 50 gallons of fuel). Construction-related spills of hazardous materials are not uncommon, but the enforcement of construction and demolition standards, including BMPs from appropriate local and state agencies, would minimize the potential for an accidental release of petroleum products and/or hazardous materials or an explosion during construction. Federal, state, and local controls have been enacted to reduce the effects of hazardous materials spills. Therefore, the proposed project would not result in reasonably foreseeable upset and accident conditions involving the release of hazardous materials, and impacts would be less than significant.

Operation

Less-than-significant impact. Operational activities related to the widened roadway and off- and on-ramp improvements are not associated with the use or storage of large amounts of hazardous substances. Therefore, operation of the proposed project would not result in 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, and impacts would be less than significant.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The following three schools are within 0.25 mile of the project site: Miller Elementary School, approximately 0.15 mile southwest of the project site at 43420 22nd Street West; Sierra Elementary School, approximately 0.25 mile northeast of the project site at 747 W Avenue J-12; and Sunnydale Elementary School, approximately 0.12 mile east of the project site at 1233 W Avenue J-8.

Construction

Less-than-significant impact. Construction activities would not result in hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste. As discussed above, construction activities would include the transport, use, and disposal of small amounts of fuel hydrocarbons, solvents, paints, oils, grease, and caulking during the construction phase; however, the use of such materials is typical for construction projects. This would not represent the transport, use, and disposal of acutely hazardous materials. Furthermore, the proposed project would be required to comply with all applicable with federal, state, and local regulations. Therefore, construction activities would not emit hazardous emissions or involve handling hazardous or acutely hazardous materials, and impacts would be less than significant.

Operation

Less-than-significant impact. Operational activities related to the widened roadway and off- and on-ramp improvements are not associated with hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste, which would require regulatory oversight. As mentioned, it is not anticipated that the proposed project would use hazardous materials (e.g., solvents, cleaning agents, paints, pesticides, petroleum fuels, propane, batteries, and aerosols). Furthermore, any use or spills that may occur would be cleaned up expeditiously. In addition, the proposed project would be required to comply with applicable federal, state, and local regulations related to hazardous materials. Therefore, operational activities would not emit hazardous emissions or involve handling acutely hazardous materials, and impacts would be less than significant.

d. Be located on a site that is included on a list of hazardous materials sites that complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Construction

Less-than-significant impact. Federal, state, local, tribal, and proprietary-record databases were reviewed to identify any recognized environmental conditions on or in the vicinity of the project site. The project alignment and adjacent sites were not identified as hazardous materials use, storage, disposal, or release sites in any of the databases reviewed.

Although the Initial Site Assessment identified several sites throughout the project vicinity that handle hazardous waste, such as CVS Pharmacy, Tesoro Gasoline Digas, and Sierra Toyota, none are considered

to be a recognized environmental condition for the project site. Therefore, construction of the proposed project would not occur on or in the vicinity of a listed hazardous materials site and result in a significant hazard to the public or the environment. Impacts would be less than significant.

Operation

Less-than-significant impact. As described above, the project site and adjoining parcels were not identified as hazardous materials use, storage, disposal, or release sites in any of the databases that were reviewed. Furthermore, operation of the improved roadway would not increase these hazards. Therefore, the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and project operation would not result in or create a significant hazard to the public or the environment. Impacts would be less than significant.

- e. For a project within an airport land use plan or, where such a plan has not been adopted, within 2 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?*

Construction and Operation

No impact. Los Angeles County Airport Land Use Commission has prepared the Los Angeles County Airport Land Use Plan, which identifies the Airport Influence Area (AIA) for each public use airport in the County, including Palmdale Regional Airport and General William J. Fox Airfield (ALUC 2004a, 2004b). The proposed project would be approximately 3.5 miles northwest from the Palmdale Regional Airport, outside of its AIA. The proposed project would be approximately 4.7 miles southeast of the General William J. Fox Airport, outside of its AIA. It would not construct any wildlife hazard attractants that would jeopardize the safety of aircraft operations. Because the proposed project would not be within the AIAs, project construction and operation would not result in a safety hazard for people residing or working in the project area, and no impacts would occur.

- 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?*

Construction and Operation

No impact. The proposed project is not within the vicinity of a private air strip. Construction and operation of the proposed project would not result in a safety hazard for people residing or working in the project area, and no impacts would occur.

- g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Construction

Less-than-significant impact. The County's Operational Area Emergency Response Plan and All-Hazard Mitigation Plan establish safety procedures for major natural or human-caused disasters that could occur within the geographic boundaries of the Operational Area. Additionally, construction activities would not require the full closure of any public or private streets or roadways or impede access to the project site or any surrounding areas in the event of an emergency. Although partial closures may be required, the proposed project would provide all required emergency access in accordance with the requirements of the Los Angeles County Fire Department. Therefore, construction activities would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and a less-than-significant impact would occur.

Operation

No impact. Operational impacts related to implementation of an adopted emergency response plan or emergency evacuation plan would not occur. Therefore, operational activities would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and no impacts would occur.

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?

Construction and Operation

No impact. The proposed project would not be within a Very High Fire Hazard Severity Zone, as delineated by the California Department of Forestry and Fire Protection (California Department of Forestry and Fire Protection 2007). The nearest fire severity zones are several miles south and west of the project site. Construction and operational activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and therefore no impacts would occur.

Avoidance, Minimization, and Mitigation Measures

- **Avoidance and Minimization Measure HAZ-1:** If odiferous, stained or discolored soil is encountered during construction, the construction contractor shall perform the following:
 - Construction personnel shall seek the professional recommendation of a consultant who specializes in the handling and identification of hazardous materials. The suspect soil shall be isolated and covered and bypassed by construction personnel until analytical results are reviewed by qualified personnel. Analytical results shall be compared to EPA's Regional Screening Levels for residential developments.² Regional Screening Levels are screening levels developed by EPA for common environmental pollutants.

Cumulative Impacts

Construction and Operation

Less-than-significant impact. A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact when considered with past, present, and reasonably foreseeable future projects. The study area for the cumulative impacts analysis encompasses the area within a 1.5-mile radius from the project site because of the proximity of past, present, and reasonably foreseeable future projects to the proposed project and their potential to affect resources similar to those that would be affected by the proposed project. Currently, there is one planned development in the vicinity of the proposed project. The planned development is a 20,000-square-foot commercial development at the intersection of 10th Street West and Avenue K. Construction of the development has yet to begin.

As previously mentioned, handling of hazardous materials and intermittent use and transport of small amounts of petroleum-based lubricants, solvents, fuels, and paints to and from the project site may occur during the construction phase of the proposed project. Furthermore, any hazardous waste that is generated during the construction phase of the proposed project would be collected and transported away from the site. As such, impacts would not have the potential to contribute to hazards associated with the related

² Residential being the more conservative of the two land uses considered for Regional Screening Levels, the other being industrial.

project because these types of impacts would occur intermittently and would generally be limited to the proposed project footprint.

There is a potential for a release to occur during the use and transport of petroleum-based lubricants, solvents, fuels, and paints to and from the site. However, conformance with existing state and county regulations, as well as project safety BMPs, would render this impact less than significant. This impact does not have the potential to contribute to hazards associated with the related project because these types of impacts would be localized, occurring only in the immediate vicinity of the project site. In addition, the implementation of appropriate safety measures during construction of the proposed project would reduce the impact to a level that would not contribute to cumulative effects.

Furthermore, grading and excavation activities as part of the proposed project are expected to disturb only a minimum amount of surficial soil and would not expose construction personnel or the surrounding environment to contaminated groundwater from nearby hazardous materials sites and thus would not be cumulatively considerable.

The proposed project would result in no wildland fire hazard impacts; therefore, it would not contribute to any cumulative adverse wildland fire impacts.

IX. Hydrology and Water Quality	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in 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 that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j. Contribute to inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Information in this section is based on the *Draft Water Quality Assessment Report* (Caltrans 2018g).

Environmental Setting

On average, Lancaster receives 7.36 inches of precipitation annually (U.S. Climate Data 2016). The proposed project site is mostly impervious, as it would expand an existing roadway.

Surface Hydrology

The project area is within the Antelope-Fremont Valleys Watershed. The watershed encompasses approximately 2,160,639 acres and some of the waterways in this watershed include Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash. The City of Lancaster lies within the Antelope

Valley Drainage Basin. The Antelope Valley represents a large topographic and groundwater basin in the western part of the Mojave Desert. The Antelope Valley is considered a “closed basin” system, meaning that no river systems drain out of the Antelope Valley to other river systems or the ocean.

The Amargosa Creek drainage basin covers approximately 30 square miles in the Leona Valley along the San Andreas Fault zone in the eastern San Gabriel Mountains. The creek provides drainage for the Leona Valley, then extends southeast from Leona Valley across the San Andreas Fault zone on the west side of Palmdale, before turning north near Lancaster and terminating at Rosamond Dry Lake. Flows in Amargosa Creek are intermittent and usually only run during the winter rainy season or, infrequently, as a result of late summer monsoonal storms.

There are several concrete-lined and unlined storm drainages within the project limits. These drainages appear to convey surface water along roadsides and lead to culverts. The drainages range in size from approximately 3 feet to 8 feet in width and are unvegetated. No persistent dry weather flow is identified within the project site.

Surface Water Quality

The project site is within the Lancaster Hydrologic Area under the jurisdiction of the Lahontan RWQCB. Similar to all RWQCBs, the Lahontan RWQCB designates beneficial uses for all water body segments in its jurisdiction and then sets the criteria necessary to protect such uses. Consequently, the water quality objectives developed for particular water segments are based on the designated use and vary depending on such use.

Amargosa Creek and an adjacent unnamed tributary are located in the northeastern portion of the project area and collect the discharges from the project site. The Water Quality Control Plan for the Lahontan Region notes Amargosa Creek as an ephemeral stream with the following beneficial uses:

- MUN – Municipal and Domestic Water Supply
- AGR – Agricultural Supply
- GWR – Ground Water Recharge
- FRSH – Freshwater Replenishment
- REC-1 – Water Contact Recreation
- REC-2 – Non-contact Water Recreation
- COMM – Commercial and Sport Fishing
- WARM – Warm Freshwater Habitat
- COLD – Cold Freshwater Habitat
- WILD – Wildlife habitat

However, the extent covered by these designations is from the Los Angeles County Sanitation District (LACSD) discharge downstream of the project to the headwaters of Amargosa Creek. Many of these beneficial uses are not feasible within the project limits for a variety of reasons. Because there is generally no water in the creek except for storm event runoff, there is no ongoing surface water to support life, so the designations COMM, WARM, COLD, and WILD are not present. The same lack of surface water explains why the other designations are also not applicable to this reach of Amargosa Creek. In the upper reaches of the creek, within the natural habitat of the foothills, there may be some continuous water flows that would support these designations at present or in the future.

The only specific prohibition listed in the Water Quality Control Plan for the Lahontan Region for the Lancaster Hydrologic Area is a prohibition of discharge of waste to surface water above an elevation of 3,500 feet.

The SWRCB identifies waters that fail to meet standards for specific pollutants. The waters are state listed in accordance with the federal Clean Water Act, Section 303(d). There are no 303(d)-listed impairments for downstream receiving waters with the potential to be affected by the proposed project.

Flooding

The Federal Emergency Management Agency (FEMA) is the governing body responsible for delineating the flood-prone areas and delineating flood maps showing these areas in Flood Insurance Rate Maps (FIRMs). According to FEMA, the project is within FIRM Panels 06037C0420F and 06037C0410F (FEMA 2008). Portions of SR-14 are within FEMA Special Flood Hazard Zone A, AH, or AO Areas, which are subject to inundation by the 1 percent annual chance flood and other portions are within shaded Zone X Areas, which are areas of 0.2 percent annual chance flood or areas of 1 percent annual chance flood with average depths less than 1 foot or with drainage areas less than 1 square mile.

West of the interchange at Avenue K, the roadways are within a Shaded Zone X. The FEMA maps indicate potential for overtopping of the existing channel along the east side of the freeway near Avenue K during a 100-year event, but no flood elevations have been identified (Zone A).

Heavy winter rainfall and summer thunderstorms increase the potential for flash floods. Stormwater runoff that does not percolate into the ground flows to surface waters, such as seasonal drainages; nearby aqueducts or flood control channels; lakes; or, eventually, the impermeable dry lakebeds, or playas, at Edwards Air Force Base. Totalling about 60 square miles, these playas³ are generally dry but are likely to be flooded following prolonged precipitation. Fine sediments carried by the stormwater inhibit percolation, as do the impermeable playa soils. Surface water can remain on the playa for up to 5 months, until the water evaporates (California Department of Water Resources 2013).

Groundwater Hydrology

The basin comprises two primary aquifers: (1) the principal aquifer and (2) the deep aquifer. The principal aquifer is an unconfined aquifer. Separated from the principal aquifer by clay layers, the deep aquifer is generally considered to be confined. In general, the principal aquifer is thickest in the southern portion of the valley near the San Gabriel Mountains, while the deep aquifer is thickest in the vicinity of the dry lakes on Edwards Air Force Base. The basin is principally recharged by deep percolation of precipitation and runoff from the surrounding mountains and hills.

Groundwater Quality

Groundwater quality in the Antelope Valley region is excellent within the principal aquifer, but it degrades toward the northern portion of the dry lake areas. The groundwater is characterized by calcium bicarbonate near the surrounding mountains and sodium bicarbonate or sodium sulfate in the central part of the basin. In the eastern part of the basin, the upper aquifer has a sodium-calcium bicarbonate type of water, and the lower aquifer has a sodium bicarbonate type of water. Considered to be generally suitable for domestic, agricultural, and industrial uses, water from the principal aquifer has a higher total dissolved solids level. Hardness⁴ ranges from 50 to 200 milligrams per liter. High fluoride, boron, nitrate, chromium, and antimony levels are problems in some areas of the basin. The groundwater in the basin is

³ A playa is a dry lakebed. These playas are Rosamond Lake, Buckhorn Lake, and Rogers Lake.

⁴ Water hardness is a measure of the amount of dissolved calcium and magnesium salts in the water.

used for agricultural, municipal, and industrial purposes (Los Angeles County Waterworks Districts 2013).

Impact Analysis

Would the project:

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

Construction

Less-than-significant impact. Construction of the proposed project would require temporary disturbance of surface soils and impervious cover using conventional cut-and-fill methods. The current estimate is that approximately 10,000 cubic yards of soil would be excavated as a part of the proposed widening and interchange improvements. Water quality impacts associated with the proposed project would include short-term construction-related erosion, sedimentation, and contamination from hazardous materials, such as paints, solvents, cleaning agents, and metals used during construction. As stated above, there are approximately 2,000 feet of an unlined drainage located northeast of the SR-14/Avenue K interchange northbound on-ramp. In addition, Amargosa Creek intersects portions of Avenue K and 15th Street West and flows adjacent to a portion of SR-14 north of the Avenue K northbound on-ramp. Stormwater runoff within the work access area has the potential to contaminate the groundwater through soil infiltration. This contamination would come from pollutant sources such as oil, chemicals, detergents, and other materials used during construction activities. During precipitation events, sheet flows could reach the storm drain. However, stockpiles and other materials would be stored to prevent them from entering storm drains, the unlined drainage, and Amargosa Creek.

The Construction General Permit is required for soil disturbance activities greater than 1 acre. The proposed project would disturb approximately 26 acres and, therefore, would be required to prepare and implement a SWPPP, in accordance with the Construction General Permit. The proposed project's civil engineer would prepare a stormwater and erosion control drawing as part of the permitted set of drawings. Typical stormwater BMPs that could be implemented include:

- Straw wattles and/or silt fences around stockpiles, areas of land disturbance, and stored materials, which would be covered prior to predicted rain events
- Stabilized construction entrance/exit areas (a series of steel plates with rumble strips)
- Catch basin/inlet protection

The proposed project would be required to obtain a grading permit from the City, which would further ensure the implementation of BMPs related to water quality. With implementation of the applicable grading permit requirements and the construction SWPPP, the proposed project would not violate any water quality standards or waste discharge requirements.

With the implementation of Avoidance and Minimization Measures **WQ-1** through **WQ-8**, impacts from the project would be less than significant. Therefore, impacts on water quality from construction activities would be less than significant.

Operation

Less-than-significant impact. Through compliance with the Municipal Separate Storm Sewer System permit, which requires the discharger to develop and implement a Storm Water Management

Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable, and other applicable stormwater requirements, the proposed project would not violate any water quality standards or waste discharge requirements. The proposed project consists of improvements to an existing roadway and would not change existing conditions substantially, or to the point that it would create a significant impact on water quality.

With the implementation of Avoidance and Minimization Measures **WQ-1** through **WQ-8**, impacts from the project would be less than significant. Therefore, the project's operational impacts would be less than significant.

- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in 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 that would not support existing land uses or planned uses for which permits have been granted)?***

Construction

Less-than-significant impact. The proposed project would not require any dewatering during construction and would not result in the construction of a new groundwater well. Maximum depths of excavation would possibly range from 8 feet to 30 feet (for sign foundations). However, according to the Jurisdictional Delineation technical report prepared for the proposed project (Caltrans 2018c), groundwater varies from approximately 49 to 298 feet below ground surface (City of Lancaster 2016). Therefore, it is unlikely that groundwater would be encountered during utility excavation. The construction-related impacts would be less than significant.

Operation

Less-than-significant impact. The proposed project would result in new impervious surface area for the widened roadway. This new impervious surface area would decrease infiltration. However, because most of the existing project site already consists of impervious surfaces, the additional surface area is not considered to be significant. Once operational, the proposed project would not require water use. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge, and operational impacts would be less than significant.

- 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 that would result in substantial erosion or siltation on site or off site?***

Construction

Less-than-significant impact. No significant effects on drainage are anticipated during construction activities. As described above, BMPs, such as straw wattles and/or silt fences, would be placed around stockpiles, and areas of land disturbance would be covered prior to predicted rain events. A catch basin/inlet protection would reduce the potential for erosion and sedimentation. In addition, construction of the proposed project would not alter the course of the Amargosa Creek or the unlined drainage. Therefore, construction-related impacts would be less than significant.

Operation

Less-than-significant impact. The existing drainage system within the project limits consists of a network of open ditches, pipes, and concrete box culverts that transport runoff in a southwest to northeast direction. Amargosa Creek and an adjacent unnamed tributary are located in the northeast portion of the project site and collect discharges from the project site. As described in the *Water Quality Assessment*

Report (Caltrans 2018g), there is no intent to disturb Amargosa Creek or the unnamed tributary along the SR-14 ROW; therefore, the project would not affect the existing conditions of this resource.

The proposed project may slightly alter the existing drainage patterns on the site by adding new impervious area, primarily paved areas. As such, the proposed project would result in a net increase in runoff from the site and an overall increase in debris. Relative to the existing amount of impervious surfaces, the additional surface area, as mentioned, would not result in significant increase in surface runoff or substantially change drainage patterns. As a result, substantial erosion and/or siltation (on or off site) would not occur. Therefore, the operational impact would be less than significant.

- 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 that would result in flooding on site or off site?*

Construction

Less-than-significant impact. Impacts related to flooding during construction activities are not expected. With the implementation of BMPs during construction, alteration to Amargosa Creek or the unlined drainage would not occur. Therefore, the project would not alter the course of a stream or river and impacts would be less than significant.

Operation

Less-than-significant impact. As mentioned above, the proposed roadway widening and interchange improvements under the proposed project would add a relatively small amount of impervious surface area to the existing project site. Runoff would be collected in the existing catchment system. Due to the size of the additional surface area, the proposed project is not expected to substantially increase rates of surface runoff. In a major rain event, water would continue to its historical path, draining in the closest storm drain inlet (catch basin) in the Amargosa Creek drainage culvert. Stormwater runoff would ultimately be conveyed to bio-treatment areas that would help minimize the potential for localized ponding or flooding within the project area. In addition, once operational, the proposed project would not result in the alteration of a stream or river. Impacts would be less than significant.

- e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

Construction

Less-than-significant impact. As mentioned above, the proposed project's construction is not expected to result in a substantial increase in runoff water, and would not exceed the capacity of the existing drainage system in place at the site. Furthermore, as described above, compliance with the requirements of the project's SWPPP and BMPs, such as straw wattles and/or silt fences, would be placed around stockpiles and areas of land disturbance and covered prior to forecast rain events. Catch basin/inlet protection would reduce the potential for additional sources of polluted runoff to flow into storm drains.

With the implementation of Avoidance and Minimization Measures **WQ-1** through **WQ-8**, impacts from the project would be less than significant.

Operation

Less-than-significant impact. Currently, the existing drainage system transports runoff in a southwest to northeast direction. Due to the relatively small size of additional impervious surface areas that would be added, the existing rainwater catchment system would prevent any polluted runoff from the widened

roadway and interchange improvements from exceeding the capacity of the storm drainage system before discharge into the municipal stormwater system.

With the implementation of Avoidance and Minimization Measures **WQ-1** through **WQ-8**, impacts from the project would be less than significant.

f. Otherwise substantially degrade water quality?

Construction and Operation

Less-than-Significant Impact. As described in Items IX.a through IX.e, the proposed project would result in less-than-significant short-term construction and long-term operational impacts on water quality. Construction impacts would be reduced through the implementation of BMPs identified in the SWPPP.

With the implementation of Avoidance and Minimization Measures **WQ-1** through **WQ-8**, impacts from the project would be less than significant.

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?

Construction and Operation

No impact. No housing is proposed as a part of the project. Therefore, it would not place housing in a 100-year flood hazard area, and no impacts would occur during construction or operation.

h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

Construction and Operation

No impact. No structures that would impede or redirect flood flows are proposed as a part of the project. Therefore, it would not place structures in a 100-year flood hazard area, and no impacts would occur during construction or operation.

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?

Construction and Operation

No impact. There are no levees or dams in the vicinity of the proposed project. Therefore, no impacts would occur during construction or operation.

j. Contribute to inundation by seiche, tsunami, or mudflow?

Construction and Operation

No impact. The project site is outside the Tsunami Hazard Zone as mapped by the California Emergency Management Agency, and approximately 50 miles from the Pacific Ocean (California Department of Conservation 2016a). Therefore, there would be no impact related to potential tsunami inundation.

The closest enclosed body of water where an earthquake-induced seiche could occur is Castaic Lake, which is approximately 25 miles west of the proposed project site. Overflow caused by a seiche would have no impact on the project alignment.

The proposed project site is in an area with generally flat topography; it does not have the relief or slope that would generate a mudflow. Steep topography and high levels of precipitation are the primary requirements for a mudflow. Therefore, the proposed project would not result in impacts associated with mudflows.

Avoidance, Minimization, and Mitigation Measures

- **Avoidance and Minimization Measure WQ-1:** Work areas in waterways will be reduced to the maximum extent feasible to minimize impacts.
- **Avoidance and Minimization Measure WQ-2:** Staging areas will be located outside waterways to reduce direct and indirect impacts on the creek and drainages in the project area.
- **Avoidance and Minimization Measure WQ-3:** Measures will be implemented during construction to minimize the potential for dust, debris, and construction materials to fall into the creek, or otherwise leave the construction area.
- **Avoidance and Minimization Measure WQ-4:** The contractor will implement appropriate hazardous material BMPs to reduce the potential for chemical spills or containment releases into water bodies, including any non-storm water discharge.
- **Avoidance and Minimization Measure WQ-5:** All equipment refueling and maintenance will be conducted in the upland staging area per standard specifications and regulatory permits. In addition, vehicles and equipment will be checked daily for fluid and fuel leaks, and drip pans will be placed under all equipment that is parked and not in operation.
- **Avoidance and Minimization Measure WQ-6:** All trash and construction debris will be removed from channels and construction areas on a daily basis. All BMPs will be properly maintained during project construction and removed upon completion of construction activities. After completion of the project, all construction equipment and materials will be removed from the project area, and the project area will be returned to pre-project conditions.
- **Avoidance and Minimization Measure WQ-7:** Following completion of construction activities, appropriate erosion control measures will be implemented to ensure that soils disturbed by construction are stabilized, to minimize non-storm water discharges into water bodies in the project area, and to meet the requirements of the Lahontan RWQCB and project permits.
- **Avoidance and Minimization Measure WQ-8:** Vegetation removed from the project area will be treated and disposed in a manner that will prevent the spread of invasive species on or off site. If erosion control seed mixes are used, they will be composed of non-invasive species, and all erosion control will be conducted in a manner that would not result in the spread of invasive species.

Cumulative Impacts

Construction and Operation

Less-than-significant impact. The one planned development at the intersection of 10th Street West and Avenue K and other development projects in the watershed could have the potential to degrade stormwater quality by contributing pollutants during construction and operation. However, the incremental contribution to water quality impacts from implementation of the proposed project would be minor because the required SWPPP measures and BMPs would reduce the potential for pollutant discharges in stormwater runoff. Additionally, the related project would also be subject to the requirements of the Construction General Permit, grading permit, and other related stormwater

requirements, which are designed to protect water quality. Other development in the watershed may also be subject to similar requirements. Therefore, it is not expected that the proposed project, in conjunction with the related project and other cumulative development, would result in significant cumulative impacts on hydrology and water quality. The project's contribution to water quality impacts would not be cumulatively considerable.

X. Land Use and Planning	Significant and Unavoidable Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Regulatory Setting

The project site is in the City of Lancaster in northern Los Angeles County and is governed by the *City of Lancaster General Plan 2030*.

City of Lancaster General Plan 2030

The *City of Lancaster General Plan 2030* serves as a foundation in making land use decisions based on goals and policies related to land use, transportation routes, population growth and distribution, development, open space, resource preservation and utilization, air and water quality, noise impacts, safety issues, and other related physical, social, and economic development factors. In addition to serving as a basis for local decision making, the *City of Lancaster General Plan 2030* established a clear set of development rules for citizens, developers, decision-makers, and neighboring cities and counties, and provides the community with an opportunity to participate in the planning and decision-making process. The purpose of the *City of Lancaster General Plan 2030* is to comply with state requirements and to provide the City with a comprehensive, long-range policy guideline for future development.

Impact Analysis

Would the project:

- a. *Physically divide an established community?*

Construction and Operation

No impact. The proposed project consists of roadway widening and improvements to off- and on-ramps that would be located on the existing Avenue K roadbed and its connection to SR-14. The project area is mostly surrounded by commercial uses and vacant land. No changes to surrounding land uses and no changes that would divide the Lancaster community are proposed. All proposed construction and operational activities would occur within the project site, and nearby residential communities would not be divided during construction or operation of the proposed project. Therefore, no impact would occur.

- b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?***

Construction and Operation

No impact. The proposed project is with the City of Lancaster in northern Los Angeles County. Construction and operation of the proposed project would be conducted in compliance with these plans and no impacts would occur.

- c. Conflict with any applicable habitat conservation plan or natural community conservation plan?***

Construction and Operation

No impact. The project site is not within any adopted habitat conservation plan or natural community conservation plan. Therefore, construction and operation of the proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan. No impact would occur.

Avoidance, Minimization, and Mitigation Measures

No potentially significant impacts related to land use and planning would occur as a result of the proposed project. Therefore, no avoidance, minimization, or mitigation measures are required.

Cumulative Impacts

Construction and Operation

No impact. The proposed project would not result in any impacts on land use and planning, and therefore would not contribute toward a cumulative impact on land use and planning.

XI. Mineral Resources	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

In 1975, the Department of Conservation’s California Geological Survey created a program to assist in the protection and development of mineral resources through the land use planning process. This program is mandated by the Surface Mining Reclamation Act of 1975. Local agencies are required to use mineral land classification maps and reports when developing land use plans and when making land use decisions (California Geological Survey 2013).

The Surface Mining Reclamation Act requires that the State Mining and Geology Board map areas throughout the State of California that contain regionally significant mineral resources. Aggregate mineral resources within the state are classified by the board through application of the Mineral Resource Zone (MRZ) system. The MRZ system is used to map all mineral commodities within identified jurisdictional boundaries. The MRZ system classifies lands that contain mineral deposits and identifies the presence or absence of substantial sand and gravel deposits and crushed rock source areas (i.e., commodities used as, or in the production of, construction materials). The State Geologist classifies MRZs within a region based on the following factors:

1. MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
2. MRZ-2: Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
3. MRZ-3: Areas containing mineral deposits for which the significance cannot be determined from available data.
4. MRZ-4: Areas where available information is inadequate for assignment of any other MRZ category.

According to the California Department of Conservation’s Division of Mines and Geology, the project site is not within an MRZ-2 zone, which indicates the inclusion of known mineral deposits (Miller 1994). The project site is in an MRZ-3 zone, which indicates that significance cannot be determined from available data (Miller 1994). Similarly, the Division of Oil, Gas, and Geothermal Resources did not identify any existing oil wells within the immediate vicinity of the project site (California Department of Conservation 2014b). The closest well is slightly east of the intersection of Division Street and East Avenue I and is approximately 2.5 miles north of the proposed project limits.

Impact Analysis

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?*

Construction and Operation

No impact. Construction of the proposed project would not 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. The proposed project is within an MRZ-3 zone; therefore, the significance of any potentially present mineral resources cannot be determined due to limited data. However, the proposed project would merely widen an existing roadway, and would not restrict access to or prevent extraction of any known mineral resources within the project vicinity. Therefore, the proposed project would not 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. No impact would occur.

- 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?*

Construction and Operation

No impact. The proposed project is not within a locally important mineral resource discovery zone (Miller 1994), and would merely widen an existing roadway. Therefore, construction of the proposed project would not result in the loss of a locally important mineral resource recovery site, as delineated on a local general plan, specific plan, or other land use plan. No impact would occur.

Avoidance, Minimization, and Mitigation Measures

No potentially significant impacts related to mineral resources would occur as a result of the proposed project. Therefore, no avoidance, minimization, or mitigation measures are required.

Cumulative Impacts

Construction and Operation

No impact. The proposed project would not affect the extraction of mineral resources. Therefore, it would not contribute to a significant cumulative impact. No impact would occur.

XII. Noise	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The information in this section was derived from the *State Route 14/138 and Avenue K Interchange Improvements Project Noise Study Report (NSR)* (Caltrans 2017d).

Environmental Setting

The land uses surrounding the project alignment consist of single-family residences, hotels, and commercial land uses, some with outdoor dining areas. Traffic on nearby Avenue K and SR-14 are the primary sources of noise affecting the project area.

In order to document the existing noise levels in the project area, six short-term (ST) measurements and one long-term (LT) measurement were obtained near the project alignment (see Figure 3-1) between Tuesday, January 31 and Wednesday, February 1, 2017. These locations were selected to document the noise levels at representative locations in the vicinity of the project site and to determine changes in noise levels throughout a typical day. Each short-term measurement was conducted over a period of 15 to 20 minutes, at or near frequent human use areas associated with residential, hotel, or commercial land uses. Two consecutive short-term noise measurements were taken at each measurement location. The long-term measurement was conducted at location LT-1 over a period of approximately 24 hours from Tuesday to Wednesday, and includes the combined contributions of all noise sources in the area. LT-1 was approximately 250 feet east of the northbound SR-14 mainline, near the northbound SR-14 loop on-ramp from Avenue K. The hourly noise monitoring data from the long-term measurements are provided in graphical format on Figure 3-1. Additional details and a summary of the short-term and long-term measurement results are provided in Table 3-5 and Table 3-6, respectively. Short-term noise measurements indicate that the general noise levels at nearby receiver locations range from approximately 62 to 69 A-weighted decibels (dBA) 1-hour average noise level (L_{eq}) (when rounded to the nearest whole number). Field noise survey sheets are included in NSR.

Figure 3-1. Long-Term Monitoring at Site LT-1

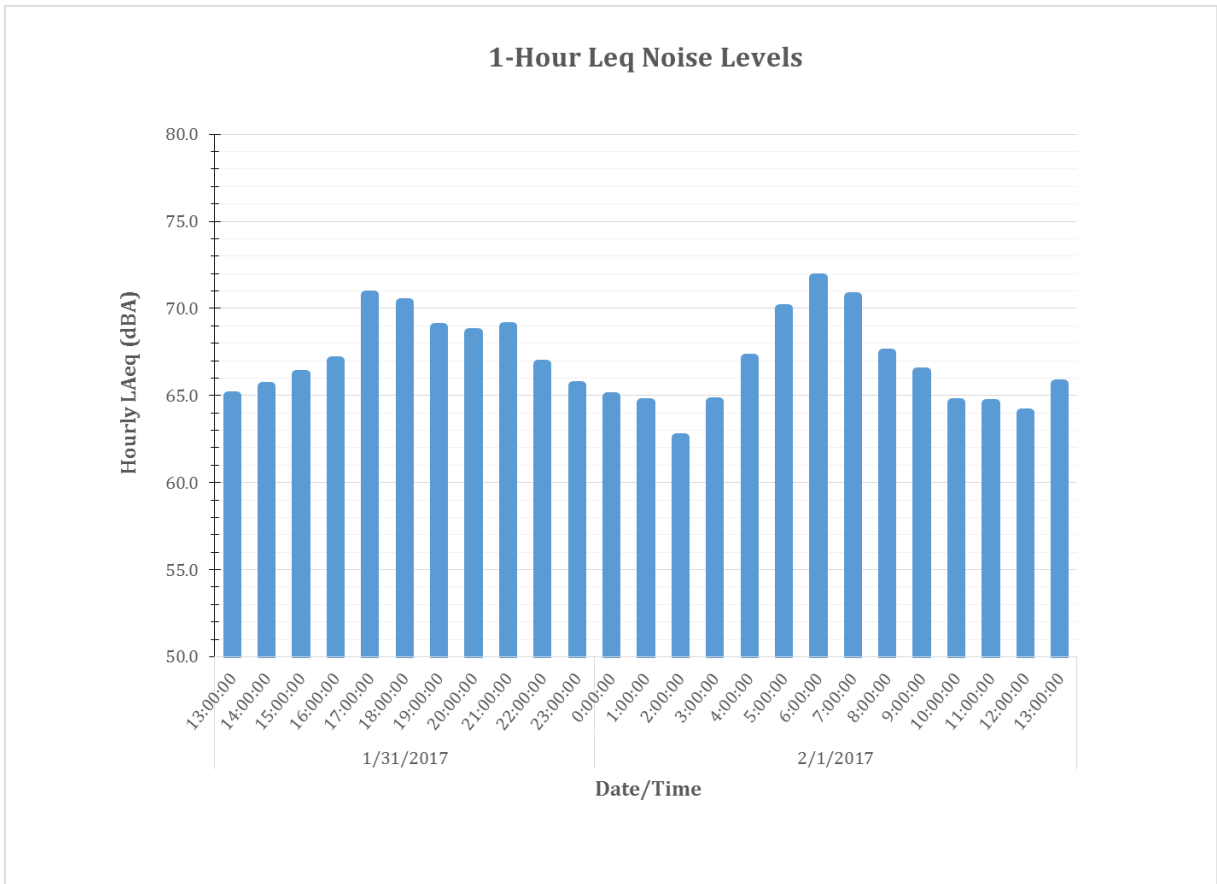


Table 3-5. Existing Short-Term Noise Levels in Study Area

Location Number, Description	Date, Time	Measured Noise Levels, dBA							
		L _{eq}	L _{min}	L ₉₀	L ₅₀	L ₂₅	L _{8.33}	L _{1.67}	L _{max}
ST-1: Backyard of single-family residence at 1805 West Avenue K, Lancaster, CA	02/01/2017, 10:24 a.m. - 10:39 a.m.	64.9	51.0	55.4	62.6	66.1	69.0	71.5	78.2
	02/01/2017, 10:43 a.m. - 10:58 a.m.	65.1	51.0	55.6	63.6	66.4	68.5	70.6	78.8
ST-2: Outdoor seating area at 1714 West Avenue K, Lancaster, CA	02/01/2017, 10:24 a.m. - 10:39 a.m.	66.0	51.3	55.5	61.8	65.0	68.5	73.0	86.2
	02/01/2017, 10:43 a.m. - 10:58 a.m.	64.3	51.8	56.4	61.8	65.3	67.4	70.0	80.2
ST-3: Sidewalk near 1715 West Avenue K, Lancaster, CA	02/01/2017, 09:10 a.m. - 09:30 a.m.	69.3	54.2	59.4	64.9	70.3	73.5	75.2	87.7
	02/01/2017, 09:36 a.m. - 09:56 a.m.	68.6	54.7	58.8	65.1	70.3	73.3	75.2	79.5
ST-4: Hotel pool area at 43540 17 th Street West, Lancaster, CA	02/01/2017, 09:10 a.m. - 09:30 a.m.	62.4	56.3	58.6	61.3	62.9	65.3	68.1	74.0
	02/01/2017, 09:36 a.m. - 09:56 a.m.	63.1	57.5	59.9	62.1	63.9	65.7	67.2	73.9
ST-5: Adjacent to south-facing façade of the commercial building at 1511 West Avenue K, Lancaster, CA	02/01/2017, 11:27 a.m. - 11:42 a.m.	67.6	55.3	61.6	65.6	68.7	70.9	74.1	82.1
	02/01/2017, 11:44 a.m. - 11:59 a.m.	68.0	67.1	61.3	65.6	68.2	70.8	75.9	82.7
ST-6: Adjacent to the outdoor seating area at 1106 West Avenue K, Lancaster, CA	02/01/2017, 11:27 a.m. - 11:42 a.m.	64.7	51.9	56.4	62.2	65.6	68.1	72.3	79.0
	02/01/2017, 11:44 a.m. - 11:59 a.m.	65.1	53.5	57.4	63.5	66.6	68.4	71.1	74.6

Notes: dBA = A-weighted sound level, the sound pressure level in decibels as measured using the A weighting filter network, which de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear; L_{eq} = equivalent sound level, the average of the sound energy occurring over the measurement period; L_{max} = maximum sound level; L_{min} = minimum sound level; L_{xx} = percentile-exceeded sound level, the sound level exceeded for a given percentage of a specified period (e.g., L₂₅ is the sound level exceeded 25% of the time, and L₅₀ is the sound level exceeded 50% of the time)

Table 3-6. Existing Long-Term Noise Levels in Study Area

Location Number, Description	Date, Time	Measured Noise Levels, dBA	
		CNEL	Range of Hourly L_{eq}
LT-1: Near the Avenue K/northbound SR-14 loop on-ramp ^a	01/31/2017, 1:00 p.m. - 02/01/2017, 1:00 p.m.	74.2	Daytime: 64.0 – 70.8 Evening: 68.6 – 69.0 Nighttime: 62.6 – 71.8

^a Daytime indicates the range of hourly noise levels measured between 7 a.m. and 7 p.m. Evening indicates the range of hourly noise levels measured between 7 p.m. and 10 p.m. Nighttime indicates the range of hourly noise levels measured between 10 p.m. and 7 a.m.
CNEL = Community Equivalent Noise Level

Regulatory Setting: Noise Standards

The project alignment is within the City of Lancaster within the County of Los Angeles.

California Department of Transportation

Caltrans provides widely referenced vibration guidelines in its publication *Transportation and Construction Vibration Guidance Manual* (Caltrans 2013). While these guidelines do not represent strict standards that apply to the project, they are useful in establishing appropriate thresholds of impact, particularly because the City of Lancaster does not provide any quantitative standards for groundborne vibration levels. The manual defines two different types of potential vibration impact: (1) building damage potential and (2) annoyance potential, as summarized in Tables 3-7 and 3-8, below.

Table 3-7. Caltrans Vibration Damage Potential Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans 2013.
Notes: 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.
PPV = peak particle velocity; the maximum instantaneous positive or negative peak amplitude of the vibration velocity, measured in inches per second.

Table 3-8. Caltrans Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.90	0.10
Severe	2.00	0.40

Source: Caltrans 2013.
PPV = peak particle velocity; the maximum instantaneous positive or negative peak amplitude of the vibration velocity, measured in inches per second.

City of Lancaster General Plan 2030

The *City of Lancaster General Plan 2030* contains a noise element, which intends to provide an easily understood discussion of noise and its impacts, set guidelines to prevent noise and land use conflicts, and comply with state mandates (City of Lancaster 2009). Although the Noise Element does not contain specific guidance related to roadway improvement projects, Objective 4.3 states:

- Promote noise compatible land use relationships by implementing the noise standards identified in Table 3-1 to be utilized for design purposes in new development, and establishing a program to attenuate existing noise problem.

Table 3-9 does not define a specific maximum acceptable noise level for hotel land uses. Therefore, the land use compatibility guidelines for residential land uses (see Table 3-9) are used to determine the significance of potential traffic noise impacts for hotel land uses.

Table 3-9. City of Lancaster General Plan 2030 Noise/Land Use Compatible Land Use Objectives

Land Use Category	Maximum Exterior CNEL	Maximum Interior CNEL
Rural, Single Family, Multiple Family Residential	65 dBA	45 dBA
Schools:		
Classrooms	65 dBA	45 dBA
Playgrounds	70 dBA	--
Libraries	--	50 dBA
Hospitals/Convalescent Facilities:		
Living Areas	--	50 dBA
Sleeping Areas	--	40 dBA
Commercial and Industrial	70 dBA	--
Office Areas	--	50 dBA

CNEL = Community Equivalent Noise Level

Table 3-1 from the *City of Lancaster General Plan 2030* is represented in Table 3-10 below. Land use compatibility guidelines such as those in Table 3-10 (i.e., *City of Lancaster General Plan 2030* Table 3-1) are most commonly applied to transportation (i.e., non-stationary) noise sources.

Table 3-10. Typical Construction Noise Levels

Equipment	Noise Levels at 15 meters
Front End Loader	85 dBA
Bulldozer	85 dBA
Backhoe	80 dBA
Water Truck (or other heavy truck)	88 dBA
Generator	81 dBA
Concrete Mixer	85 dBA
Tamper/Roller	75 dBA
Paver	87 dBA

Sources: FTA 2006); EPA 1971).

City of Lancaster Municipal Code

Section 8.24 of the City of Lancaster Municipal Code provides the City's building construction hours of operation and the noise control ordinance. Section 8.24.040 of the Municipal Code states that construction or repair activities cannot occur on Sundays, or any other day after 8:00 p.m. or before 7:00 a.m., within 500 feet of any occupied dwelling, apartment, hotel, mobile home, or other place of residence.

Neither the *City of Lancaster General Plan 2030* nor the Municipal Code defines significance thresholds for substantial noise level increases. Because a portion of the proposed project is within Caltrans ROW, the Project Development Team determined a maximum limit for substantial noise increases that is consistent with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects* (Protocol) (Caltrans 2011). The Protocol defines a noise increase as *substantial* when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA or more.

Impact Analysis

Would the project:

- a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less-than-significant-impact. Noise generated by project construction activities would be less than significant with implementation of Avoidance and Minimization Measures **NOI-1** and **NOI-2**. Avoidance and Minimization Measure **NOI-1** is provided so that construction activities would conform to the provisions in Section 14-8.02, “Noise Control,” of Caltrans’ 2015 Standard Specifications and Special Provisions, as recommended in the project NSR. Avoidance and Minimization Measure **NOI-2** would limit construction activities to the hours permitted by the City of Lancaster’s municipal code and implement standard noise reduction measures. Traffic noise levels at Receivers M-4/ST-2 and M-14 are below the maximum exterior Community Equivalent Noise Level (CNEL) guidelines under existing conditions, and would be either below or at the maximum exterior CNEL guidelines under No-Build and Build conditions. Therefore, impacts for these receivers are considered less than significant. As described below, receivers M-5/ST-3 and M-13/ST-6 are not representative of outdoor frequent-use areas and are therefore not evaluated for CEQA significance. The remaining receiver locations are predicted to have CNEL noise levels above the maximum exterior CNEL guidelines under existing conditions, and would continue to be above the exterior CNEL guidelines under the No-Build Alternative and Build Alternative conditions. The comparison of the Build Alternative noise levels to No-Build Alternative noise levels (see Table 3-11) shows that the project’s contribution to future noise levels would be between 0 and 1 CNEL (dBA), which is considered an imperceptible change. Because noise levels at these receivers are already above the maximum exterior CNEL guidelines under existing conditions and the project’s contribution to future noise level increases would only be between 0 and 1 CNEL (dBA), the impacts at these receivers are considered less than significant.

Construction

Two types of short-term noise impacts could occur during project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site, which would incrementally raise noise levels on access roads leading to the project construction site. The pieces of heavy equipment for grading and construction activities would be moved on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the project vicinity. A high single-event noise exposure potential at a maximum level of 87 dBA maximum noise level (L_{max}) from trucks passing at 50 feet would exist. However, the projected construction traffic would be minimal when compared with existing traffic volumes on SR-14 and the local roadway network, namely Avenue K, and the associated long-term noise level change would not be perceptible. Therefore, construction-related worker commutes and equipment transport noise impacts would be short term and would not be significant.

The second type of short-term noise impact would be from construction activities. Construction is performed in distinct steps, each of which has its own mix of equipment and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated and the noise levels along the project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 3-10 lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

Table 3-11. Modeled Exterior Traffic Noise Levels and Change in Noise Levels

Site ID	Location	Land Use / Maximum Exterior CNEL (dBA)	CNEL (dBA)			Change in Noise Level Compared to Existing Conditions (dB)		Change in Noise Level Compared to No-Build Conditions (dB)
			Existing (2016)	No-Build Alternative (2040)	Build Alternative (2040)	No-Build Alternative (2040)	Build Alternative (2040)	
M-1	2005 West Avenue K	Commercial / 70	71	71	71	0	0	0
M-2	1816 West Avenue K	Residential / 65	66	67	67	1	1	0
M-3/ ST-1	1805 West Avenue K	Residential / 65	67	68	68	1	1	0
M-4/ ST-2	1714 West Avenue K	Commercial / 70	69	70	70	1	1	0
M-5/ ST-3	1715 West Avenue K	Sidewalk / n/a	72	73	74	1	2	1
M-6	1711 West Avenue K	Commercial / 70	72	73	74	1	2	1
M-7	1650 West Avenue K	Commercial / 70	67 ¹	68 ¹	69 ¹	1	2	1
M-8	1651 West Avenue K	Hotel / 65	66	69	69	3	3	0
M-9/ ST-4	43540 17 th St West	Hotel / 65	68	70	70	2	2	0
M-10/ ST-5	1511 West Avenue K	Commercial / 70	71	72	73	1	2	1
M-11	1221 West Avenue K	Commercial / 70	74	75	75	1	1	0
M-12	1200 West Avenue K	Commercial / 70	72	72	73	0	1	1
M-13/ ST-6	West of 1106 West Avenue K	Parking Lot / n/a	68	69	69	1	1	0
M-14	1106 West Avenue K	Commercial / 70	68	69	69	1	1	0
M-15	43559 10 th Street West	Commercial / 70	71	72	72	1	1	0
M-16	855 West Avenue K	Commercial / 70	71	72	72	1	1	0

¹ A 2 dB reduction was applied to these noise levels to account for a barrier located around the receiver location that was not included in the TNM modeling used for the project's NSR.

Typical noise levels at 50 feet from an active construction area could reach 88 dBA during the noisiest construction phases. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavation machinery such as backfillers, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Because not all of the equipment would be operating at the same time or for the entire day, the L_{eq} from project construction would be substantially lower and 88 dBA L_{eq} is considered a conservative estimate. In addition, any increase in the background noise level due to project construction would be temporary. Construction of the proposed project would be subject to the City's Municipal Code, which restricts construction anytime on Sunday, or any other day after 8:00 p.m. or before 7:00 a.m., within 500 feet of any occupied dwelling, apartment, hotel, mobile home, or other place of residence. The nearest single-family residences are at the intersection of West Avenue K and 18th Street West, approximately 50 feet south of the edge of roadway on eastbound Avenue K. Additionally, a Motel 6 and the Oxford Inn & Suites are within 1,000 feet of the SR-14/Avenue K interchange.

As described in the project NSR, construction activity that does not comply with Section 14-8.02, "Noise Control," of Caltrans' 2015 Standard Specifications and Special Provisions could cause a significant impact. Therefore, Avoidance and Minimization Measure **NOI-1** is provided so that construction activities conform to Section 14-8.02.

The project is within 500 feet of the nearest residence; therefore, any construction that occurs outside of the hours permitted by the City's Municipal Code could cause a significant impact. Avoidance and Minimization Measure **NOI-2** is provided to limit noise-generating construction activity to the permitted daytime hours and to implement standard noise reduction methods to minimize potential annoyance at nearby noise-sensitive receptors. With the implementation of Avoidance and Minimization Measures **NOI-1** and **NOI-2**, impacts would be less than significant.

Operation

Project-Related Traffic Noise. The NSR prepared for the proposed project was used to identify the peak-hour noise levels at modeled land uses located along the project alignment. Traffic noise impacts from the proposed project were modeled using traffic volumes from the project-specific 2017 *Traffic Operations Analysis Report* (Caltrans 2017b). Vehicle mix (i.e., percentage automobiles, medium trucks, and heavy trucks) data were derived from a traffic memo provided by the Fehr & Peers traffic engineers (Fehr & Peers 2017). Operational traffic noise for the proposed project was analyzed using the Federal Highway Administration's Traffic Noise Model (TNM). Sixteen different modeled receivers were evaluated under the following traffic conditions:

- Existing Year (2016)
- Design Year (2040) No-Build Alternative
- Design Year (2040) Build Alternative

Table 3-11 shows modeled receptors and the representative noise levels under these conditions for the proposed project. CNEL values reported in Table 3-11 were derived from modeled peak-hour L_{eq} values using the 24-hour measured noise data. A conservative 2-dB reduction was applied to the receiver M-7 CNEL noise levels reported in Table 3-11 to account for a barrier around the outdoor seating area that was not included in the TNM modeling used for the project's NSR.

Table 3-11 includes measured and modeled-only receiver locations. Receiver locations M-5/ST-3 and M-13/ST-6 were located in public access areas and are not representative of actual outdoor frequent-use areas. Modeling-only receiver locations M-6 and M-14 are representative of the outdoor frequent-use areas nearest to the M-5/ST-3 and M-13/ST-6 locations, respectively. Only actual outdoor frequent-use areas are evaluated for the purposes of assessing CEQA significance.

A noise impact is considered to be significant where the difference between with-project and existing conditions is more than 12 decibels (dB) and/or the resulting with-project noise level is greater than the maximum exterior CNEL (dBA) noise objectives, as reported in Table 3-9 and Table 3-11. Under the Build Alternative condition, there would be no receivers where noise levels are expected to increase by more than 12 dB when compared to existing or No-Build Alternative conditions.

As shown in Table 3-11, receivers M-4/ST-2 and M-14 are below the maximum exterior CNEL guidelines under existing conditions, and would be either below or at the maximum exterior CNEL guidelines under the No-Build Alternative and Build Alternative conditions. Therefore, impacts for these receivers are considered less than significant. As mentioned above, receivers M-5/ST-3 and M-13/ST-6 are not representative of outdoor frequent-use areas and are therefore not evaluated for CEQA significance. The remaining receiver locations are predicted to have CNEL noise levels above the maximum exterior CNEL guidelines under existing conditions, and these levels would continue to be above the exterior CNEL guidelines under No-Build Alternative and Build Alternative conditions. The comparison of the Build Alternative noise levels to No-Build Alternative noise levels shows that the project's contribution to future noise levels would be between 0 and 1 CNEL (dBA), which is considered an imperceptible change. The comparison of Build Alternative noise levels to existing noise levels show an increase in noise levels between 0 and 3 CNEL (dBA), which is considered a barely perceptible change. Because noise levels at these receivers are already shown to be above the maximum exterior CNEL guidelines under existing conditions and future noise level increases would only be between 0 and 3 CNEL (dBA) relative to existing conditions, the impacts at these receivers are considered less than significant.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Construction

Less-than-significant impact. Vibration from typical heavy construction equipment operation that would be used during project construction ranges from 0.076 to 0.089 inch per second peak particle velocity (PPV) at 25 feet from the source of activity.

Because neither the state nor the local municipalities maintain regulatory standards for vibration sources, potential structural damage and human annoyance associated with vibration from construction activities were evaluated against Caltrans vibration limits. A vibration threshold level of 0.10 inch per second PPV was used to evaluate impacts on nearby receivers because this level represents the boundary between barely perceptible and distinctly perceptible vibration as recognized by Caltrans and others. Because vibration levels from project construction are predicted to be well below applicable vibration thresholds, impacts from groundborne vibration or groundborne noise would be less than significant.

Operation

Less-than-significant impact. The proposed project does not involve changes that would result in noticeable increases in groundborne vibration or groundborne noise levels from use or maintenance of the roadway when compared to the No-Build Alternative. Upon project completion, long-term increases in noise and vibration levels from use or maintenance of the roadway would be less than significant.

- c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

Construction and Operation

Less-than-significant impact. Construction noise would be temporary and, as such, would not cause any permanent increases in ambient noise levels. Implementation of the proposed project would result in an increase in traffic noise levels by 0 to 3 CNEL (dBA) when compared to existing conditions and 0 to 1 CNEL (dBA) when compared to No-Build conditions (see Table 3-11). These increases are well-below the 12-dB significance threshold for noise level increases, and the impact is therefore considered less than significant.

- d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

Construction and Operation

Less-than-significant-impact. Ambient noise level increases due to operation of the proposed project would be permanent and are discussed above under Item XII.c; therefore, temporary impacts associated with project operation would be less than significant. The Build Alternative could potentially result in a temporary increase in ambient noise levels in the project vicinity associated with construction of the proposed project. As shown in Table 3-10, construction equipment noise levels range from 75 to 88 dBA. Because not all of the equipment would be operating at the same time or for the entire day, the hourly equivalent sound level ($L_{eq}(h)$) from project construction would be substantially lower. In addition, any increase in the background noise level due to project construction would be temporary. Significant noise impacts would be avoided by implementation of Avoidance and Minimization Measures **NOI-1** and **NOI-2**, which would reduce noise from construction activities to the extent practicable and limit construction activities to the hours permitted by the City of Lancaster municipal code; therefore, impacts would be less than significant.

- e. For a project located within an airport land use land use plan or, where such a plan has not been adopted, within 2 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?*

Construction and Operation

No impact. The proposed project site is not within a 2-mile radius of any public airport; therefore, no noise impacts related to air traffic are would occur.

- f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

Construction and Operation

No impact. The proposed project site is not within a 2-mile radius of any private airstrip; therefore, no noise impacts related to air traffic are would occur.

Avoidance, Minimization, and Mitigation Measures

- **Avoidance and Minimization Measure NOI-1: Conform to the provisions in Section 14-8.02, “Noise Control,” of Caltrans’ 2015 Standard Specifications and Special Provisions.** The following noise control measure shall be incorporated into the project contract specifications in order to minimize construction noise effects:
 - Conform to the provisions in Section 14-8.02, “Noise Control,” of Caltrans’ 2015 Standard Specifications and Special Provisions, which stipulates that construction shall not exceed 86 dBA L_{max} at 50 feet from the job site from 9 p.m. to 6 a.m., and that internal combustion engines shall be equipped with the manufacturer-recommended muffler. Internal combustion engines shall not be operated on the job site without the appropriate muffler.
- **Avoidance and Minimization Measure NOI-2: Limit construction hours and employ noise-reducing construction practices.** The following noise control measures shall be incorporated into the project contract specifications in order to minimize construction noise effects:
 - Construction activities shall be limited to the hours of 7:00 a.m. to 8:00 p.m. on weekdays and Saturdays, and shall not occur at any time on Sundays. Construction personnel shall not be permitted on the job site, and material or equipment deliveries and collections shall not be permitted outside of these hours. Should construction be required to occur outside of the permitted hours, an exception (pursuant to the express written permission of the City Engineer) would be required as described under Section 8.24.050 of the City’s Municipal code. Should an exception be granted, the contractor shall continue to conform to the provisions in Section 14-8.02, “Noise Control,” of Caltrans’ 2015 Standard Specifications and Special Provisions.
 - All construction equipment and vehicles using internal combustion engines shall be equipped with air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification.
 - All mobile or fixed construction equipment used on the project that is regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of project activity.
 - All construction equipment shall be properly maintained. (Poor maintenance of equipment may cause excessive noise levels.)
 - All construction equipment shall be operated only when necessary and shall be switched off when not in use.
 - Construction employees shall be trained in the proper operation and use of the equipment. (Careless or improper operation or inappropriate use of equipment can increase noise levels. Poor loading, unloading, excavation, and hauling techniques are examples of how a lack of adequate guidance and training may lead to increased noise levels.)
 - Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
 - Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
 - Construction site speed limits shall be established and enforced during the construction period.
 - The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

- To minimize potential public objections to unavoidable noise, the contractor shall maintain good communication with the surrounding community regarding the schedule, duration, and progress of the construction. Notification shall be provided advising that there will be loud noise associated with the construction and providing a telephone contact number for affected parties to ask questions and report any unexpected noise levels. The onsite construction supervisor shall have the responsibility and authority to receive and resolve noise complaints.

Cumulative Impacts

Construction and Operation

Less-than-significant impact. The study area for noise includes the area within 0.5 mile of each side of the project. Currently, there is one planned development in the vicinity of the proposed project. The planned development is a 20,000-square-foot commercial development at the intersection of 10th Street West and Avenue K. The construction schedule for this development is unknown at this time. Construction of this development could potentially overlap with construction of the proposed project. Caltrans' provisions in Section 14-8.02, "Noise Control," of the 2015 Standard Specifications and Special Provisions and the City municipal code would place restrictions and time limits on construction activities. Due to adherence to these codes and implementation of the noise control measures provided in Avoidance and Minimization Measures **NOI-1** and **NOI-2**, the cumulative impact associated with the projects' construction noise would be less than significant.

Cumulative noise impacts were considered for Design Year (2040) No-Build Alternative and Build Alternative conditions, which account for future development in the project area. As a result, the analysis contained in the above section constitutes the operational noise cumulative analysis for the project. As discussed in the above section, the proposed project and other cumulatively considered projects would increase operational noise levels by 0 to 3 CNEL (dBA) when compared to existing conditions, which is considered a barely perceptible change; therefore, the project would not contribute either directly or indirectly to cumulatively considerable noise impacts.

XIII. Population and Housing	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Information in this section is based on the *Community Impact Assessment* (Caltrans 2018h).

Census data from U.S. Census Bureau 2010–2014 American Community Survey 5-Year Estimates were used to describe the regional and community demographic characteristics within the project study area.

The proposed project is in the City of Lancaster, which is in Los Angeles County. The City’s population is approximately 159,092 people based on 2014 United States Census 5-year estimates (U.S. Census Bureau 2014). Los Angeles County, as a whole, is estimated to have a population of 9,974,203 people. There are a total of 18 census block groups within a half mile of the project corridor. The 18 census block groups have a total population of 26,774 people. The number of housing units in Lancaster is approximately 53,030, and the home ownership rate based on 2014 5-year estimates was 58.3 percent. In general, there is a much lower percentage of occupied units in the 18 census block groups than that of the county or City. There is a particularly high vacancy rate for housing units in Block Groups 9007.01-1, 9007.03-2, and 9007.03-3, all located east of SR-14 in the City of Lancaster. Almost all of the study area block groups indicate a very high rate of renter-occupied housing units, with the exception of Block Groups 9007.01-3, 9007.05-1, 9010.09-1, 9010.09-3, and 9010.11-1. This is an indication of the presence of large numbers of apartment rental units close to the SR-14 corridor in the City of Lancaster.

Impact Analysis

Would the project:

- a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?***

Construction

Less-than-significant impact. The proposed project would not induce substantial population growth in the vicinity of the proposed project. Because of the highly specialized nature of most construction projects, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. For that reason, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed project. Therefore, project construction activities would not induce population growth, nor would they necessitate the construction of new homes or businesses. As a result, construction-related impacts would be less than significant.

Operation

Less-than-significant impact. The proposed project would not include housing or commercial developments that would directly increase the number of residents or employees in the area, nor would it contribute to the development of additional homes and businesses in the Lancaster community. While the proposed project would widen the existing roadway to accommodate future traffic needs, it would not significantly induce indirect growth in the area. As such, impacts would not be considered growth inducing, either directly or indirectly, and operational impacts would be less than significant.

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Construction and Operation

No impact. The proposed project would not involve the construction or demolition of housing. Therefore, proposed project construction and operation would not temporarily displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere. As such, there would be no construction-related impacts.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Construction and Operation

No impact. No residents or people would lose their housing along the proposed project site; although partial acquisition of residential, commercial, and vacant lots would occur, it is not anticipated that any structures, businesses, or residences would be displaced as a result of the project. Therefore, no persons would be temporarily displaced as a result of project construction or operation. Consequently, the construction of replacement housing would not be necessary, and no construction-related impacts would occur.

Avoidance, Minimization, and Mitigation Measures

No potentially significant impacts related to population and housing would occur as a result of the proposed project. Therefore, no avoidance, minimization, or mitigation measures are required.

Cumulative Impacts

Construction and Operation

No impact. The proposed project would not affect population and housing, directly or indirectly. Therefore, it would not contribute to a significant cumulative impact. When considered along with other related projects, the proposed project is not expected to contribute to a cumulatively significant impact on population and housing or a considerable contribution to cumulative population and housing impacts.

XIV. Public Services	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services:				
1. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Fire Protection Services

The Los Angeles County Fire Department (LACFD) provides fire, safety, and emergency medical services to the proposed project site. There are three major geographic regions in the service area of LACFD, which are divided into nine divisions and 22 battalions.

The closest fire station to the project site is LACFD Station 134, at 43225 N. 25th Street West, approximately 1 mile (by roadway) southwest of the project site. The next closest fire stations are LACFD Stations 33 and 129, 2.3 miles north and 2.8 miles northeast of the project site, respectively.

Police Protection Services

The Los Angeles County Sheriff’s Department (LASD) provides law enforcement services to the project area. LASD provides law enforcement services to more than one million people living within 90 unincorporated communities, as well as to more than four million residents living within 40 contract cities. In addition to proactive enforcement of criminal laws, LASD also provides investigative, traffic enforcement, accident investigation, and community education functions. The Field Operation Regions are centered on 23 patrol stations that are dispersed throughout Los Angeles County. LASD also maintains mutual aid agreements across jurisdictional boundaries for emergency response needs that exceed local resources (County of Los Angeles 2016).

The project site is within the jurisdiction of LASD Lancaster Station, approximately 2.1 miles (by roadway) northeast of the project site at 501 W. Lancaster Boulevard, in the City of Lancaster. This Sheriff’s Station serves the City of Lancaster and the communities of Lake Los Angeles, Quartz Hill, and Antelope Acres.

Additionally, the California Highway Patrol Antelope Valley Area, approximately 2 miles north at 2041 West Avenue I, is responsible for patrolling approximately 30 miles of SR-14 and approximately 1,400 miles of unincorporated roadways. The California Highway Patrol and Caltrans take the lead in handling transportation emergency incidents resulting from hazardous materials. In addition, local jurisdictions typically have several private ambulance companies that provide emergency transportation services.

Public Schools

The elementary, high school, and college districts serving the Lancaster area include: Lancaster Public School District, Antelope Valley Union High School District, Westside School District, California State University – Bakersfield, and Antelope Valley Community College District. Each is an independent agency governed by a Board of Trustees.

The Lancaster Public School District operates 20 schools throughout the Lancaster area. Antelope Valley Unified High School District operates nine high schools, three academies, four alternative education facilities, and one adult education facility. In 2016, the Antelope Valley Unified High School District enrolled over 23,000 students. The closest schools to the project site are Sunnydale Elementary School and Miller Elementary School, which are 0.2 and 0.4 mile from the project site, respectively.

Parks

The City of Lancaster Parks, Recreation and Arts Department provides public park services to the area. The nearest public recreation facility is Sgt. Steve Owen Memorial Park at 43063 10th Street West. Sgt. Steve Owen Memorial Park includes meeting rooms, an auditorium, a kitchen, restrooms, picnic tables and shelter, barbecue facilities, open play areas, a playground, walking trails, basketball courts, softball fields, tennis courts, and volleyball courts that serve the population in the surrounding community.

Impact Analysis

Would the project result in substantial adverse physical impacts associated with:

a1. Fire protection?

Construction

No impact. Construction of the proposed project would not require the expansion of existing fire service facilities or the development of new facilities, as it would not include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth.

The construction site would require fire protection services. Regarding response times, standard BMPs would be employed during the construction process to ensure fire safety. Construction activities may result in intermittent access restrictions for emergency responders in the form of temporary delays on Avenue K and 15th Street West associated with deliveries and the off-haul of construction materials. Temporary lane or road closures may occur. However, as described further in Section XVI, *Transportation/Traffic*, such delays would be infrequent and brief, and the potential reduction in emergency access would not result in conditions that would be substantially different from existing conditions on roadways that surround the project site. The nearest local fire responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. As a result, no impacts would occur.

Operation

No impact. The proposed project would not result in an increase in the demand for fire protection services when compared to existing conditions. An increase in fire protection services typically results from a change in housing or population in an area. The proposed project would not increase the number of housing units or the resident population in the surrounding community, including the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth. As a roadway widening and ramp improvement project, the proposed project

would not increase the use of existing fire services such that new or physically altered governmental facilities would be required. Substantial physical deterioration of the facilities would not occur or be accelerated. Because the project would widen the existing roadway and improve access to SR-14 and the areas surrounding Avenue K, an improvement in fire service access may result from the project. Therefore, the proposed project would not necessitate the construction or expansion of fire facilities in order to maintain acceptable service levels or performance standards. Impacts would not occur.

a2. Police protection?

Construction

No impact. Construction of the proposed project would not require the expansion of existing police protection facilities or the development of new facilities, as it would not include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth.

The construction site would require police protection services to ensure such crimes as theft and vandalism are minimized. However, standard BMPs would be employed during the construction process to ensure security. During the construction period, the proposed project may result in intermittent access restrictions for emergency responders in the form of temporary delays on Avenue K and 15th Street West associated with deliveries and the off-haul of construction materials. Temporary lane or road closures may occur. However, as described further in Section XVI, *Transportation/Traffic*, such delays would be infrequent and brief, and the potential reduction in emergency access would not result in conditions that would be substantially different from existing conditions on roadways that surround the project site. Additionally, the nearest local police responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, construction of the proposed project would not require new or altered police facilities to maintain acceptable service ratios, response times, or other performance objectives. As a result, impacts would not occur.

Operation

No impact. As mentioned, the proposed project would not increase the number of housing units or the resident population in the surrounding community, include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth. Because the project would widen the existing roadway and improve access to SR-14 and the areas surrounding Avenue K, an improvement in police service access may result from the project. Therefore, operation of the proposed project would not result in a substantial increase in the demand for overall police protection services and Impacts would not occur.

a3. Schools?

Construction and Operation

No impact. Construction of the proposed project would not result in adverse impacts on schools. Because of the highly specialized nature of most construction projects, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. Consequently, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed project. Because the proposed widening would not include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth, it would not increase the demand for, and use of, existing schools, and no new or altered schools would be necessary. No impacts would occur.

a4. Parks?

Construction

No impact. As discussed in Section XV, *Recreation*, construction of the proposed project would not result in adverse impacts on parks. Because of the highly specialized nature of most construction projects, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. Consequently, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed project. As a result, construction of the proposed project would not increase the local population. Because the proposed widening would not include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth, it would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. No impact would occur.

Operation

No impact. As discussed in Section XV, *Recreation*, operation of the proposed project would not result in significant impacts on parks and recreational facilities. An increase in the use of existing parks and recreational facilities typically results from a change in housing or population in an area. The proposed project would not increase the number of housing units or the resident population in the surrounding community, include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth. Consequently, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. Therefore, no impacts would occur.

a5. Other public facilities?

Construction and Operation

No impact. The proposed project would not result in significant impacts on other public facilities. Physical impacts on public services are usually associated with population changes, which can change the demand and funding for facilities. As discussed above, the proposed project would not increase the local population during construction or operation. It would not increase the number of housing units or the resident population in the surrounding community, include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth. Therefore, the proposed project would not result in an increased demand requiring new or physically altered public facilities and impacts would not occur.

Avoidance, Minimization, and Mitigation Measures

No potentially significant impacts related to public services would occur as a result of the proposed project. Therefore, no avoidance, minimization, or mitigation measures are required.

Cumulative Impacts

Construction and Operation

No impact. The proposed project would not increase population growth, as it would not increase the number of housing units or the resident population in the surrounding community, include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth. Therefore, construction or operation of the proposed project would not increase the demand for public services and would not contribute to any cumulative impact.

Although construction of the proposed project could diminish access for emergency responders due to lane closures, coordination with the emergency providers prior to and during construction and the implementation of traffic control measures would ensure impacts are minimized. As a consequence, the cumulative construction impacts of the proposed project and one planned development in the project area (assuming the proposed and related projects occur simultaneously) on public services are not expected to be cumulatively considerable.

XV. Recreation	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The nearest public recreation facility is Sgt. Steve Owen Memorial Park located at 43063 10th Street West, farther south of the project site. The park includes meeting rooms, an auditorium, a kitchen, restrooms, picnic tables and a shelter, barbecue facilities, open play areas, a playground, walking trails, basketball courts, softball fields, tennis courts, and volleyball courts and other amenities that serve the population in the surrounding community.

Impact Analysis

Would the project:

- a. 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?*

Construction

No impact. An increase in the use of existing parks and recreational facilities typically results from a change in housing or population in an area. Because of the highly specialized nature of most construction projects, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. For that reason, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed project. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. As a result, no impacts would occur.

Operation

No impact. As previously discussed, an increase in the use of existing parks and recreational facilities typically results from a change in housing or population in an area. The proposed project would not increase the number of housing units or the resident population in the surrounding community, include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth. The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. Furthermore, the project would not require the construction of new recreational facilities. Therefore, no impacts would occur.

b. Include recreational facilities or require the construction of or expansion of recreational facilities that might have an adverse physical effect on the environment?

Construction

No impact. As previously discussed, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. For that reason, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed project. Therefore, because the project would not induce population growth or include temporary worker housing, the proposed project would not require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. No impact would occur.

Operation

No impact. The project would not include the development of any recreational facilities. As described above, the project would not have a significant impact on or require expansion of existing recreational facilities because it would not substantially change the number of housing units or residents in the vicinity, include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth. Therefore, the proposed project would not require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. As a result, no impacts would occur.

Avoidance, Minimization, and Mitigation Measures

No potentially significant impacts related to recreation would occur as a result of the proposed project. Therefore, no avoidance, minimization, or mitigation measures are required.

Cumulative Impacts

Construction and Operation

No impact. A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact when considered with past, present, and reasonably foreseeable future projects. Currently, there is one planned development in the vicinity of the proposed project. The planned development is a 20,000-square-foot commercial development at the intersection of 10th Street West and Avenue K. Construction of the development has yet to begin. Neither the proposed project nor the related project would significantly affect the use of recreation facilities, nor would they increase population growth thereby increasing demand for recreation facilities, as they would not increase the number of housing units or the resident population in the surrounding community, include the construction of new housing, require permanent relocation for temporary workers, or substantially induce direct and/or indirect population growth. Therefore, the proposed project would not contribute to a potentially significant cumulative impact.

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

The purpose of the proposed project is to reduce congestion and improve traffic operations and safety on Avenue K and 15th Street West while incorporating enhanced mobility for all travel modes in the area. Population and employment growth, housing development, and constrained geometrics have resulted in increased traffic congestion along Avenue K between 20th Street West and 10th Street West. Avenue K currently carries approximately 1,000 vehicles per direction in the AM and PM peak hours. Traffic demand on SR-14 at Avenue K has increased in the past several years due to regional and local land use development. Continued growth in traffic demand in the study area will exacerbate congestion levels thereby adversely affecting mobility and safety.

The information in this section was derived from the *2017 Traffic Operations Analysis Report* (Caltrans 2017b). The report provides an analysis of Opening Year (2020) and Design Year (2040) conditions both with and without the project.

Impact Analysis

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?***

AVTA provides transit services and bus stops within the project limits and immediate vicinity of the project site. There are several bus stops for AVTA Bus Lines 1, 4, 5, 9, 11, 12, and 94 within the project site limits. The project would make improvements to existing bicycle and pedestrian facilities, which would not conflict with any applicable adopted policies, plans, or programs for these facilities.

Construction

Less-than-significant impact. Construction of the proposed project would seek to avoid, but may require, temporary bus transit detours or relocation of bus stops. In addition, temporary lane closures may lead to increased congestion on the roadway during project construction. A TMP will be prepared and implemented as described by Avoidance and Minimization Measure **TRF-1**, which would address the need to coordinate any potential effects on bus routes or bus stops with transit providers, including AVTA, and include measures to minimize the extent of traffic impacts during construction to the extent practicable. Impacts would be less than significant with implementation of Avoidance and Minimization Measure **TRF-1**.

Operation

No impact. The *Traffic Operations Analysis Report* was prepared for the proposed project documenting the existing (2016), Opening Year (2020) and Horizon Year (2040) conditions. The No-Build Alternative and the Build Alternative were evaluated for Opening Year (2018) and Horizon Year (2040) conditions.

The intersection analysis locations have been reviewed and approved by the City of Lancaster, the local responsible agency. Nine intersections have been analyzed, as listed below:

- 15th Street West and Avenue J-8⁵
- 30th Street West and Avenue K⁴
- 20th Street West and Avenue K
- 17th Street West and Avenue K
- SR-14 southbound ramps and Avenue K
- SR-14 northbound ramps/15th Street West and Avenue K
- 12th Street West and Avenue K

⁵ The 15th Street West/Avenue J-8 and 30th Street West/Avenue K intersections are included for informational purposes only, because no improvements are considered at these locations as part of the proposed project.

- 10th Street West and Avenue K
- 15th Street West and private driveway

In addition, the following freeway segments on SR-14 have been analyzed:

- Ramp merge: northbound on-ramp from Avenue L
- Mainline: SR-14 northbound between Avenue L and Avenue K
- Ramp diverge: northbound off-ramp to Avenue K
- Ramp merge: northbound on-ramp from eastbound Avenue K
- Ramp merge: northbound on-ramp from westbound Avenue K
- Ramp diverge: northbound off-ramp to 20th Street West
- Ramp merge: southbound on-ramp from West Avenue J-8
- Ramp diverge: southbound off-ramp to Avenue K
- Ramp merge: southbound on-ramp from westbound Avenue K
- Ramp merge: southbound on-ramp from eastbound Avenue K
- Mainline: southbound between Avenue K and Avenue L
- Ramp diverge: southbound off-ramp to Avenue L

Traffic Operations Analysis Methodology

Intersection Operations

Peak hour traffic operations at the intersections were analyzed using the Highway Capacity Manual (HCM) 2010 (Transportation Research Board 2010) operations methodology. The HCM 2010 approach provides an accurate assessment of the effect of signal operational changes, such as signal timing and phasing, cycle lengths, signal progression and coordination, clearance intervals, and others, on the evaluation of intersection operations.

With the HCM 2010 methodology, LOS thresholds are based on the average delay incurred by vehicles traveling through the intersection. This methodology determines the capacity of each lane group approaching the intersection. The LOS is based on average delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average delay and LOS are presented for the intersection.

Intersection LOS ranges from LOS A, which indicates free-flow or excellent conditions with short delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays. In Lancaster, the minimum acceptable LOS used to define roadway segments is LOS D during peak hour commute periods. The LOS was calculated using Trafficware's Synchro 9 software package.

Delay for signalized intersections operating at LOS D is typically reported as “greater than 35.0 seconds and less than 55.0 seconds.” For informational purposes, the volume to capacity (v/c) ratio is also shown in this report. Table 3-12 includes the LOS ranges for signalized and unsignalized intersections.

Weekday intersection turning movement vehicle counts were conducted during the morning (6:00 to 9:00 a.m.) and evening (4:00 to 7:00 p.m.) peak periods at all of the study intersections in spring 2014. All counts were conducted while schools were in session. 2016 and 2020 intersection volumes were developed using straight line growth rates between 2014 counts and 2035 City of Lancaster model forecasts.

Queuing Analysis

The methodology for evaluating queuing on freeway off-ramps considers the length of vehicles queued as a result of the controlling off-ramp intersection. Both 50th and 95th percentile queue lengths were determined based on the HCM 2010 methodology using the results of the intersection LOS analysis. In general, Caltrans considers there to be a potential impact if the project results in additional vehicles at the controlling intersection that cause the 95th percentile off-ramp queue to exceed the available queuing space, or if the project adds additional vehicles to a location where the off-ramp queue already spills back to the freeway mainline.

Table 3-12. Levels of Service for Signalized and Unsignalized Intersections

Level of Service	Signalized Intersection Control Delay (seconds)	Unsignalized Intersection Delay (seconds)
A	0–10	0–10
B	> 10–20	> 10–15
C	> 20–35	> 15–25
D	> 35–55	> 25–35
E	> 55–80	> 35–50
F	> 80	> 50

Source: Transportation Research Board 2010.

Freeway Mainline Analysis

The mainline analysis was conducted using the Highway Capacity Software 2010, which is compliant with the HCM 2010. For freeway segments, the measure used to evaluate LOS is density, and the LOS density ranges are listed in Table 3-13. As stated in the HCM, the upper value shown for LOS E (45 passenger cars per mile per lane [pc/mi/ln]) is the maximum density at which sustained flows at capacity can occur. Flow breakdown and congestion as represented by LOS F occur when queues begin to form on the freeway. Density tends to increase sharply within the queue and may be considerably higher than the maximum 45 pc/mi/ln for LOS E. When freeway demand conditions exceed capacity, forced flow results, and the formulas used to estimate density are no longer applicable. Therefore, measures of freeway mainline density are not provided for LOS F conditions.

Table 3-13. Freeway Level of Service Definitions

Level of Service	Density (pc/mi/ln)		Description
	Basic Freeway Segment	Ramp Merge/Diverge	
A	< 11	< 10	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.
B	11 to 18	10 to 20	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.
C	18 to 26	20 to 28	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.
D	26 to 35	28 to 35	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.
E	35 to 45	>35	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.
F	> 45	Demand exceeds capacity	Represents a breakdown in flow.

Source: Transportation Research Board 2010; Exhibit 11-5 (Basic Segments) and Exhibit 13-2 (Merge/Diverge).

Future Projected Intersection Operations

Opening Year (2020) Conditions

All intersections are projected to operate at satisfactory LOS during year 2020 under No-Build and the proposed project conditions. The queuing analysis indicated that there would be adequate storage available at the SR-14 southbound and northbound loop on-ramps and the SR-14 southbound and northbound off-ramps. In addition, the ramp meter analysis indicated that, with maximum cycle lengths between 8.8 and 15 seconds, peak hour queues could be stored within the available storage capacity.

Design Year (2040) Conditions

Only one intersection is projected to operate at an LOS worse than D: 15th Street West and Avenue J-8, which is projected to operate at LOS E in the AM peak hour under each alternative. The LOS is projected to improve one letter grade in the AM and PM peak hours, from LOS D to LOS C, at the intersection of the northbound ramps/15th Street West and Avenue K under the proposed project. The LOS improves one letter grade in the PM peak hour, from LOS B to LOS A, at the intersection of the southbound ramps and Avenue K. Although the 15th Street West and Avenue J-8 intersection would operate at LOS E under the Build Alternative, the delay at other intersections would improve, which would improve overall traffic conditions.

The queuing analysis for the year 2040 under the Build Alternative indicates that there would be sufficient storage available on the off-ramp for the projected 95th percentile queues.

Future Projected Freeway Operations

Opening Year (2020) Conditions

Freeway analysis for the Opening Year (2020) conditions indicated that all the mainline and ramp segments are projected to operate at satisfactory LOS.

Design Year (2040) Conditions

Freeway mainline analysis for the Design Year (2040) conditions indicated that all segments are projected to operate at LOS D or better conditions during both peak hours. This is an arterial improvement project, and improvements to the freeway mainline are beyond the scope of this project. Because there are no proposed changes to the freeway mainline, the results of the freeway mainline analysis are the same for the year 2040 No-Build and proposed project conditions.

The proposed project would result in no impact and would instead help improve the LOS at study intersections and reduce queuing issues on the Avenue K and SR 14 southbound and northbound on- and off-ramps.

- 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?***

Construction

Less-than-significant impact. Construction of the proposed project would seek to avoid, but may require, temporary bus transit detours or relocation of bus stops. In addition, temporary lane closures may lead to increased congestion on the roadway during project construction. A TMP will be prepared and implemented as described by Avoidance and Minimization Measure **TRF-1**, which would address the need to coordinate any potential effects on bus routes or bus stops with transit providers, including AVTA, and include measures to minimize the extent of traffic impacts during construction to the extent practicable. Impacts would be less than significant with implementation of Avoidance and Minimization Measure **TRF-1**.

Operation

No impact. The proposed project would not cause an increase in traffic because there would be no trip generation (i.e., no new vehicle trips attributed to the proposed project). This is because the proposed project would not construct nor facilitate the construction of any new homes or businesses that would generate new vehicle trips. Project development would simply better facilitate existing traffic flow. The study area intersections, arterial roadways, and freeway segments fall within two jurisdictions: Caltrans and City of Lancaster. The City's standard for intersection operations is LOS D. Caltrans Route Concept Fact Sheets for SR-14 require LOS D during peak periods. For the purpose of this project, an LOS standard of LOS D has been used for intersections and freeway and ramp segments. The proposed project would generally improve LOS and reduce congestion when compared to the No-Build conditions and would not conflict with adopted City or County CMP performance standards.

- 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?***

Construction and Operation

No impact. The proposed project would not 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. Therefore, no traffic impacts related to air traffic would occur.

d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction and Operation

No impact. The evaluation of potential increases in hazards because of a design feature typically involve determining if any project-related features would result in changes to the circulation system that could result in physical impacts on automobile traffic or pedestrians. Some examples include poor sight distance at intersections, sharp roadway curves, and placement of a driveway/site access along a high-speed roadway. The proposed project would widen the roadway and include minor modifications to improve traffic operations. The improvements are intended to help the safety and operation of the existing roadway. The proposed project would not have any design features or incompatible uses that would increase hazards associated with traffic; therefore, no impacts would occur.

e. Result in inadequate emergency access?

Construction

Less-than-significant impact. Some traffic would be generated during project construction from construction vehicles; however, the amount of construction-related trips is anticipated to be small in comparison to the overall traffic volume carried by Avenue K. During construction, emergency vehicle access could be affected by partial lane closures. Access to the properties along both sides of the street would be maintained. A TMP will be prepared and implemented as described by Avoidance and Minimization Measure **TRF-1**, which would address vehicular access and would be coordinated with emergency service providers. Impacts would be less than significant with implementation of Avoidance and Minimization Measure **TRF-1**.

Operation

No impact. It is anticipated that construction of the proposed project would have a beneficial effect on emergency vehicle response times due to the new traffic lanes and roadway improvements. The improvements are intended to help relieve congestion and improve the safety and operation of the existing roadway. Because long-term operational impacts are anticipated to be a net benefit, operational impacts would not occur.

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?

Construction and Operation

No impact. The proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities and would not decrease the performance or safety of any facilities. As part of the City of Lancaster's comprehensive Complete Streets Plan, enhanced bicycle and pedestrian facilities and additional signage to improve wayfinding for freeway and local street access would be considered under the proposed project, including a new Class II bicycle lane on Avenue K, west of 15th Street West. Continuous sidewalks would be provided along both sides of Avenue K. Crosswalks would be maintained at all signalized intersections, with the exception of 15th Street West and Avenue K, where a new crosswalk on the east side of the intersection would replace the existing crosswalk on the west side of the intersection. A new crosswalk would be provided across the realigned southbound slip on-ramp. Therefore, it is anticipated that construction of the proposed project would have a beneficial effect on bicycle and pedestrian operations within the project limits due to the new traffic lanes and roadway improvements. The improvements are intended to help relieve congestion and improve the safety

and operation of the existing roadway. Because long-term operational impacts are anticipated to be a net benefit, operational impacts would not occur.

Avoidance, Minimization, and Mitigation Measures

- **Avoidance and Minimization Measure TRF-1: Prepare and Implement a Traffic Management Plan (TMP).** The TMP shall be provided to emergency service providers, transit providers, school officials, and utility providers with construction plans prior to commencement of construction. The following shall be included in the TMP or carried out in coordination with the TMP.
 - Implement a construction management program that maintains access to and from the project area community through signage, detours, flagmen, etc.
 - Coordinate with emergency services providers to ensure that alternative response routes to and from the project area community are in place during construction of the proposed project.
 - Coordinate with transit providers to ensure that alternative transit routes or stops are provided to and from the proposed project site.
 - Provide access to all fire hydrants along all access routes and provide and maintain fire department vehicle access roads along project site.
 - Consult with local school officials to identify safe vehicular routes and pedestrian crossing for students traveling to and from schools in the project area community during construction of the proposed project.
 - Prepare temporary detour plans during the Plans, Specifications, and Estimates phase.
 - Provide notification to be sent to emergency service providers, local school officials, and any residents that may be substantially affected by any street closures (including partial and/or full closures) or traffic diversions at least two weeks in advance of the planned closure or diversion.

Cumulative Impacts

Construction

Less-than-significant-impact. The proposed project would have a less-than-significant impact, because as part of the TMP (TRF-1), other ongoing construction projects would have to be factored in to ensure that any impacts related to traffic during construction of the proposed project, in combination with other projects in the area, would be minimized to the extent practicable.

Operation

No impact. The proposed project improvements under the proposed project would provide a net benefit to the traffic and transportation operations in the area, and thus would have a beneficial impact, regardless of other projects in the vicinity. Therefore, the proposed project would not contribute to any adverse operational cumulative traffic impacts.

	Significant and Unavoidable Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVI. 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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Impact Analysis

Would the project:

- a. *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 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)?*
- b. *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 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.*

No tribal cultural resources have been identified during consultation; however, Joan Schneider, Ph.D., of the San Manuel Band of Mission Indians (SMBMI), stated, “The proposed project area exists within Serrano ancestral territory and, therefore, is of interest to the Tribe.” Also, “SMBMI is aware that this particular area is documented as highly culturally sensitive to Tribe. Although there is substantial development within the project area the project area remains of concern to SMBMI... SMBMI will be requesting both archaeological and Native American monitoring when there is any ground-disturbing activity during the implementation of this project that is within original sediments that have not been previously disturbed.”

Construction

Less-than-significant impact. The absence of tribal cultural resources on the surface does not preclude their existence at the subsurface level. Significant buried tribal cultural resources could be discovered during construction-related ground disturbance within native soils. Implementation of Avoidance and Minimization Measures CUL-1, CUL-2, and CUL-3 would reduce this impact to a less-than-significant level.

Operation

No impact. There is no potential for unearthing buried tribal cultural resources because the proposed project would be a paved roadway and excavation or ground disturbance during operation would not occur. Therefore, archaeological resources would not be affected during operation of the proposed project.

Avoidance, Minimization, and Mitigation Measures

- **Avoidance and Minimization Measure CUL-1: Stop work if buried cultural deposits are encountered during construction activities.** If buried cultural resources, such as chipped or ground stone, historic debris, or building foundations, are inadvertently discovered during ground-disturbing activities, work shall immediately stop within a 100-foot radius of the find until a qualified archaeologist can assess the significance of the find, treat the find according to accepted practices, and, if necessary, develop a response plan. Preservation in place shall be the preferred treatment method, per State CEQA Guidelines Section 15126.4(b) (Avoidance, Open Space, Capping, Easement).
- **Avoidance and Minimization Measure CUL-2: Stop work if human remains are encountered during construction activities.** If human skeletal remains are encountered, ground-disturbing activities shall stop within a 100-foot radius of the discovery. Under HSC Section 7050.5, if human remains are discovered during any project activity, the County Coroner must be notified immediately. If human remains are exposed, HSC Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition, pursuant to California PRC Section 5097.98. If the County Coroner determines that the remains are Native American, the coroner shall contact the NAHC within 24 hours. A qualified archaeologist shall also be contacted immediately. The NAHC, pursuant to PRC Section 5097.98, shall immediately notify those persons it believes to be most likely descended from the deceased person so they can inspect the burial site and make recommendations for treatment or disposal.
- **Avoidance and Minimization Measure CUL-3: Archaeological and Native American monitoring of ground-disturbing activities.** Monitoring during all earth moving activities shall be performed by a qualified archaeologist and a professional tribal monitor from San Manuel Band of Mission Indians. At least 14 days before start of construction, Caltrans shall enter an agreement with San Manuel Band of Mission Indians specifying appropriate treatment of inadvertent discoveries of cultural resources. A tribal monitor shall be required on site during all ground-disturbing activities. The monitor shall have the authority to temporarily halt ground-disturbing activities in the area of the find to allow recovery of cultural resources in coordination with the Project Archaeologist.

Cumulative Impacts

Construction

Less-than-significant impact. Known tribal cultural resources are not present within the proposed project limits. However, there is always a possibility that archaeological resources could be unearthed during deeper excavation during project construction. Given the project's compliance with Avoidance and

Minimization Measures **CUL-1**, **CUL-2**, and **CUL-3**, even in the event that archaeological resources are discovered during construction, impacts would be expected to be less than significant and preservation of the materials would be sought so as not to result in an impact, or thus contribute to a cumulative impact on cultural resources.

Operation

No impact. The proposed project would not result in any impacts on tribal cultural resources during operation.

XVII. Utilities and Service Systems	Significant and Unavoidable Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Water

All of the water that is currently used in the Antelope Valley region comes from two sources: (1) naturally occurring water within the region (surface water and groundwater from rain and snow that falls in the Antelope Valley and on the surrounding mountains), as well as recycled water; and (2) State Water Project water (surface water that is collected in Northern California and imported into the Antelope Valley and other areas around the state). Recycled water and stormwater are secondary sources of water supply. A portion of the recycled water comes from the Antelope Valley region's two water reclamation plants, LACSD's plants in Palmdale and Lancaster (Antelope Valley Regional Water Management Group 2013).

Water is provided to the existing project vicinity by the Los Angeles County Waterworks District (LACWD) No. 40. LACWD, a division of the County of Los Angeles Department of Public Works, provides customers with water from three sources: local groundwater and water imported through the State Water Project and the Colorado River Aqueduct. The State Water Project is a system of reservoirs, pump stations, storage facilities, power plants, and 660 miles of pipes and canals that spans two-thirds the length of California. LACWD purchases imported water from local State Water Project contractors including the Antelope Valley-East Kern Water Agency, Castaic Lake Water Agency, and Metropolitan Water District of Southern California, or regional wholesale water agencies such as the Los Angeles Department of Water and Power and West Basin Municipal Water District. As an existing roadway, and a proposed roadway widening and interchange improvement project, the proposed project would require minimal on-site water uses.

The proposed project would construct a new 36-inch potable water line within Avenue K, between the curbs for the entire length and likely offset from the centerline. The trench would be approximately 8 feet wide and require a single lane closure during installation. The trench would be backfilled and the surface repaved to meet existing grade.

Wastewater

Wastewater management for the Antelope Valley is provided by LACSD. Wastewater generated in the project area is primarily conveyed to, and treated by, the Lancaster Water Reclamation Plant (WRP). The Lancaster WRP provides primary, secondary, and tertiary treatment with a design capacity of approximately 18 million gallons of wastewater per day (LACSD n.d.). Again, as an existing roadway, and a proposed roadway widening and interchange improvement project, the proposed project would result in minimal on-site wastewater discharge.

Solid Waste

Waste Management provides solid waste management service in the City of Lancaster and in the greater Antelope Valley area. The primary disposal facility in Lancaster is the Lancaster Landfill, which is approximately 4.6 miles north of the project site. It currently encompasses 276 acres of land, with 209 acres permitted for waste disposal (Waste Management n.d.). As an existing roadway, and a proposed roadway widening and interchange improvement project, the proposed project would generate minimal on-site solid waste generation.

Impact Analysis

Would the project:

- a. *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

Construction

No impact. Construction of the proposed project would generate a minimal amount of wastewater. The primary source of wastewater would be sanitary waste generated by construction workers. Portable waste facilities would be provided for use by all workers, and sanitary waste generated from the use of these facilities would be disposed of by an approved contractor at an approved disposal site.

Construction activities could result in sedimentation and water contamination from liquids such as solvents and paints. However, because the proposed project would disturb an area greater than 1 acre, it would be subject to the requirements of the Construction General Permit, which was adopted by the SWRCB as Water Quality Order 2009-0009-DWQ (effective July 1, 2010). As such, BMPs would be employed during construction, such as sediment and erosion control measures to prevent pollutants from leaving the site. Construction workers would be expected to follow the BMPs, which would reduce any construction-related wastewater impacts. Therefore, the proposed project would not exceed wastewater treatment requirements of the RWQCB. No impacts would occur.

Operation

No impact. The proposed project would not require new connections to the LACSD sanitary sewer system and would continue to generate minimal wastewater. Wastewater in the project vicinity would continue to be conveyed to the Lancaster WRP, which provides treatment for up to 18 million gallons a day. The Lancaster WRP is under the jurisdiction of the Lahontan RWQCB and subject to California Waste Discharge Requirements. Additionally, all water reclamation plants conduct water quality

measurements and analyses that meet all requirements of the RWQCB. Because wastewater would be treated at the Lancaster WRP, and the Lancaster WRP is subject to the California Waste Discharge Requirements, operation of the proposed project would not generate wastewater that would exceed the requirements of the RWQCB. Operational impacts of the Build Alternative would not occur.

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?

Construction

Water

No impact. Construction of the proposed project would necessitate the use of water for various purposes. Water would be used during concrete work, general grading, and general dust suppression. Water used during construction would be delivered to the project site by truck. The water uses described above would not result in a substantial permanent increase in water consumption, and new water treatment facilities would not be required to meet this incremental and temporary increase in demand. Therefore, no impacts would occur.

Wastewater

No impact. Construction of the proposed project would generate a minimal amount of wastewater. It would not require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities. The primary source of wastewater would be the sanitary waste generated by construction workers. Portable waste facilities would be provided for use by all workers, and sanitary waste generated from the use of these facilities would be disposed of by an approved contractor at an approved disposal site. Therefore, no impacts would occur.

Operation

Water

No impact. In 2011, Los Angeles County Department of Public Works prepared an Integrated Regional Urban Water Management Plan (IRUWMP) for the Antelope Valley to address issues related to long-term plans for providing water service to properties within their respective boundaries. The proposed project, once operational, is not expected to substantially contribute to water use. According to the IRUWMP, LACWD No. 40 would be able to meet the increasing demand through 2035 with implementation of planned water supplies, assuming the availability of groundwater remains the same as indicated in the IRUWMP. Therefore, the proposed project would not necessitate the construction of new water treatment facilities or expansion of existing facilities. Furthermore, the proposed project would not require additional water for landscaping. Therefore, no impacts would occur.

Wastewater

No impact. As mentioned above, the proposed project would not require new connections to the LACSD sanitary sewer system. The generation of wastewater at the project site would not increase compared with existing conditions. Therefore, it would not require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities. Wastewater would continue to be discharged into a local LACSD sewer line and conveyed to and treated at the Palmdale WRP. Consequently, operation of the proposed project would not require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities and operational impacts would not occur.

c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Construction

No impact. As discussed above, construction activities would include site preparation and grading, which could result in sedimentation and erosion. However, construction of the proposed project would be subject to BMPs, which would ensure that runoff would be contained, clean, and controlled. The project may involve the extension of the Amargosa Creek reinforced concrete box culvert at 15th Street West. However, the extension of this culvert would not have significant environmental effects. Therefore, construction of the proposed project would not create or contribute runoff water that would require or result in the construction of new stormwater drainage facilities or the expansion of existing facilities. No impacts would occur.

Operation

No impact. As discussed above, the project site currently consists of relatively flat ground that receives sheet-flow drainage from properties to the northwest, which then flow southeast into an existing storm drain near the southern terminus of the proposed alignment. Operation of the project would not result in a significant increase in the amount of stormwater runoff along the proposed alignment. As such, it would not require construction of new stormwater drainage facilities or the expansion of existing facilities. During a major rain event, the water would continue on its historical path. Therefore, no impacts would occur.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?

Construction

No impact. Construction of the proposed project would necessitate the use of water for various purposes. Water would be used during concrete work, general grading, and general dust suppression. Water used during construction would be delivered to the project site by truck. However, the increase in water consumption would be temporary, and LACWD No. 40 would be able to meet this demand, as outlined in detail below. Therefore, no impacts would occur.

Operation

No impact. The proposed project would not increase water use along the proposed alignment. Water usage would be associated with regular on-site facility maintenance and minimal landscape irrigation. Plant materials associated with roadway greenscaping would be adaptable to the high desert and require little maintenance. Landscape irrigation would be in accordance with State Ordinance 1881, the Water Conservation in Landscaping Act of 2006, which mandates increased water efficiency for both new and existing developments statewide. Additionally, according to the IRUWMP, and as discussed in Section IX, *Hydrology and Water Quality*, LACWD No. 40 would be able to meet the increasing demand through 2035 with implementation of planned water supplies. Therefore, the proposed project would not require new or expanded entitlements to ensure the availability of sufficient water supplies and operational impacts would not occur.

- e. Result in a determination by the wastewater treatment provider that 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?*

Construction

No impact. Construction of the proposed project would generate a minimal amount of wastewater. That amount would not exceed the capacity of the existing wastewater treatment system when considered in combination with the provider's existing service commitments. The primary source of wastewater would be sanitary waste generated by construction workers. Portable waste facilities would be provided for use by all workers. Sanitary waste generated from the use of these facilities would be disposed of by an approved contractor at an approved disposal site. Therefore, construction activities associated with the proposed project would not exceed the capacity of the existing wastewater treatment system when considered in combination with the provider's existing service commitments. Construction-related impacts would not occur.

Operation

No impact. Operation of the proposed project would not be expected to generate additional wastewater when compared with existing conditions. New connections to the LACSD sanitary sewer system would not be required. Wastewater would continue to flow as it does now, being conveyed to and treated at the Lancaster WRP, which has capacity to treat flows up to 18 million gallons per day. In addition, the proposed project would not increase the population served by the Lancaster WRP. As discussed above in Section IX, *Hydrology and Water Quality*, operation of the proposed project would not exceed the capacity of the existing wastewater treatment system when considered in combination with the provider's existing service commitments. Operational impacts would not occur.

- f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

Construction

No impact. Construction activities would generate solid waste. However, the project site would be designed to minimize import to and export from the site. Approximately 10,000 cubic yards of soil would be excavated to create the widened roadway and interchange improvements. Of this, some amount of fill would be exported from the project site from excavations for foundations, utilities, and other site features. This fill, along with other construction waste, would be disposed of at the Lancaster Landfill in the City of Lancaster, which has sufficient capacity to handle waste generated by project construction. Consequently, no impacts would occur.

Operation

No impact. Operation of the proposed project is not expected to result in an increase in the generation of solid waste compared with existing conditions. Therefore, no impact would occur.

- g. Comply with federal, state, and local statutes and regulations related to solid waste?*

Construction

No impact. Construction of the proposed project would comply with federal, state, and local statutes and regulations related to solid waste. AB 939 mandates the reduction of solid waste disposal in landfills. The bill mandates a minimum 50 percent waste diversion goal and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. As stated

in the 2014 Countywide Integrated Waste Management Plan Annual Report for Los Angeles County, the estimated diversion rate for the entire county was 60 percent (Los Angeles County Department of Public Works 2015). Solid waste generated by the proposed project would be disposed of at the Lancaster Landfill, which monitors, inspects, and records waste that enters its facilities to facilitate compliance with AB 939. Furthermore, the proposed project would be implemented in a manner that would be consistent with the County's commitment to, and compliance with, AB 939. As a result, no impacts would occur.

Operation

No impact. Operation of the proposed project would comply with federal, state, and local statutes and regulations related to solid waste. Solid waste generated by the proposed project would be disposed of at the Lancaster Landfill, which monitors, inspects, and records waste that enters its facilities to facilitate compliance with AB 939. Furthermore, the proposed project would be implemented in a manner that would be consistent with the County's commitment to, and compliance with, AB 939. As a result, as discussed above for construction of the proposed project, operation of the proposed project would also comply with applicable federal, state, and local statutes related to solid waste. Operational impacts would not occur.

Avoidance, Minimization, and Mitigation Measures

No significant impacts related to utilities and service systems would occur as a result of the proposed project. Therefore, no avoidance, minimization, or mitigation measures are required.

Cumulative Impacts

A cumulative impact could occur if the proposed project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects for each resource area.

Construction and Operation

Water

The IRUWMP estimates that the population in the Antelope Valley will continue to grow, based on land use maps and general plans for the cities of Palmdale and Lancaster, among others. Although the related project and other development in water provider's service area would increase the demand for water, this type of growth was anticipated during development of the land use maps and general plans for the Antelope Valley and, therefore, was incorporated into the IRUWMP. The IRUWMP indicates that LACWD No. 40 will be able to meet the increasing demand through 2035 with implementation of planned water supplies, assuming the availability of groundwater remains the same as indicated in the IRUWMP. Therefore, it is not anticipated that future development, including the proposed project and related development, would result in significant cumulative impacts with respect to water supply and infrastructure. Because operation of the proposed project would not require additional water, and construction activities would require incremental temporary increases in water consumption, the proposed project would not result in a cumulatively considerable impact on water consumption and water supply facilities.

Solid Waste

Construction of the related project, if approved, would increase the generation of solid waste. Solid waste generated by the related project and other development in the study area would be served by the Lancaster Landfill, which has a remaining capacity of 12 million cubic yards and 27 years of estimated remaining operational time. Therefore, it has sufficient long-term remaining capacity to accommodate the solid waste from the proposed project and other cumulative development in the study area. Because operation of the proposed project would not generate additional waste, it would not contribute to any significant cumulative impacts on solid waste facilities and services.

Wastewater

Because operation of the proposed project would not generate additional wastewater and construction impacts would be temporary and incremental, the proposed project would not result in a cumulatively considerable impact on wastewater facilities and services.

Conclusion

No impact. Population growth in the Antelope Valley has been anticipated by the utility service providers, and conservation, management, and expansion strategies are being implemented to ensure adequate capacity for meeting the demands of this growth. As such, it is not anticipated that cumulative development, in combination with the proposed project, would not result in cumulative impacts related to utilities and service systems.

XVIII. Mandatory Findings of Significance	Significant and Unavoidable Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Impact Analysis

Would the project:

- 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, 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?*

Less-than-significant impact with Mitigation Incorporated. Construction and operation of the proposed project would not 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, 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.

As discussed in Section IV, *Biological Resources*, the project site has suitable habitat for three special-status wildlife species: burrowing owl, silvery legless lizard, and coast horned lizard. Habitat for silvery legless lizard and coast horned lizard is present in the form of low-quality habitat fragments near the edge of the BSA (outside of the PIA); however, both species have a very low potential for occurrence. No work would be conducted within these fragments; all work would be contained within highly disturbed and developed areas of the PIA. Impacts within the PIA are not anticipated to affect silvery legless lizard or coast horned lizard directly or indirectly. A focused burrow survey for determining the existence of burrowing owls has yet to occur. Until a burrow survey can be completed with complete access to the study area, suitable habitat is assumed to be present. If burrowing owls are utilizing burrows in the site or adjacent areas, the proposed project may have direct and/or indirect impacts on the species. However, the removal of the narrow patches of habitat in the PIA would not be biologically important to the burrowing

owl because the habitat in the PIA is largely isolated and highly disturbed. In addition, the implementation of Avoidance, Minimization, and Mitigation Measures **BIO-1** through **BIO-9** would ensure that direct take and indirect impacts would not occur on burrowing owls as a result of the proposed project.

The project site could be used by birds during the nesting season. Therefore, in accordance with Avoidance and Minimization Measure **BIO-9**, if vegetation removal commences during the bird breeding season (defined as February 15 through September 1), a preconstruction survey by an experienced biologist will occur within 72 hours prior to the initiation of construction activities. If nesting birds are found, an initial 200-foot passerine species and 500-foot raptor species avoidance area will be established around the nest until a qualified biologist determines an appropriate avoidance area based on the species nesting and surround construction activities. The avoidance area will be marked using orange snow fencing (or similar demarcation) until the qualified biologist has determined that young have fledged or nesting activities have ceased. If nesting listed species are detected, the wildlife agencies will be contacted and a 500-foot (or a distance determined through subsequent coordination with the wildlife agencies) avoidance area will be established around the nest until a qualified biologist has determined that young have fledged or nesting activities have ceased. In the event that vegetation trimming, removal, or other construction activities are suspended for 5 days or more, a preconstruction nesting bird survey will be conducted within 48 hours prior to re-initiation of work.

As discussed in Section V, *Cultural Resources*, the proposed project would not eliminate important examples of the major periods of California history or prehistory. The proposed project would incorporate Avoidance and Minimization Measures **CUL-1**, **CUL-2**, **CUL-3**, and **CUL-4** to reduce potential impacts in the event that archaeological or paleontological resources or human remains are identified during construction-related activities. As a result, impacts would be less than significant.

- 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.)**

Less-than-significant impact. A cumulative impact could occur if the proposed project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects. As discussed in the above sections, the proposed project would not result in any unavoidable significant impacts, nor would it result in a cumulatively considerable impact on any resource area. Consequently, because the proposed project would incorporate the avoidance and minimization measures listed in Appendix B, *Environmental Commitments Record*, to further reduce potential impacts, impacts would be less than significant.

- c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?**

Less-than-significant impact. As described in detail in the above sections, the proposed project would not result in potentially significant environmental impacts after implementation of proposed avoidance and minimization measures. Therefore, with implementation of the avoidance and minimization measures listed in Appendix B, *Environmental Commitments Record*, the proposed project would not have environmental impacts that would cause substantial adverse effects on human beings. Impacts would be less than significant.

3.3.1 Climate Change

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

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (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 (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation.⁶ In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest contributors of GHG emissions.⁷ The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

Two terms are typically used when discussing how we address the impacts of climate change: “greenhouse gas mitigation” and “adaptation.” Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or “mitigate” the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

3.3.1.1 Regulatory Setting

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

Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.⁸ This approach encourages planning for sustainable

⁶ <https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014>

⁷ <https://www.arb.ca.gov/cc/inventory/data/data.htm>

⁸ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability.”⁹ Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors 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.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR): With this act, Congress set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation’s dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

Energy Policy Act of 2005 (109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Standards: This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

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 GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court’s interpretation of the existing Act and EPA’s assessment of the scientific evidence that form the basis for EPA’s regulatory actions.

U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010¹⁰ and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules’ long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and

⁹ <https://www.sustainablehighways.dot.gov/overview.aspx>

¹⁰ <https://one.nhtsa.gov/Laws-&-Regulations/CAFE-%E2%80%93-Fuel-Economy>

ARB will decide on, CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered EPA to reopen the review and reconsider the mileage target.¹¹

NHTSA and EPA issued a Final Rule for “Phase 2” for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO₂ emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

State

With the passage of legislation including State Senate and Assembly bills and executive orders, California has been innovative and proactive in addressing GHG emissions and climate change.

Assembly Bill 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 S-3-05 (June 1, 2005): The goal of this executive order (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 year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and SB 32 in 2016.

Assembly Bill 32 (AB 32), Chapter 488, 2006: Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 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.” The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor’s 2030 and 2050 GHG reduction goals.

Senate Bill 97 (SB 97), Chapter 185, 2007, Greenhouse Gas Emissions: This bill requires 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 ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan

¹¹ <http://www.nbcnews.com/business/autos/trump-rolls-back-obama-era-fuel-economy-standards-n734256> and <https://www.federalregister.gov/documents/2017/03/22/2017-05316/notice-of-intention-to-reconsider-the-final-determination-of-the-mid-term-evaluation-of-greenhouse>

Planning Organization (MPO) for each region must then develop a “Sustainable Communities Strategy” (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its 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 B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Executive Order B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMT_{CO₂e}). Finally, it requires the Natural Resources Agency to update the state’s climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32 (SB 32) Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

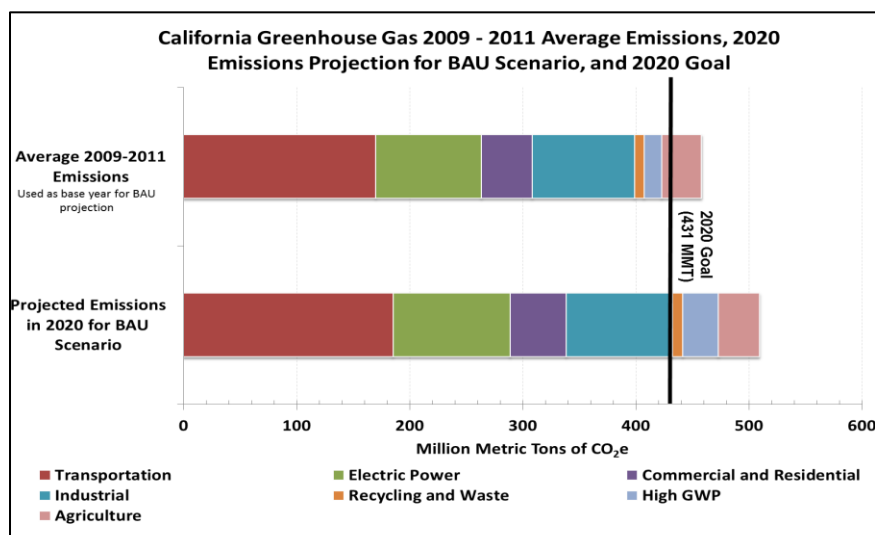
3.3.1.2 Environmental Setting

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 ([AB 32](#)), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. The second updated plan, [California’s 2017 Climate Change Scoping Plan](#), adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the updated Scoping Plan, ARB released the GHG inventory for California.¹² ARB is responsible for maintaining and updating California’s GHG Inventory per H&SC Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure 3-2 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in

¹² 2017 Edition of the GHG Emission Inventory Released (June 2017):
<https://www.arb.ca.gov/cc/inventory/data/data.htm>

Figure 3-2. 2020 Business as Usual (BAU) Emissions Projection 2014 Edition

<https://www.arb.ca.gov/cc/inventory/data/bau.htm>

demonstrating progress toward meeting the 2020 goal of 431 MMTCO_{2e}.¹³ The 2018 edition of the GHG emissions inventory (released July 2018) found total California emissions of 429 MMTCO_{2e}.

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated from Pavley I and the Renewable Electricity Standard (30 MMTCO_{2e} total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 MMTCO_{2e}.

3.3.1.3 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.¹⁴ In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

GHG emissions for transportation projects can be divided into those produced during operations and those produced during construction. The following represents a best faith effort to describe the potential GHG emissions related to the proposed project.

¹³ The revised target using Global Warming Potentials (GWP) from the IPCC Fourth Assessment Report (AR4)

¹⁴ This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

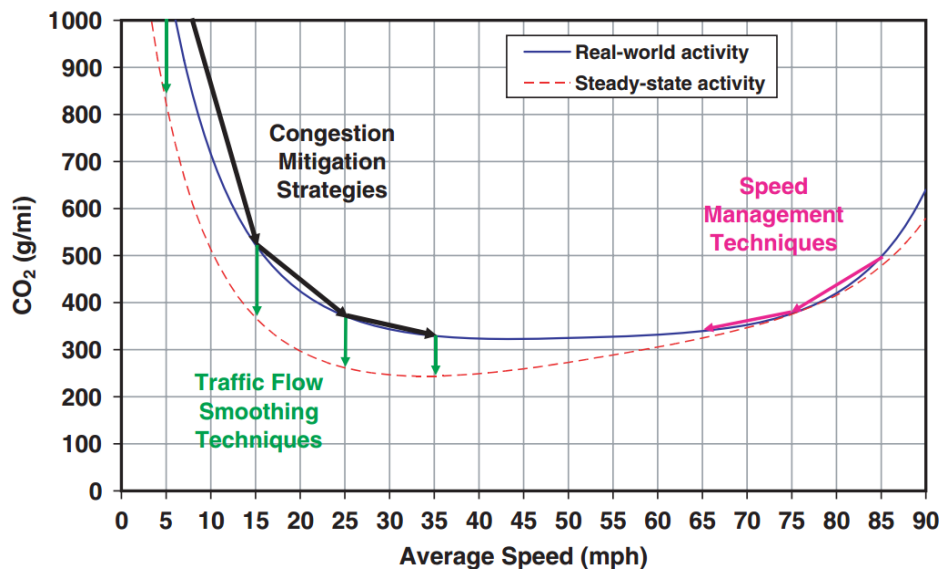
Four primary strategies can reduce GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity), (3) transitioning to lower GHG-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued concurrently.

FHWA supports these strategies to lessen climate change impacts, which correlate with efforts that the state of California is undertaking to reduce GHG emissions from the transportation sector.

The highest levels of CO₂ from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 3-3). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, GHG emissions, particularly CO₂, may be reduced.

Operational Emissions

Figure 3-3. Possible Use of Traffic Operation Strategies in Reducing On-Road CO₂ Emissions



Source: Matthew Barth and Kanok Boriboonsomsin, University of California, Riverside, May 2010 (<https://www.researchgate.net/publication/46438207>)

As discussed in Section 2.2, the primary goal of the proposed project is to address the traffic congestion and safety concerns on the SR-14/Avenue K Interchange and along Avenue K. Although AVTA operates several bus lines in the project vicinity (lines 1, 4, 5, 9, 11, 12, and 94) and bicycle and pedestrian travel along Avenue K are not precluded, the primary goal of the project centers on passenger vehicles, as this mode represents the dominant form of transportation in the area. Nevertheless, the improvements proposed along Avenue K and at the SR-14 interchange offer congestion relief for users of public transportation as well as for drivers of passenger cars. In addition, including the Class II bike lanes/shoulder and a pedestrian refuge island in the middle of crosswalks and ensuring that sidewalks are ADA compliant would benefit cyclists and pedestrians. Although the proposed project would add vehicular capacity to ramps and roadways in the project vicinity, the proposed project would also support other modes of transportation consistent with the City of Lancaster’s goal to “provide for a Transportation and Circulation System that ensures accessibility, mobility, and safety for all residents” (City of Lancaster 2009:1–22). The project is also consistent with the SCAG RTP/SCS goals of maximizing mobility and

accessibility, ensuring travel safety and reliability, and maximizing the productivity of the transportation system (Goals 2, 3, and 5) (SCAG 2016:64). As stated in Chapter 1, *Introduction*, the purpose of the proposed project is to alleviate traffic congestion, increase operational capacity, and provide pedestrian and bicycle facilities to facilitate non-motorized forms of transportation. The City of Lancaster released a draft of its Climate Action Plan in June 2016. The proposed project is consistent in its provision of bike lanes (Measure 4.1.2b), pedestrian amenities (Measure 4.1.2c), and improvements in traffic signal synchronization (Measure 4.1.2d).

SB 375 was enacted to reduce GHG emissions from automobiles and light trucks through integrated transportation, land use, housing, and environmental planning. Under the law, SCAG is tasked with developing an SCS, a newly required element of the 2012 RTP that provides a plan for meeting the emissions reduction targets set forth by ARB.

On September 23, 2010, ARB issued a regional 8% per capita reduction target for planning year 2020 and a conditional target of 13% for 2035 for the SCAG region. The proposed project is identified in the SCAG 2016–2040 RTP/SCS (Project ID 1AL04) and its description is consistent with the project as proposed. The project would incorporate the following provisions of MM-GHG-3(b) identified in the Program EIR prepared for the RTP/SCS¹⁵:

- Use lighting systems that are energy efficient, such as LED technology
- Incorporating bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; providing adequate bicycle parking and planning for and building local bicycle projects that connect with the regional network

Goal 5 of the 2016–2040 RTP/SCS identifies that RTP/SCS implementation would “maximize the productivity of our transportation system” (SCAG 2016:64). The productivity of the transportation system includes the efficiency of roadway operations, which this project would address. The project *Traffic Operations Analysis Report* analyzed intersection delay and LOS with and without the proposed project; results are summarized in Table 3-4 of this IS. The analysis determined that overall delay would be reduced and traffic would flow more efficiently under the Build Alternative compared to the No-Build Alternative. In addition, average delay would be reduced at the SR-14 Southbound Ramps/Avenue K, SR-14 Northbound Ramps/15th Street West/Avenue K, and 12th Street West/Avenue K intersections under the Opening Year (2020) Build Alternative when compared to existing conditions. Other area intersections would experience marginal increases in delay under the Opening Year (2020) Build Alternative relative to Existing (2016) conditions as result of ambient growth in vehicle travel from projected population growth in the project area (Caltrans 2017b).

Project operation would involve fuel combustion by vehicles on roadways in the project vicinity, which would result in GHG emissions. The Build Alternative would reduce congestion, but would not change local VMT, and would not be responsible for new trip generation relative to the No-Build Alternative. Table 3-14 shows the estimates of operational GHG emissions in the project vicinity. As shown therein, emissions would be the same under the Build Alternative and the No-Build Alternative at Opening Year (2020) and Horizon Year (2040). However, despite increases of VMT over time, operational GHG emissions from mobile sources in the vicinity would be lower under both the Build Alternative and the

¹⁵ MM-GHG-3(b) from the Program EIR prepared for the RTP/SCS states that the Lead Agency “can and should consider mitigation measures... for the purpose of reducing emissions of greenhouse gases, as applicable and feasible” (SCAG 2016: Exhibit B, p. 32). Only applicable and feasible provisions of this measure have been incorporated as components of the proposed project.

No-Build Alternative at Opening Year (2020) and Horizon Year (2040) when compared to Existing (2016) conditions due to the retirement of older, less-efficient vehicles.

Table 3-14. Modeled Annual CO₂e Emissions and Vehicle Miles Traveled, by Alternative

Alternative	CO ₂ e Emissions (Metric Tons/Year)	Annual Vehicle Miles Traveled ¹
Existing/Baseline 2016	19,355	48,033,128
Open to Traffic 2020		
No-Build Alternative	18,560	50,768,529
Build Alternative	18,560	50,768,529
20-Year Horizon/Design-Year 2040		
No-Build Alternative	15,243	58,829,339
Build Alternative	15,243	58,829,339
Source: EMFAC 2014		
¹ Annual vehicle miles traveled (VMT) values derived from Daily VMT values multiplied by 347, per ARB methodology (ARB 2008). Data provided by Fehr & Peers 2018.		
CO ₂ e = carbon dioxide equivalent		

While EMFAC has a rigorous scientific foundation and has been vetted through multiple stakeholder reviews, its emission rates are based on tailpipe emission test data. The numbers are estimates of CO₂ emissions and not necessarily the actual CO₂ emissions. The model does not account for factors such as the rate of acceleration and the vehicles' aerodynamics, which would influence CO₂ emissions. To account for CO₂ emissions, ARB's GHG Inventory follows the IPCC guideline by assuming complete fuel combustion, while still using EMFAC data to calculate CH₄ and N₂O emissions. Though EMFAC is currently the best available tool for use in calculating GHG emissions, it is important to note that the CO₂ numbers provided are only useful for a comparison of alternatives.

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

Construction GHG emissions were modeled using the Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model, version 8.1.0. Short-term construction activities would result in GHG emissions from fuel combustion associated with off- and on-road construction equipment and vehicles, which would result in emissions of 823 metric tons of CO₂-equivalent (CO₂e) over the 12-month construction period (Table 3-15).

Table 3-15. Estimate of Project-Related Construction GHG Emissions (metric tons per year)

	CO ₂ e (Metric Tons)
Total Construction Emissions	823
Source: ICF 2017	

The project would comply with all requirements of the AVAQMD. In addition, Caltrans Standard Specifications Section 14-9, Air Quality, a part of all construction contracts, requires contractors to comply with all federal, state, regional, and local rules, regulations, and ordinances related to air quality. Measures that reduce vehicle emissions and energy use also reduce GHG emissions. Under Avoidance and Minimization Measure TRF-1, a traffic management plan will be implemented to minimize traffic delays during construction.

3.3.1.4 CEQA Conclusion

While the project will result in a slight increase in GHG emissions during construction, it is anticipated that the project will not result in an increase in operational GHG emissions. While 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 impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

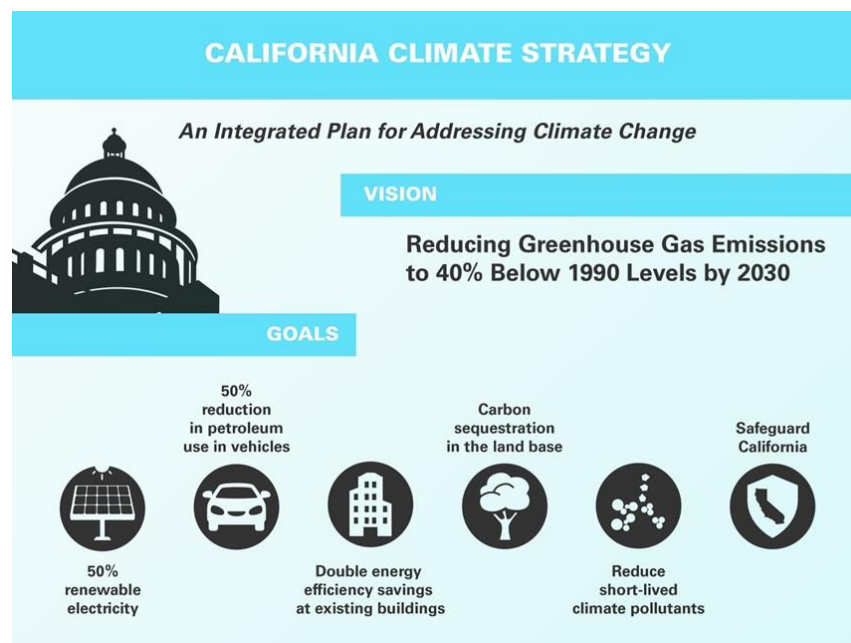
3.3.1.5 Greenhouse Gas Reduction Strategies

Statewide Efforts

In an effort to further the vision of California's GHG reduction targets outlined in AB 32 and SB 32, Governor Brown identified key climate change strategy pillars (concepts) (Figure 3-4). These pillars highlight the idea that several major areas of the California economy will need to reduce emissions to meet the 2030 GHG emissions target. These pillars are (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farm and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that we build on our past successes in reducing criteria and toxic air pollutants from transportation and goods movement activities. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. One of Governor Brown's key pillars sets the ambitious goal of reducing today's petroleum use in cars and trucks by up to 50 percent by 2030.

Governor Brown called for support to manage natural and working lands, including forests, rangelands, farms, wetlands, and soils, so they can store carbon. These lands have the ability to remove carbon dioxide from the atmosphere through biological processes, and to then sequester carbon in above- and below-ground matter.

Figure 3-4. The Governor's Climate Change Pillars: 2030 Greenhouse Gas Reduction Goals

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Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set a new interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system. It serves as an umbrella document for all of the other statewide transportation planning documents.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have

primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT per capita
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several funding and technical assistance programs that have GHG reduction benefits. These include the Bicycle Transportation Program, Safe Routes to School, Transportation Enhancement Funds, and Transit Planning Grants. A more extensive description of these programs can be found in *Caltrans Activities to Address Climate Change* (2013).

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

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

Project-Level GHG Reduction Strategies

The following measures will also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project.

- The project is designed to reduce traffic delays and improve traffic flow, which reduces the GHG emissions created by stop-and-go vehicle movements.
- Consistent with SCAG's 2016–2040 RTP/SCS Program EIR, the following provisions of MM-GHG-3(b) would be implemented as components of the project:
 - Use lighting systems that are energy efficient, such as LED technology
 - Incorporating bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; providing adequate bicycle parking and planning for and building local bicycle projects that connect with the regional network
- According to Caltrans Standard Specification Provisions, the contractor must comply with all AVAQMD rules, ordinances, and regulations in regard to air quality restrictions.

- The project will provide and improve pedestrian and bicycle infrastructure to facilitate non-motorized forms of transportation, in compliance with the Complete Streets program.
- Consistent with measure AES-3, vegetation planting will occur within 12 months of project completion, allowing for carbon capture in the project area.

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—or, put another way, planning and design for resilience. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their 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. These types of impacts to the transportation infrastructure may also have economic and strategic ramifications.

Federal Efforts

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality, 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, 2011,¹⁶ 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 provided an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as fresh water, and providing accessible climate information and tools to help decision-makers manage climate risks.

The federal Department of Transportation issued *U.S. DOT Policy Statement on Climate Adaptation* in June 2011, committing to “integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely and that transportation infrastructure, services and operations remain effective in current and future climate conditions.”¹⁷

To further the DOT Policy Statement, on December 15, 2014, FHWA issued order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*).¹⁸ This directive established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The FHWA will work to integrate consideration of these risks into its planning, operations, policies, and programs in order to promote preparedness and resilience; safeguard federal investments; and ensure the safety, reliability, and sustainability of the nation’s transportation systems.

FHWA has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, state, and local levels.¹⁹

¹⁶ <https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience>

¹⁷ https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm

¹⁸ <https://www.fhwa.dot.gov/legsregs/directives/orders/5520.cfm>

¹⁹ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

State Efforts

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 and directed all state agencies planning to construct projects in areas vulnerable to future sea-level rise to consider a range of sea-level rise scenarios for the years 2050 and 2100, 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, and storm surge and storm wave data.

Governor Schwarzenegger also requested the National Academy of Sciences to prepare an assessment report to recommend how California should plan for future sea-level rise. The final report, *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (Sea-Level Rise Assessment Report)²⁰ was released in June 2012 and included relative sea-level rise projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates; and the range of uncertainty in selected sea-level rise projections. It provided 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; and a discussion of future research needs regarding sea-level rise.

In response to EO S-13-08, the California Natural Resources Agency (Resources Agency), in coordination with local, regional, state, federal, and public and private entities, developed *The California Climate Adaptation Strategy* (Dec 2009),²¹ which summarized the best available science on climate change impacts to California, assessed California's vulnerability to the identified impacts, and outlined solutions that can be implemented within and across state agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan).

Governor Jerry Brown enhanced the overall adaptation planning effort by signing EO B-30-15 in April 2015, requiring state agencies to factor climate change into all planning and investment decisions. In March 2016, sector-specific Implementation Action Plans that demonstrate how state agencies are implementing EO B-30-15 were added to the Safeguarding California Plan. This effort represents a multi-agency, cross-sector approach to addressing adaptation to climate change-related events statewide.

EO S-13-08 also gave rise to the *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided "guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California," specifically, "information and recommendations to enhance consistency across agencies in their development of approaches to SLR."²²

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 actively engaged in working towards identifying these risks throughout the state and

²⁰ *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.

²¹ <http://www.climatechange.ca.gov/adaptation/strategy/index.html>

²² <http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document/>

will work to incorporate this information into all planning and investment decisions as directed in EO B-30-15.

The proposed project is outside the coastal zone and not in an area subject to SLR (NOAA 2018). Accordingly, direct impacts to transportation facilities due to projected SLR are not expected.

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Chapter 4 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including PDT meetings, interagency coordination meetings, and a Community Open House and Public Scoping Meeting. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

4.1 Scoping Process

Early and continuous public outreach is an essential part of the project planning and decision-making process. The proposed project, which involves improvements to the Avenue K/SR-14 interchange, is part of a program-level Metro project that is designed to improve Avenue M, L, J, and G interchanges with SR-14 as well. Coordination with the community and public agencies for this project was conducted at the program level centered around the Community Open House and Scoping Meeting, which took place on Tuesday, March 15, 2016, at the Lancaster National Soccer Center at 3145 East Avenue L, Lancaster, CA 93535. Attendees at the event had the opportunity to learn about the project and ask questions of representatives from multiple agencies and companies involved with the planning process, including the City of Lancaster, Caltrans, Michael Baker International, Kimley Horn, GPA Consulting, and TRC Solutions. One of the Open House stations included information on Avenue K. Project factsheets were available in English.

Photos of the event, copies of comment card, event flyer, project fact sheet, and open house guide are provided at the end of this chapter in Section 4.3.

4.2 Consultation and Coordination with Public Agencies

The following provides a summary of all coordination relevant to the development of the project during Project Initiation and Project Approval & Environmental Documentation phases.

4.2.1 Cultural Resources

4.2.1.1 *Native American Consultation*

Native American Heritage Commission

Caltrans District 7 contacted the NAHC regarding the proposed project. The NAHC stated that a search of its Sacred Lands File did not yield any information regarding sacred lands or traditional cultural properties within the project area. The NAHC provided a list of six Native American contacts in the region.

Native American Tribes, Groups and Individuals

The NAHC was contacted by Statistical Research Incorporated on August 19, 2015, and asked for a list of traditional use areas or sacred sites within the interchange study area and a list of specific Native American groups or individuals who could provide additional information on cultural resources within the interchange study area (see *Archaeological Survey Report, State Route 14/138 and Avenue K Interchange Improvements Project* [Caltrans 2018c]). On September 29, 2015, the NAHC responded, saying that the

Sacred Lands File search was completed, with negative results. The NAHC response letter included a list of four tribes with traditional lands or cultural places in Los Angeles County that should be invited to consult on the project for the purpose of mitigating impacts on tribal cultural resources.

For the purposes of AB 52 consultation, letters were sent to the four tribes indicated by the NAHC on March 16, 2017 (Table 4-1). Copies of the correspondence are included in the Archaeological Survey Report, State Route 14/138 and Avenue K Interchange Improvements Project (Caltrans 2018c).

Table 4-1. Native American Consultation

Native American Individual/ Group	Date of First Contact via Letter	Date of Reply	Date(s) of Subsequent Contacts	Summary of Conversation
Delia Dominguez, Chairperson, Kitanemuk & Yowlumne Tejon Indians	3/16/2017	None	4/18/2017 4/20/2017 12/1/2017	<p>4/18/2017: Follow-up phone call by S. Kitchel to D. Dominguez; left voicemail requesting a response if the Tribe has any information related to the project. Emails sent were rejected.</p> <p>4/20/2017: Follow-up phone call made by D. Dominguez to S. Kitchel; stated there is one cultural resource near State Route 138 in addition to several cultural resources where Pearblossom Highway and Highway 14 come together near Avenue S and Lake Palmdale. She was unsure if they have been destroyed during construction of Highway 14 or were collected. She was having trouble accessing her GIS/GPS data and will send trinomials to Sydney and/or Stephen via email (no date/time specified).</p> <p>12/1/2017: A follow-up email was sent by S. Bryne to Ms. Dominguez. This email was returned. A follow up phone call from S. Bryne to Ms. Dominguez was also made on this date. A voicemail from S. Bryne was left for Ms. Dominguez. No response has been received to date.</p>
Rudy Ortega, Jr., President, Fernandeno Tataviam Band of Mission Indians	3/16/2017	None	4/18/2017 8/14/2017 8/15/2017	<p>4/18/2017: Follow-up phone call by S. Kitchel to Rudy Ortega Jr.; left voicemail requesting a response if the Tribe has any information related to the project. No email provided.</p> <p>8/14/2017: Follow up email sent to the tribe's Cultural Resources Director Kimia Fatehi.</p> <p>8/15/2017: Ms. Fatehi responded by email. In her email Ms. Fatehi stated, "I have noted here that on April 12, 2017, I reviewed the project and found that consultation was not required."</p>
Lynn Valbuena, Chairwoman, and Ms. Lee Clauss, Director of Cultural Resources Management, San Manuel Band of Mission Indians	3/16/2017	None	4/18/2017 4/24/2017 1/9/2018 1/23/2018 1/24/2018 4/18/2018 4/30/2018 5/23/2018	<p>4/18/2017: Follow-up phone call by S. Kitchel to Lynn Valbuena; left voicemail to assistant Kate Larson requesting a response if the Tribe has any information related to the project. No email provided.</p> <p>4/24/2017: Received email from Joan Schneider, PhD, of the San Manuel Band of Mission Indians. Ms. Schneider stated, "By this e-mail, SMBMI requests to consult with the City of Lancaster pursuant to CEQA (as amended, 2015) and, CA PRC 21080.3.1. The proposed project area exists within Serrano ancestral territory and, therefore, is of interest to the Tribe. In review of the letter sent to SMBMI by ICF, SMBMI is aware that this particular area is documented as</p>

Native American Individual/ Group	Date of First Contact via Letter	Date of Reply	Date(s) of Subsequent Contacts	Summary of Conversation
				<p>highly culturally sensitive to Tribe. Although there is substantial development within the project area the project area remains of concern to SMBMI. As such, Tribe will be closely following the further planning for this project as well as its implementation and would like to receive all information under the requirements of SB 18 and AB 52.</p> <p>At the appropriate time, please inform the City of Lancaster that SMBMI will be requesting both archaeological and Native American monitoring when there is any ground-disturbing activity during the implementation of this project that is within original sediments that have not been previously disturbed. Should ICF plan or anticipate any test excavations prior to the actual project start, please plan to include Native American monitor/participants from SMBMI. In addition, SMBMI respectfully informs ICF and the City of Lancaster that specific language needs to be included in any environmental documents and mitigation measures to ensure protection of Cultural and Tribal Cultural Resources upon discovery, should this occur.”</p> <p>1/9/2018: Mr. Bryne emailed Ms. Schneider to inquire why they consider the project area sensitive for cultural remains and to request any sources of information related to this research. To date no response has been received.</p> <p>1/23/2018: In a telephone call with Sarah Mattiussi Gutierrez of Caltrans District 7, Lee Clauss, Director of Cultural Resources Management for SMBMI requested: a copy of the 2016 SRI report titled <i>Cultural Resources Existing Conditions Report Lancaster State Route 14 Interchange Improvement Project</i>, and an archaeological sensitivity assessment of the area where the proposed projects will be located to better determine the potential for buried sites.</p> <p>1/24/2018: Caltrans District 7 provided a copy of the 2016 SRI report to SMBMI.</p> <p>4/18/2018: A copy of the latest ASR draft was sent to the SMBMI for their review and input. Caltrans requested comments by the tribe to be received by April 30, 2018.</p> <p>4/30/2018: SMBMI responded with comments and requested to have a meeting with Caltrans District 7 Cultural staff to further discuss how to better approach monitoring areas of high sensitivity.</p> <p>5/23/2018: On May 23, 2018, Caltrans District 7 Archaeologist Sarah Mattiussi Gutierrez and District 7 Native American Coordinator Mariam Dahdul talked to the San Manuel Band of Mission Indians’ Director of Cultural Resources Management Lee Clauss about a project adjacent to the proposed Avenue K project. Ms. Clauss had concerns on how to best approach monitoring areas that appeared to have a high potential for buried</p>

Native American Individual/ Group	Date of First Contact via Letter	Date of Reply	Date(s) of Subsequent Contacts	Summary of Conversation
				resources on both the adjacent project and the proposed Avenue K project. Caltrans agreed that additional information needs to be gathered with regards to construction activities in the potentially sensitive areas. Once the additional information is gathered, it will be determined if monitoring is necessary. In order for the report for Avenue J and the current report for Avenue K to be consistent, the comments for Avenue J were sent to ICF to apply to the report for the Avenue K project. Caltrans staff will provide Ms. Clauss the draft report for review once the comments have been addressed.
John Valenzuela, Chairperson, San Fernando Band of Mission Indians	3/16/2017	None	4/18/2017 8/14/2017	4/18/2017: Follow-up phone call by S. Kitchel to John Valenzuela; spoke with unknown male recipient and he stated Mr. Valenzuela was not available but will call back. Email sent. 8/14/2017: Follow-up email sent to Mr. Valenzuela.

4.2.2 Biological Resources

4.2.2.1 USFWS Listed Threatened and Endangered Species

On August 10, 2017, an official USFWS List of Proposed, Threatened, and Endangered Species, and Critical Habitats was obtained through the USFWS Information, Planning, and Conservation System (Caltrans 2018c).

4.1 Community Open House and Scoping Meeting Materials

4.1.1 Photographs



4. Comments and Coordination



4.1.3 Event Flyer

GET INVOLVED!
www.sr138Lancaster.com

Corridor Improvements

Community Open House

March 15, 2016

Lancaster National Soccer Center, East Activity Building,
3145 E Avenue L, Lancaster CA 93535
5:00 p.m. – 8:00 p.m.

This is your opportunity to

- Find out about the project history and purpose
- Interact with and ask specific questions of project team members
- Provide your comments & feedback on the project

lancaster ca
it's positively clear

For more information, please visit
www.sr138lancaster.com
or call the Project Hotline
at (661) 945-6862

M Metro
This project contributes to transportation improvement and is funded by Metro (www.metro.net)

Please join your fellow residents and other interested community members for this important scoping meeting!

4.1.4 Project Fact Sheet

PROJECT FACT SHEET PAGE 1

Project Description:

The City of Lancaster has secured more than \$65 million dollars from the Los Angeles County Metropolitan Transportation Authority (Metro) to receive SR-138 (SR-14) Measure R Highway "Equity" Funds to improve and enhance the Avenue M, L, K, J and G interchanges.

Since this Measure R funding is enough to improve five of our seven interchanges, we have been provided a unique opportunity to redesign each one according to a unified theme that will give visitors, commuters, and residents a sense of arrival when they drive through Lancaster.

The purpose of these projects is to improve operational capacity at the interchanges and surrounding local streets, eliminating congestion, improving mobility between the freeway and local streets, enhancing safety and improving way-finding and other context sensitive solutions.

Obtaining funding for five interchanges at once allows the City to look at the big picture:

- How the interchanges work together.
- How the interchanges work with local streets.
- What we can do to unify a theme along the freeway and on adjoining local streets to give visitors a sense of arrival and a sense of place.

	2016	2017	2018	2019	2020
Avenue K	Alternatives & Environmental Document (PA&E) 18 months	Design, RFP, Bid (P&A) 18 months		Construction 12 months	
Avenue M	Alternatives & Environmental Document (PA&E) 18 months	Design, RFP, Bid (P&A) 18 months		Construction 12 months	
Avenue G	Alternatives & Environmental Document (PA&E) 18 months	Design, RFP, Bid (P&A) 18 months		Construction 12 months	
Avenue J	Alternatives & Environmental Document (PA&E) 18 months	Design, RFP, Bid (P&A) 18 months		Construction 12 months	
Avenue L	Alternatives & Environmental Document (PA&E) 12 months		Design, RFP, Bid (P&A) 18 months		Construction 14 months
Interchange (PA&E) Phase	RFP, meeting, meeting, meeting, meeting (by group)			Construction Detour (RFP, meeting, meeting, meeting (by group))	

PROJECT FACT SHEET PAGE 2

Chapter 5 Distribution List

Copies of the Initial Study were made available for viewing at the following locations.

Caltrans website: <http://www.dot.ca.gov/dist07/resources/envdocs>

Caltrans District 7	100 S. Main Street Los Angeles, CA 90012
Lancaster City Hall	44933 Fern Ave Lancaster, CA 93534
Lancaster Public Library	601 W Lancaster Blvd Lancaster, CA 93534
County of Los Angeles County Library	5040 West Avenue M-2 Quartz Hill, CA 93536

5.1 Mailing List

5.1.1 Elected Officials

5.1.1.1 Federal

Senator Dianne Feinstein
11111 Santa Monica Blvd. Suite 915
Los Angeles, CA 90025

Congressman Kevin McCarthy
4100 Empire Drive Suite 150
Bakersfield, CA 93309

Senator Kamala Harris
11845 West Olympic Boulevard, Suite 1250W
Los Angeles, CA 90064

Congressman Steve Knight
1008 West Avenue M-14, Suite E
Palmdale, CA 93551

5.1.1.2 State

Assembly member Tom Lackey
41319 12th Street West, Suite 105,
Palmdale, CA 93551

State Senator Scott Wilk
848 W. Lancaster Blvd, Suite 101
Lancaster, CA 93534

5.1.1.3 County

Supervisor Kathryn Barger
1113 W. Avenue M-4, Suite A
Palmdale, CA 93551

5.1.1.4 City of Lancaster

City Manager Mark V. Bozigian
44933 Fern Ave
Lancaster, CA 93534

Councilmember Raj Malhi
44933 Fern Ave
Lancaster, CA 93534

Mayor R. Rex Parris
44933 Fern Ave
Lancaster, CA 93534

Councilmember Angela Underwood-Jacobs
44933 Fern Ave
Lancaster, CA 93534

Vice Mayor Marvin Crist
44933 Fern Ave
Lancaster, CA 93534

Councilmember Ken Mann
44933 Fern Ave
Lancaster, CA 93534

5.1.2 Governmental Agencies

5.1.2.1 Federal Agencies

U.S. Environmental Protection Agency
600 Wilshire Blvd., Suite 1460
Los Angeles, CA 90017

NOAA Fisheries
West Coast Region
501 W. Ocean Blvd., Suite 4200
Long Beach, CA 90802-4213

USDC National Oceanic and Atmospheric
Administration (NOAA)
1315 East West Highway
Silver Spring, MD 20910

US Fish and Wildlife Service
370 Amapola Avenue #114
Torrance, CA 90501

US Department of Interior, National Park Service
333 Bush Street, Suite 500
San Francisco, CA 94104-2828

U.S. Fish and Wildlife Service
2493 Portola Rd., Suite B
Ventura, CA 93003

Advisory Council on Historic Preservation
401 F St. NW, Suite 308
Washington, DC 20001-2637

U.S. Environmental Protection Agency
Region 9, Environmental Review Office
75 Hawthorne Street, (ENF-4-2)
San Francisco, CA 94105

NOAA Fisheries
Office of Ecology and Conservation
1401 Constitution Avenue, Rm 6800
Washington, DC 20230

US Federal Emergency Management Agency
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

US Department of Transportation,
Federal Highway Administration, California Division
888 S. Figueroa Street, Suite 750
Los Angeles, CA 90017

U.S. Army Corps of Engineers
915 Wilshire Blvd., Suite 980
Los Angeles, CA 90017

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

5.1.2.2 State Agencies

California Air Resources Board
Air Quality Science and Planning Division
P.O. Box 2815
Sacramento, CA 95812

California Department of Transportation
Division of Environmental Analysis
P.O. Box 942874, MS-27
Sacramento, CA 94274-0001

California Regional Water Quality Control Board
Lahontan Region
15095 Amargosa Rd., Bldg 2 - Suite 210
Victorville, CA 92394

California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

California Environmental Protection Agency
1001 I Street, P.O. Box 2815
Sacramento, CA 95812

California Department of Fish and Wildlife
South Coast Region 3883 Ruffin Road
San Diego, CA 92123

California Highway Patrol
West Los Angeles 6300 Bristol Parkway
Culver City, CA 90230

California Transportation Commission
1120 N Street, Room 2221, MS-52
Sacramento, CA 95814

Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

California Department of Parks and Recreation
1416 9th Street
Sacramento, CA 95814

California Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812-0806

California Department of Fish and Wildlife
P.O. Box 1179
Ventura, CA 93012

California Public Utilities Commission
320 W 4th Street
Los Angeles, CA 90013

California State Historic Preservation Officer
1725 23rd St., Ste. 100
Sacramento, CA 95816

California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236

5.1.2.3 Regional Agencies

LA County Waterworks Districts
#40 Lancaster Office
Antelope Valley Office
260 East Avenue K-8
Lancaster, CA 93535

Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012-2952

South Coast Air Quality Management District
Flood Control District
21865 Copley Drive
Diamond Bar, CA 91765

Southern California Edison Company
SCE Corp
P.O. Box 800
Rosemead, CA 91770

5.1.2.4 Los Angeles County Agencies

County of Los Angeles
Department of Public Works
900 S. Fremont Avenue
Alhambra, CA 91803

County of Los Angeles
Antelope Valley - Division Headquarters
Fire Station #129
42110 6th Street West
Lancaster, CA 93534

County of Los Angeles
Fire Station #134
43225 25th Street West
Lancaster, CA 93536

Los Angeles County Sanitation Districts
1955 Workman Mill Rd
Whittier, CA 90601

County of Los Angeles
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, California 90012

County of Los Angeles
Sheriff's Department Lancaster Station
501 W. Lancaster Blvd
Lancaster, CA 93534

Los Angeles County Metropolitan Transportation
Authority
One Gateway Plaza
Los Angeles, CA 90012

Los Angeles County Waterworks District
260 East Ave K-8
Lancaster, CA 93535

5.1.2.5 City of Lancaster Agencies

City of Lancaster City Manager
44933 Fern Ave
Lancaster, CA 93534

City of Lancaster Parks, Recreation & Arts
44933 Fern Ave
Lancaster, CA 93534

City of Lancaster Planning Department
44933 Fern Ave
Lancaster, CA 93534

City of Lancaster Development Services
44933 Fern Ave
Lancaster, CA 93534

Antelope Valley Union High School District
44811 North Sierra Highway
Lancaster, CA 93534

Jonathan Dang, Assistant Engineer
City of Lancaster
44933 N Fern Avenue
Lancaster, CA 93534

Ronda Perez, Director of Parks, Recreation & Arts
City of Lancaster
44933 Fern Avenue
Lancaster, CA 93534

City of Lancaster Library
601 W Lancaster Blvd
Lancaster, CA 93534

City of Lancaster Parks, Recreation & Arts Department
44933 N. Fern Avenue
Lancaster, CA 93534

Lancaster School District
44711 N. Cedar Avenue
Lancaster, CA 93534

Lancaster City Hall
44933 Fern Avenue
Lancaster, CA 93534

Robert Neal, Director of Public Works
City of Lancaster
44933 Fern Avenue
Lancaster, CA 93534

City of Lancaster Planning Department
44933 N. Fern Avenue
Lancaster, CA 93534

5.1.3 Public Stakeholders

Carlos & Wendy Estrada
1203 W Avenue K
Lancaster, CA 93534

Frank J & Elaine M Grado
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Prater Lorraine A CO TR
P.O. Box 4349
Anaheim, CA 92803

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1 Geoffrey Way
Wayne, NJ 07470

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Chapter 6 List of Preparers

6.1 California Department of Transportation

Maria G Bernardez	Environmental Planner
Karl Price	Senior Environmental Planner
Michael Klima	District Biologist
Paul Caron	Senior District Biologist
Kelly Ewing-Toledo	Senior District Environmental Planner, Cultural Resources
Sarah Mattiussi-Gutierrez	Associate Environmental Planner, Cultural Resources
Dawn Kukla Montano	Supervising Environmental Planner
Jin S. Lee	Senior Transportation Engineer
Andranik Arzumanian	Senior Transportation Engineer
Penny Nakashima	Senior Geologist Engineer, Hazardous Waste
Utpala Patel	Hazardous Waste Specialist
Kathleen Ledesma	Landscape Associate
Patricia Watanabe	Senior Landscape Architect
John Lee	Project Manager
Andrew Yoon	Senior Transportation Engineer, Air Quality
Liberty San Agustin	Transportation Engineer, Air Quality Specialist
Shirley Pak	Senior Storm water Specialist
Sunny Liem	Senior Storm water Specialist
Samer Momani	Associate Environmental Planner, Water Quality
Loi Lam	Storm water Specialist
Barbara Wolf	Climate Change Policy Advisor

6.2 City of Lancaster Public Works Department

Marissa Diaz	Project Manager
--------------	-----------------

6.3 TRC

Richard F. Norton, P.E. Senior Project Manager

6.4 ICF

Namrata Cariapa Project Manager

Lee Lisecki Project Director

Will Herron Environmental Planner

Saadia Byram Technical Editor

Rusty Whisman Environmental Planner - Air Quality & Climate Change Analyst

Dennis Miller Biologist

Cara Snellen Biologist

Richard Starzak Senior Architectural Historian

Stephen Bryne Senior Archaeologist

Eric Moskus Noise Analyst

Peter Hardie Senior Noise Analyst, INCE

Brit Buscombe GIS Specialist

Chapter 7 References

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Appendix A
Layout Profiles

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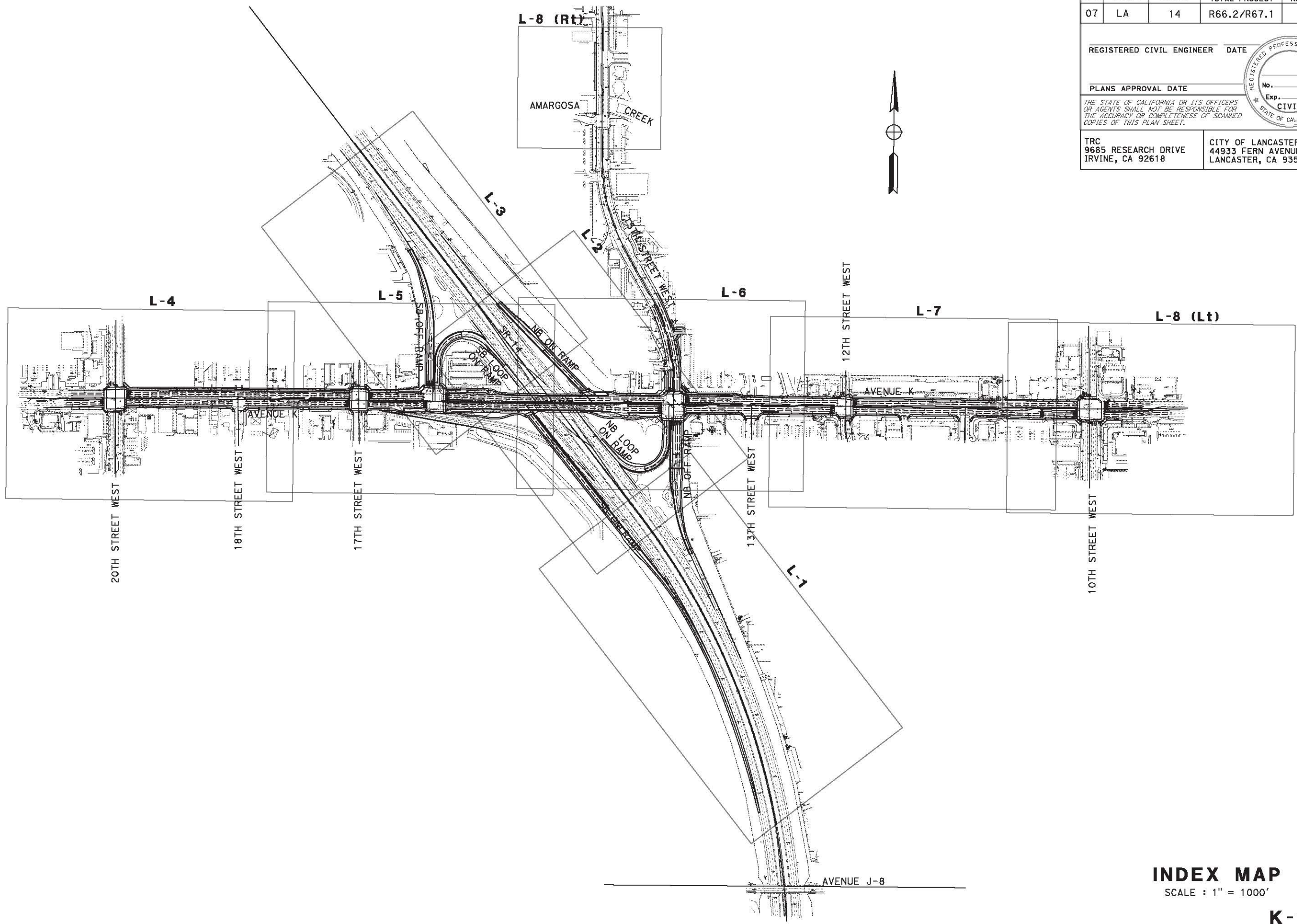
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Caltrans
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 CHECKED BY: []
 REVISED BY: [] DATE REVISED: []

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	14	R66.2/R67.1		

REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____

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 CITY OF LANCASTER 44933 FERN AVENUE LANCASTER, CA 93534



INDEX MAP
 SCALE : 1" = 1000'
K-1

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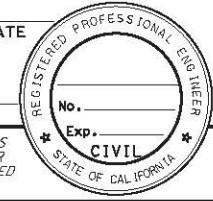
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Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: NORMAN SUYDAM

REVISOR: _____

DATE REVISED: _____

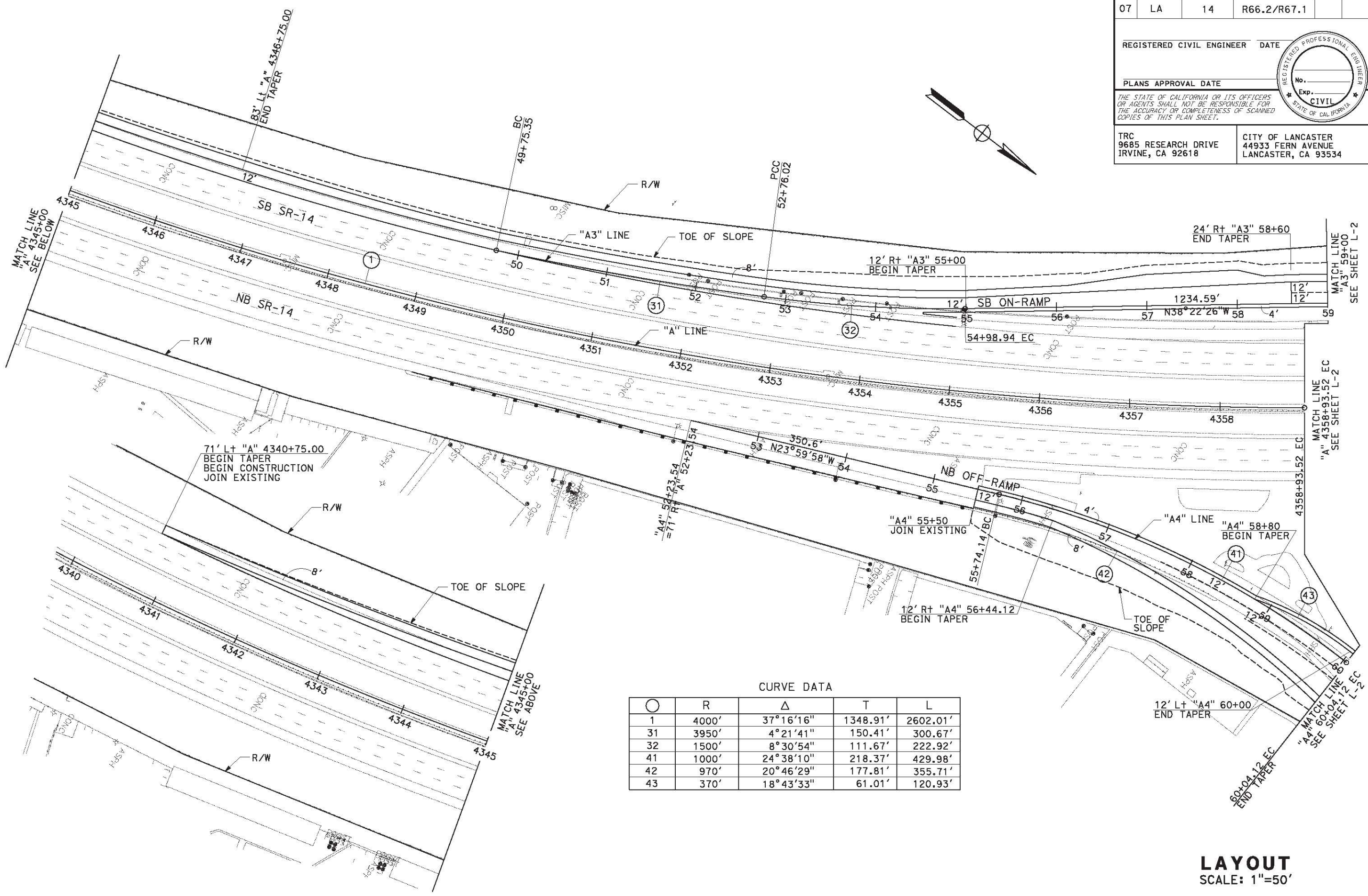
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CHECKED BY: _____

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BORDER LAST REVISED 7/2/2010



CURVE DATA

Curve No.	R	Δ	T	L
1	4000'	37°16'16"	1348.91'	2602.01'
31	3950'	4°21'41"	150.41'	300.67'
32	1500'	8°30'54"	111.67'	222.92'
41	1000'	24°38'10"	218.37'	429.98'
42	970'	20°46'29"	177.81'	355.71'
43	370'	18°43'33"	61.01'	120.93'

LAYOUT
SCALE: 1"=50'

L-1



LAST REVISION: DATE PLOTTED => 17-OCT-2017
08-14-14 TIME PLOTTED => 14:34

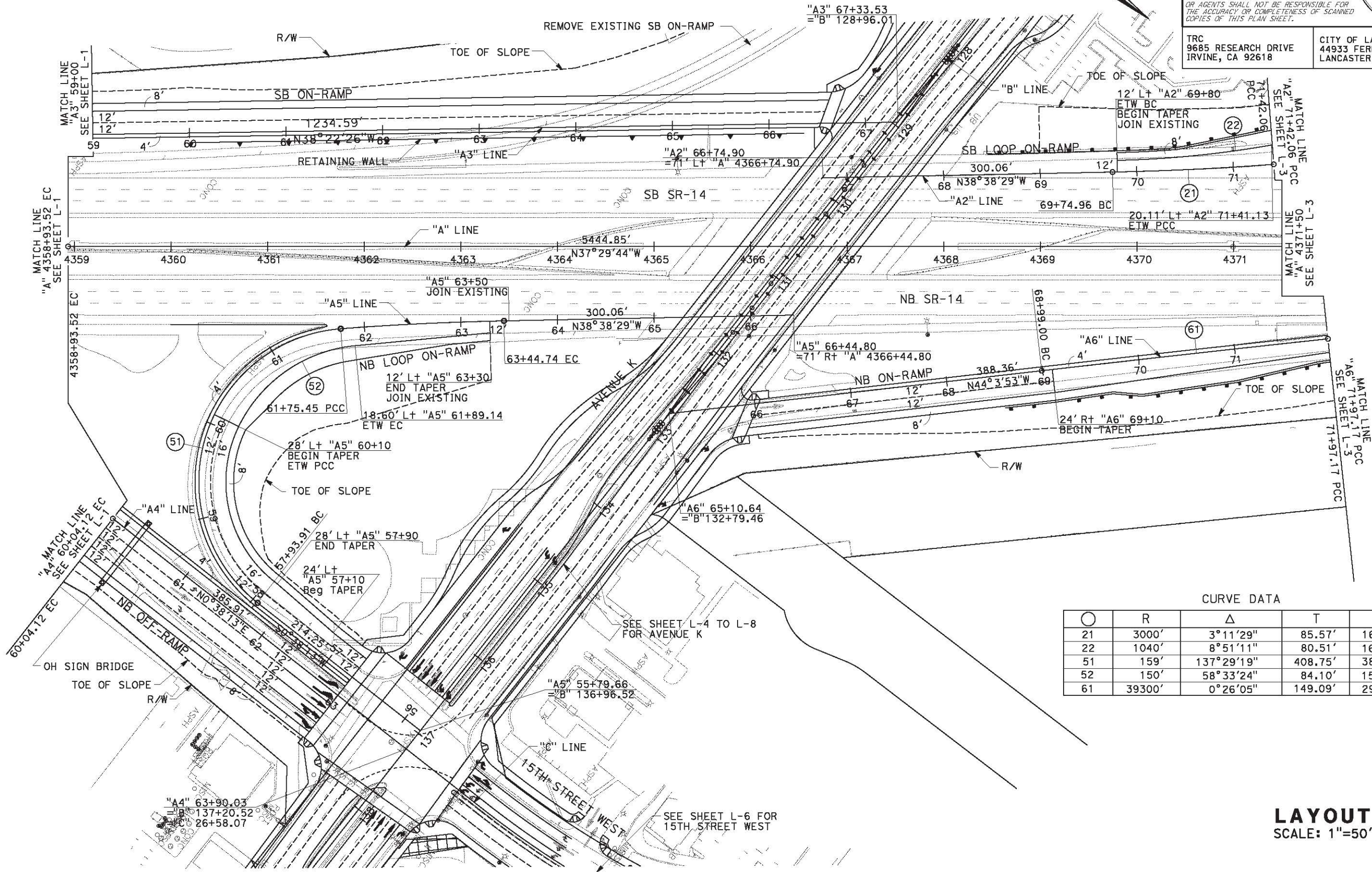
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07	LA	14	R66.2/R67.1		

REGISTERED CIVIL ENGINEER DATE _____
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CURVE DATA

Curve No.	R	Δ	T	L
21	3000'	3°11'29"	85.57'	167.10'
22	1040'	8°51'11"	80.51'	160.69'
51	159'	137°29'19"	408.75'	381.54'
52	150'	58°33'24"	84.10'	153.30'
61	39300'	0°26'05"	149.09'	298.17'

SEE SHEET L-6 FOR 15TH STREET WEST

SEE SHEET L-4 TO L-8 FOR AVENUE K

LAYOUT
 SCALE: 1"=50'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	14	R66.2/R67.1		

REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____
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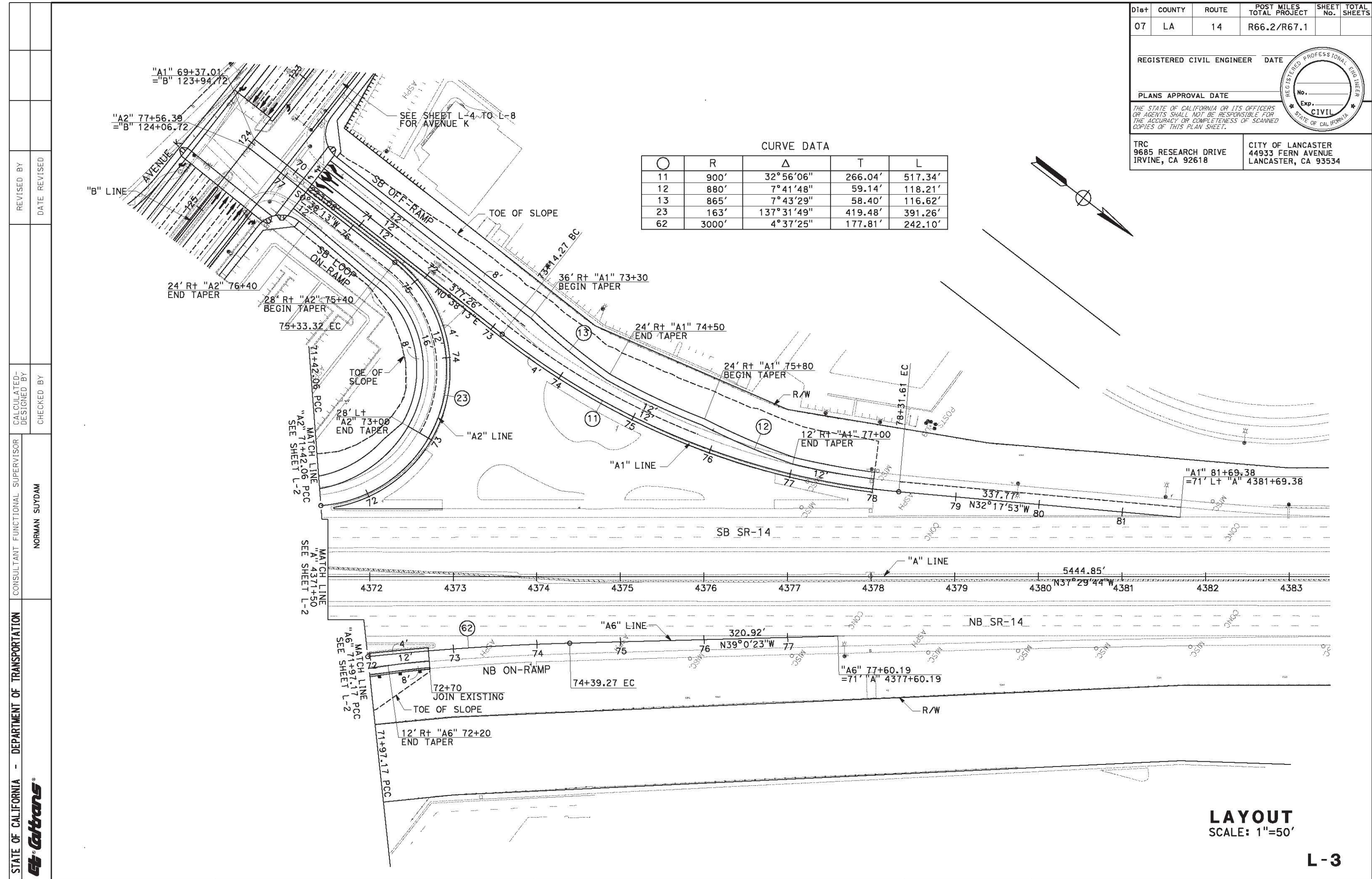
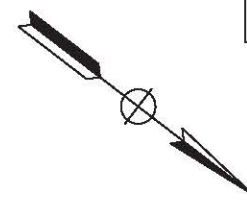


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CURVE DATA

Station	R	Δ	T	L
11	900'	32°56'06"	266.04'	517.34'
12	880'	7°41'48"	59.14'	118.21'
13	865'	7°43'29"	58.40'	116.62'
23	163'	137°31'49"	419.48'	391.26'
62	3000'	4°37'25"	177.81'	242.10'



REVISOR: _____
 DATE: _____
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 CONSULTANT FUNCTIONAL SUPERVISOR: NORMAN SUYDAM
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 STATE OF CALIFORNIA - Caltrans

LAYOUT
 SCALE: 1"=50'

L-3

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LEGEND

NEW RIGHT-OF-WAY

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REGISTERED CIVIL ENGINEER DATE

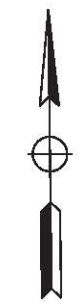
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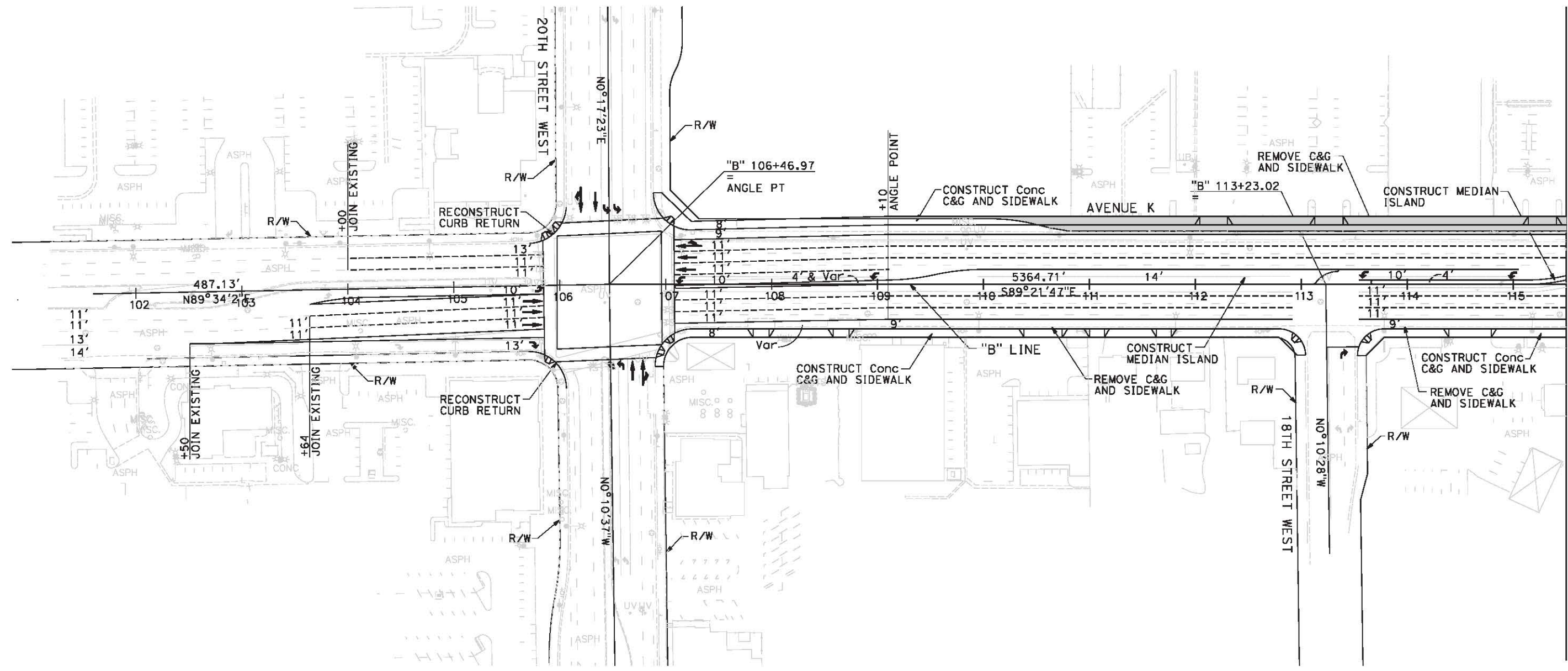


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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR BY
Caltrans	NORMAN SUYDAM	CHECKED BY	DATE REVISED



MATCH LINE
"B" 115+50
SEE SHEET L-5

LAYOUT
SCALE: 1"=50'

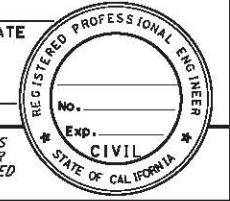
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NEW RIGHT-OF-WAY

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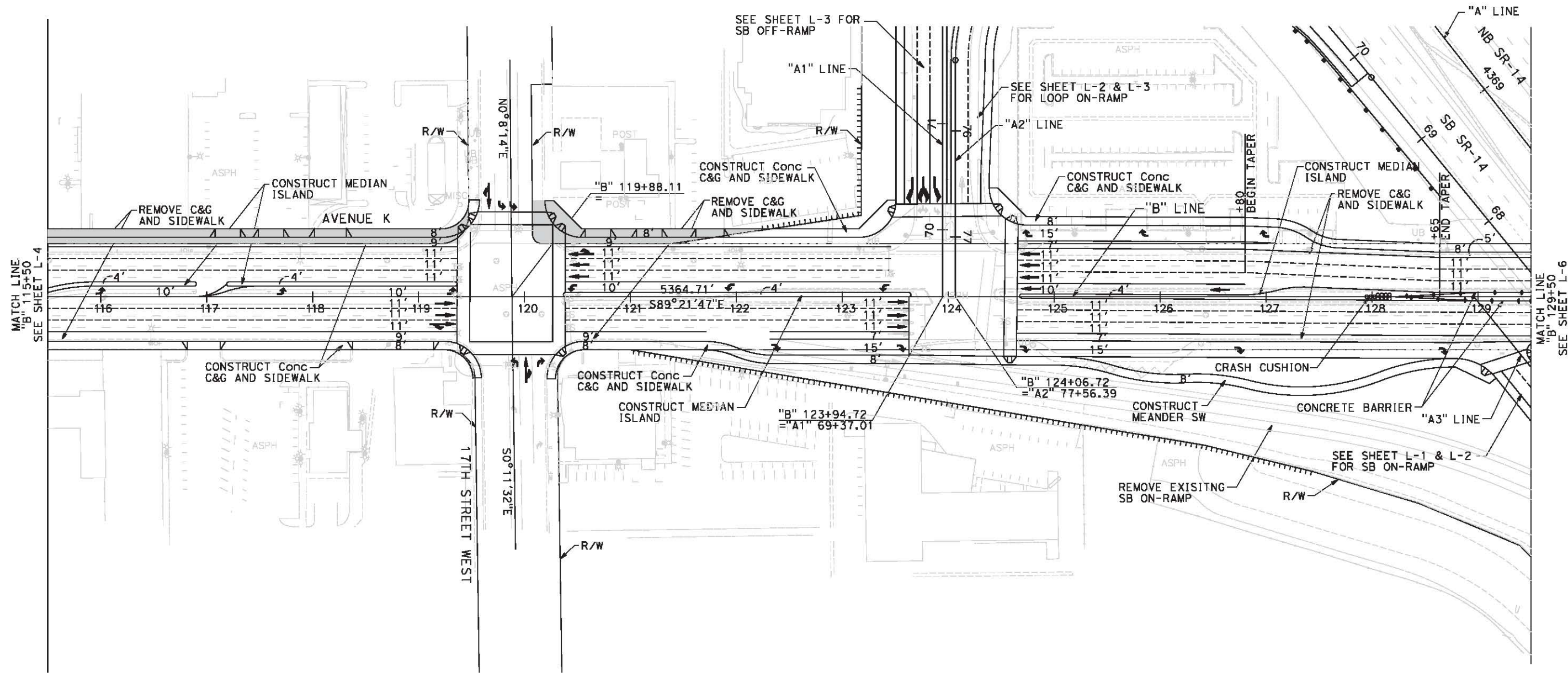
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 CONSULTANT FUNCTIONAL SUPERVISOR
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 REVISOR BY
 DATE REVISOR



LAYOUT
 SCALE: 1"=50'

L-5

LAST REVISION DATE PLOTTED => #DATE 08-14-14 TIME PLOTTED => #TIME

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	14	R66.2/R67.1		

REGISTERED CIVIL ENGINEER DATE _____
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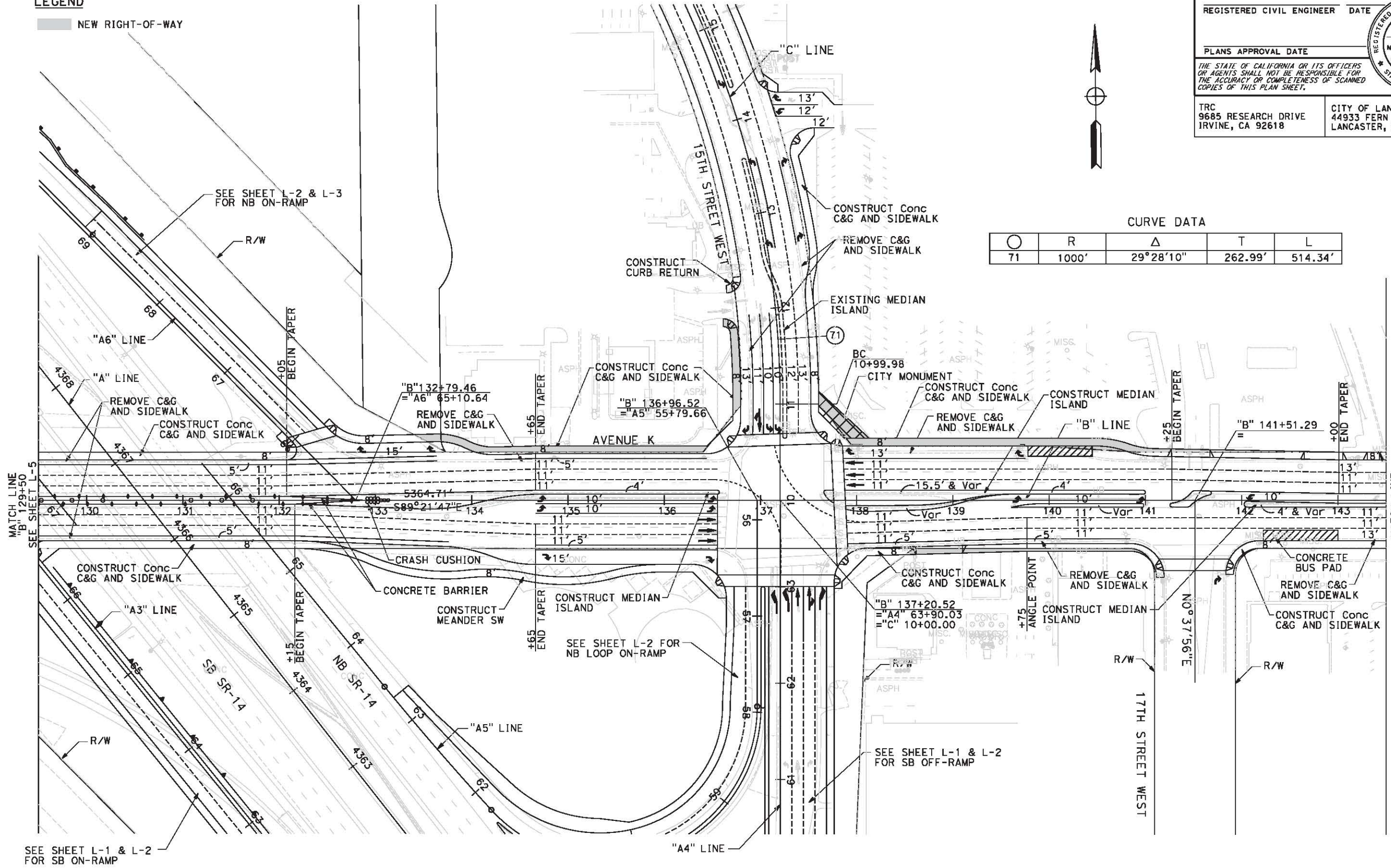
TRC 9685 RESEARCH DRIVE IRVINE, CA 92618
 CITY OF LANCASTER 44933 FERN AVENUE LANCASTER, CA 93534

LEGEND
 ■ NEW RIGHT-OF-WAY



CURVE DATA

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71	1000'	29°28'10"	262.99'	514.34'



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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 REVISIONS: REVISOR, DATE, REVISIONS, DATE

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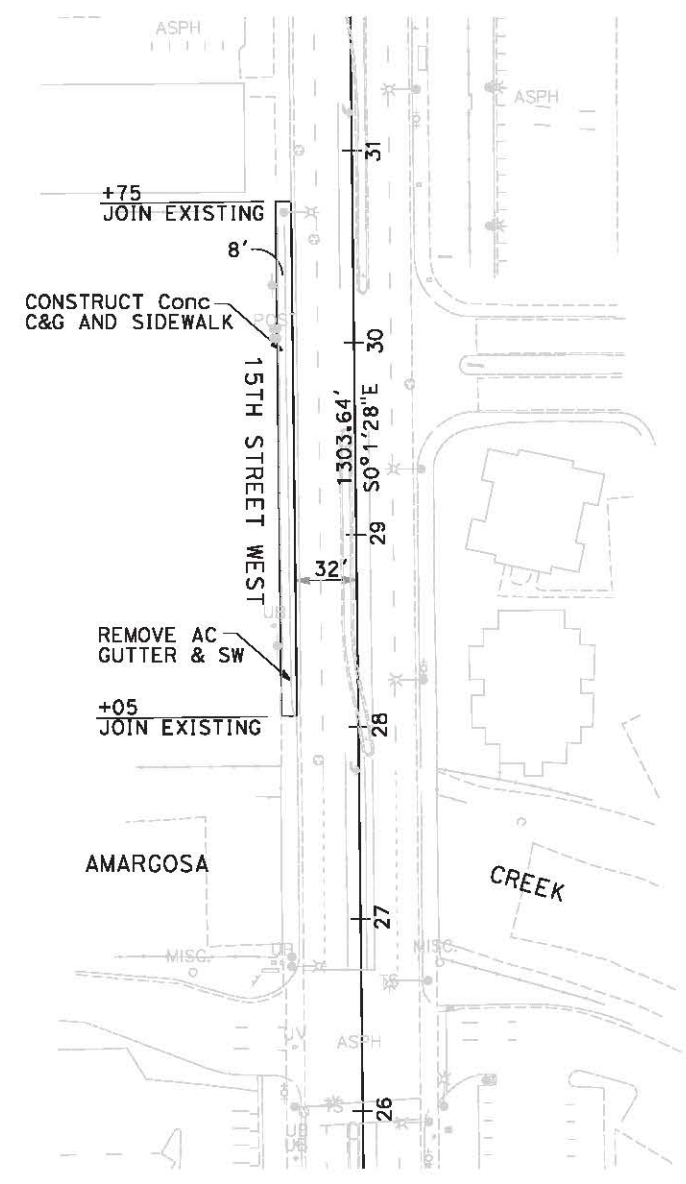
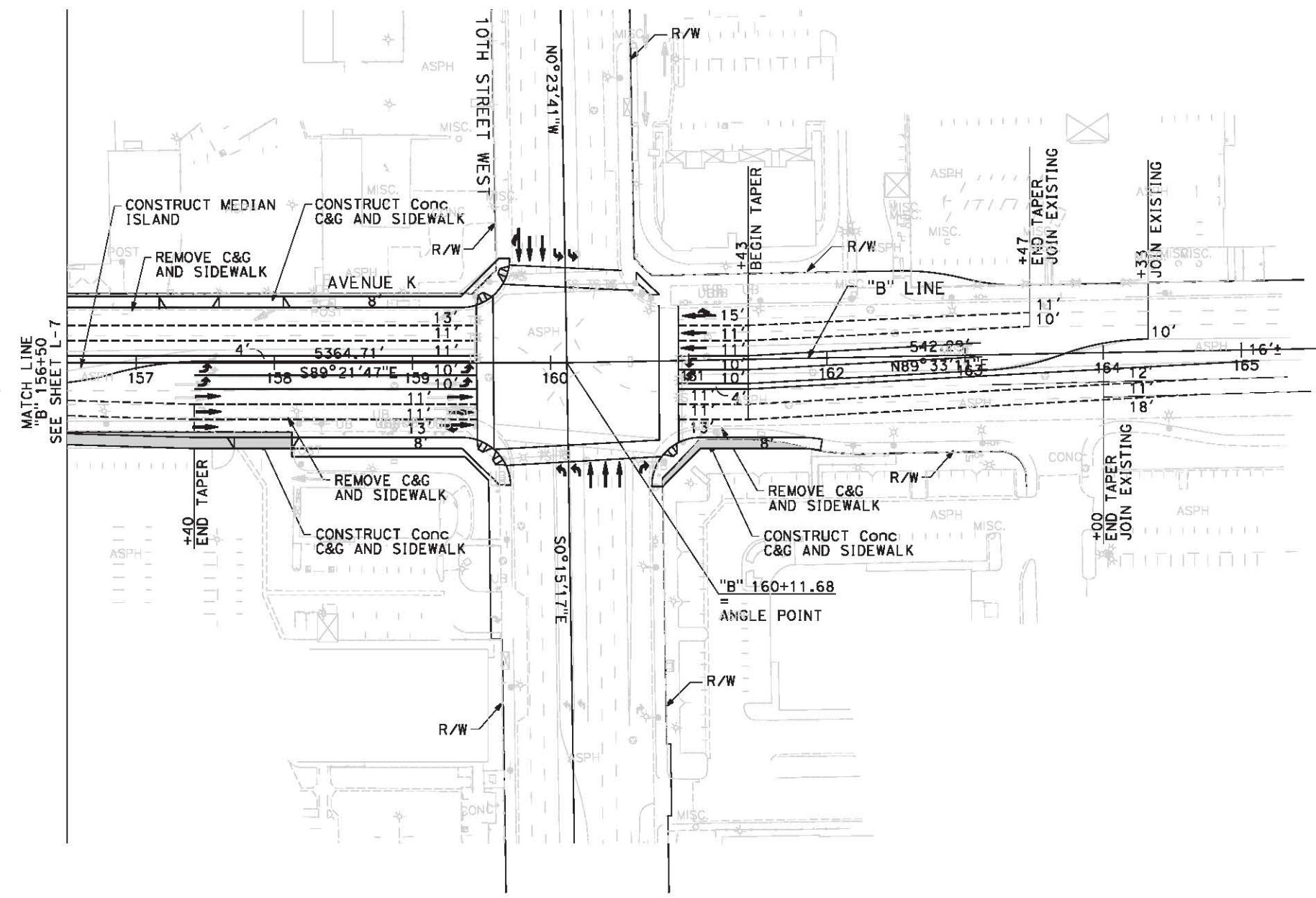
MATCH LINE "B" 129+50 SEE SHEET L-5

LAYOUT
 SCALE: 1"=50'

L-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LEGEND
 ■ NEW RIGHT-OF-WAY



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	14	R66.2/R67.1		

REGISTERED CIVIL ENGINEER DATE []
 PLANS APPROVAL DATE []

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TRC 9685 RESEARCH DRIVE IRVINE, CA 92618
 CITY OF LANCASTER 44933 FERN AVENUE LANCASTER, CA 93534

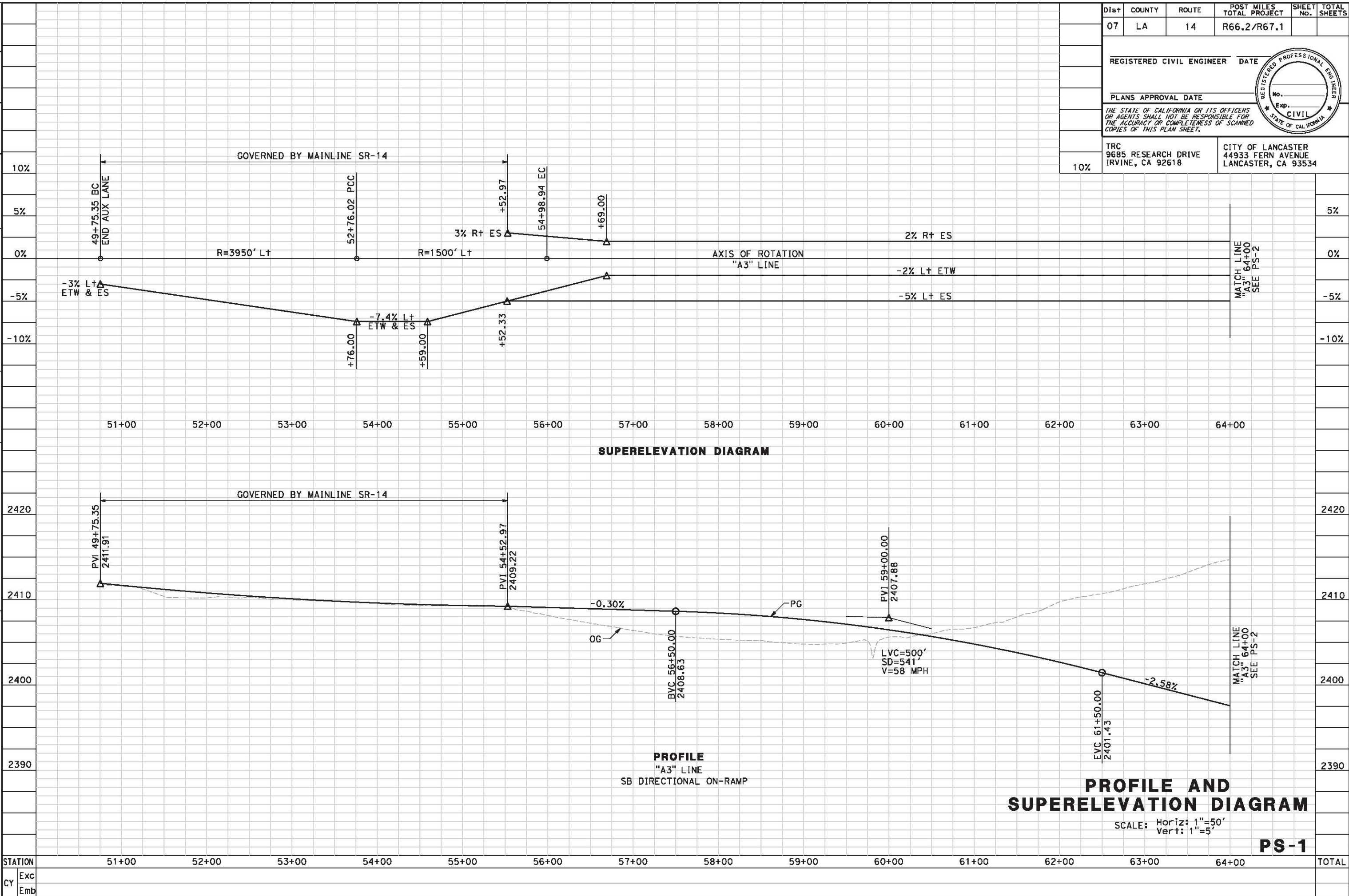
LAYOUT
 SCALE: 1"=50'

L-8

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	14	R66.2/R67.1		
REGISTERED CIVIL ENGINEER					DATE
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
TRC 9685 RESEARCH DRIVE IRVINE, CA 92618			CITY OF LANCASTER 44933 FERN AVENUE LANCASTER, CA 93534		
10%					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR: NORMAN SUYDAM
 CALCULATED-DRAWN BY: [Blank]
 CHECKED BY: [Blank]
 REVISED BY: [Blank]
 DATE REVISED: [Blank]



LAST REVISION DATE PLOTTED => #DATE
08-14-14 TIME PLOTTED => #TIME

Appendix B
Environmental Commitments Record

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Date: (XX/XX/18 EA)

Project Phase: 1

PA/ED

PS&E

Construction

ENVIRONMENTAL COMMITMENTS RECORD

(SR-14/138 and Avenue K Interchange Improvements Project)

07-LA-14/138 PM R66.2/R67.1

EA 07-30590

Avoidance, Minimization, and/or Mitigation Measures	Page # in Env. Doc.	Environmental Analysis Source (Technical Study, Environmental Document, and/or Technical Discipline)	Responsible for Development and/or Implementation of Measure	Timing/ Phase	If applicable, corresponding construction provision: (standard, special, non-standard)	Action(s) Taken to Implement Measure	Measure Completed (Date and Initials)	Remarks	Environmental Compliance	
									YES	NO
AESTHETICS										
<p>Avoidance and Minimization Measure AES-1. At a minimum, the construction contractor shall minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights will be used. Portable lights shall be operated at the lowest allowable wattage and height and shall be raised to a height no greater than 20 feet. All lights shall be screened and directed downward toward work activities and away from the night sky and highway users and highway neighbors, particularly residential areas, to the maximum extent possible. The number of nighttime lights used shall be minimized to the greatest extent possible.</p>		Initial Study/Mitigated Negative Declaration (ISMND)	Contractor	Design/Pre-construction/ Construction						
<p>Avoidance and Minimization Measure AES-2. The project engineer/designer shall implement an aesthetic design treatments with a consistent motif for the paved medians, hardscape features, and new retaining wall. Paved medians and hardscaping other than sidewalks shall be paved and colored to resemble brick pavers, consisting with existing conditions. In addition, the retaining wall shall apply aesthetic design treatments. Choosing earth-toned colors for the surfaces would be less distracting to viewers than light or brightly colored surfaces. The design motif applied to the retaining wall shall reflect a combination of naturally colored surfaces and surfaces that are textured to appear as natural materials (e.g., rock or cobble) or that incorporate a design theme (e.g., wildlife and plants of local, native oak woodlands; traditional architectural elements such as inset panels; or other design reflecting local heritage or environment associated with the City or the Mojave Desert) using form liners. This would reduce visual monotony, soften verticality, reduce glare, and be more visually pleasing to viewers than plain surfaces for retaining walls that would be visible to traffic passing the wall. Roughened retaining wall surfaces would soften the verticality of the wall faces by providing visual texture and reducing the amount of smooth surface that can reflect light. Furthermore, if possible, a plantable wall surface, such as a retaining wall structure that allows interstices for planting shall be evaluated for use as a possible BMP to help introduce more landscaping. However, a plantable wall surface shall not be used if it would require more space and create a greater impact on adjacent landscaping. The shade of the wall shall also be</p>		ISMND	Project Engineer/Designer/ Contractor	Design/Pre-construction/ Construction						

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										YES	NO
carefully considered. Studies have shown that structures two to three degrees darker than the color of the general surrounding area create less of a visual impact than matching or lighter hues. ¹ In general, very light buff/tan, brown, or gray colors stand out more than darker colors such as deep browns, deep red-browns, and deep warm grays that have the ability to complement the surrounding vegetation.											
<p>Avoidance and Minimization Measure AES-3. Landscaping within interchange loops and gores, on constructed earth slopes, and within the medians of Avenue K will improve the visual quality of the roadway corridor by improving corridor aesthetics and helping to reduce the apparent scale of widened travel ways and the new retaining wall. This landscaping will also serve as a buffer and screen against nuisance lighting resulting from oncoming vehicle headlights and roadway lighting and help to prevent or greatly reduce nuisance lighting from affecting nearby sensitive viewers. Prior to approval of the roadway design, the project landscape architect shall work with the Caltrans project landscape architect to review project designs to ensure that the following elements are implemented in the project landscaping plan:</p> <ul style="list-style-type: none"> The majority of the species composition shall reflect species that are native and indigenous to the local area. Native plant species can be used to create attractive spaces, high in aesthetic quality, that are not only drought-tolerant but attract more wildlife than traditional landscape plant palettes. Use of native species promotes a visual character of California that is being lost through development and reliance on non-native ornamental plant species. Non-invasive, non-native plant species may be used where native plant species will not achieve the desired design intent. All areas within the State and City ROW that have landscaping that is disturbed and has plantable space shall be re-planted in a manner that mimics and emulates the existing landscape design within the State ROW. In addition, new medians shall be planted, where space allows. As such, plants shall be selected to ensure that a plant species of 		ISMND	Landscape Architect/ Contractor	Design/Pre-construction/ Construction							

¹ Refer to <https://www.ntc.blm.gov/krc/viewresource.php?courseID=972&programArealD=50>, *Unit 5 Visual Design Fundamentals*, for more information on this technique and other best management practices and techniques for visual screening.

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										YES	NO
<p>similar scale and form, at maturity, replaces the various plants that are removed. In addition, the replacement plants shall have similar aesthetic qualities that the original planted had. For example, oleanders removed as a result of the proposed project shall be replaced by an evergreen shrub that grows to a similar height and spread and flowers.</p> <ul style="list-style-type: none"> The species list shall include trees, shrubs, and an herbaceous understory of varying heights, as well as both evergreen and deciduous types. Plant variety will increase the effectiveness of the roadside planting areas by providing multiple layers, seasonality, diverse habitat, and reduced susceptibility to disease. Evergreen groundcovers or low-growing plants, such as <i>Ceanothus</i> spp., should be used in areas where taller vegetation would potentially cause driving hazards by obscuring site distances. Where space allows, medians and planter strips between commercial parking lots and sidewalks shall also be replanted. Special attention should be paid to plant choices near residences to ensure that species chosen are of an appropriate height and rely on evergreen species to provide year-round light screening from nuisance light. Vegetation shall be planted within the first 12 months following project completion. The design may also incorporate aesthetic features, such as a cobbling swales or shallow detention areas, which can reduce or eliminate the need for irrigation in certain areas. 											
<p>Avoidance and Minimization Measure AES-4. Landscaping and related appurtenances (e.g., fencing, privacy walls, mailboxes, business signage, or similar features) associated with private properties that are removed or damaged as a result of the project shall be relocated on the property as part of the proposed project. This measure applies to areas within the bounds of private properties only and does not apply to landscaping and related appurtenances that are affected within the State or City ROWs. Where plant replacement is feasible, replacements shall occur in accordance with Avoidance and Minimization Measure AES-3, <i>Implement Landscape</i></p>		ISMND	Landscape Architect/ Engineer/Contractor	Design/Pre-construction/ Construction							

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										YES	NO
<p><i>Design Measures</i>, above. The City shall compensate parcel owners, where appropriate and to the degree possible, for landscaping and related appurtenances, fencing, and other similar features that cannot be replaced by the project. Replacement would be of value at least equal to that of existing features. To determine compensation for trees, an arborist certified in appraising a tree for the value it adds to that property shall be used to determine monetary compensation for removal of that tree at such locations. Similarly, a person(s) qualified in evaluating landscape features other than trees, such as fencing, privacy walls, or other similar features, shall be used to determine compensation for loss of features at such locations. The results of the assessment of private-property tree and landscape features shall be used to determine the budget needed to implement this measure and shall be included in the costs to construct the proposed project. Before final project acceptance (i.e., prior to final acceptance of design plans and specifications that will be released for construction contract advertisement and award), funding source(s) for replacement of these features shall be in place.</p>											
<p>Avoidance and Minimization Measure AES-5. All artificial outdoor lighting and overhead street lighting shall be limited to safety and security requirements and the minimum required for driver safety. Lighting shall be designed using Illuminating Engineering Society's design guidelines and in compliance with International Dark-Sky Association-approved fixtures. All lighting shall be designed by the lighting designer to have minimum impact on the surrounding environment and shall use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Therefore, lights shall be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, or backscatter into the nighttime sky. The lowest allowable wattage shall be used for all lighted areas, and the number of nighttime lights needed to light an area shall be minimized. Light fixtures shall have non-glare finishes that shall not cause reflective daytime glare. Lighting shall be designed for energy efficiency, with daylight sensors or timers with an on/off program. Lights shall provide good color rendering with natural light qualities, with the minimum intensity feasible for</p>		ISMND	Project Engineer/Designer/ Contractor	Design/Pre-construction/ Construction							

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										YES	NO
security, safety, and personnel access. Lighting, including light color rendering and fixture types, shall be designed to be aesthetically pleasing. LED lighting shall avoid the use of blue-rich white light lamps and use a correlated color temperature that is no higher than 3,000 Kelvin, consistent with the International Dark-Sky Association's Fixture Seal of Approval Program (International Dark-Sky Association 2010a, 2010b, 2015). In addition, LED lights shall use shielding to ensure that nuisance glare and light spill does not affect sensitive residential viewers. Technologies to reduce light pollution evolve over time; design measures that are currently available may help but may not be the most effective means of controlling light pollution once the project is designed. Therefore, all design measures used to reduce light pollution shall use the technologies available at the time of project design to allow for the highest potential reduction in light pollution.											
BIOLOGICAL RESOURCES											
Avoidance and Minimization Measure BIO-1: Delineation of Project Limits. Construction limits shall be demarcated by construction personnel within 5 days prior to the initiation of construction. Construction personnel shall strictly limit their activities, vehicles, equipment, and construction materials to the project footprint and designated staging areas and routes of travel. The construction area(s) shall be the minimal area necessary to complete the proposed project and shall be specified in the construction plans. Construction personnel shall be instructed that their activities are restricted to construction areas.		ISMND	Contractor/Contractor-supplied Biologist	Construction							
Avoidance and Minimization BIO-2: Best Management Practices for Erosion Control and Water Pollution. Applicable BMPs shall be implemented. These shall include, but are not limited to: <ul style="list-style-type: none"> • Active construction areas shall be watered regularly to control dust and minimize impacts on adjacent vegetation. • Water pollution and erosion control plans shall be developed and implemented in accordance with CDFW requirements. • Equipment storage, fueling, and staging areas shall be located at sites with minimal risks of direct 		ISMND	Contractor/Contractor-supplied Biologist	Design/Pre-construction/ Construction							

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										YES	NO	
<p>drainage into surface waters. Project-related spills of hazardous materials shall be reported to appropriate entities including, but not limited to, the County and/or RWQCB, and cleaned up immediately. Contaminated soils shall be removed to approved disposal areas.</p> <ul style="list-style-type: none"> To avoid attracting wildlife to the project site, the construction area shall be kept as clean of debris as possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the site(s). Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds before mobilizing to the site and before leaving the site during the course of construction. Cleaning of equipment shall occur at least 300 feet from Environmentally Sensitive Area fencing in a designated area. Any exotic species that are removed during construction shall be properly handled to prevent sprouting or regrowth. Trucks carrying loads of vegetation removed from the project site shall be covered; vegetation shall be disposed of in accordance with applicable laws and regulations. Disturbed areas shall be restored to pre-project conditions. Any planned revegetation or erosion control activities as part of restoration shall be completed using non-invasive species. Appropriate firefighting equipment (e.g., extinguishers, shovels, water trucks) shall be available on the project site during all phases of project construction to help minimize the chance of construction-related wildfires; personnel shall be trained in the use of such equipment. Shields, protective mats, and/or other fire-preventative methods shall be used during grinding, welding, and other spark-inducing activities. Smoking shall be prohibited within and adjacent to flammable vegetation. 												
<p>Avoidance and Minimization Measure BIO-3: Focused Burrow Surveys. In order to further identify the potential for burrowing owl to occur in the PIA, a focused survey shall be conducted in all non-developed portions of the PIA. If no suitable burrows</p>		ISMND	Qualified Biologist/Contractor	Pre-construction								

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										YES	NO
are identified, no protocol-level surveys are required and measures BIO-4 through BIO-6 shall not be required. If suitable burrows are found, protocol-level surveys for burrowing owls shall be required. Current CDFW protocol requires that a qualified biologist conduct a focused survey within suitable habitat in the PIA and a 300-foot buffer where accessible to determine presence or absence of the species. The survey shall include four survey visits. One visit shall occur between February 15 and April 15. A minimum of three visits shall occur between April 15 and July 15, with at least one of those visits occurring after June 15. The surveys shall occur during favorable weather conditions (i.e., surveys shall not be conducted during rain, high winds [>20 mph], dense fog, or temperatures over 90°F) from morning civil twilight to 10:00 a.m. and/or from 2 hours before sunset until evening civil twilight. If burrowing owls are present, BIO-5 and BIO-6 shall be implemented.											
Avoidance and Minimization Measure BIO-4: Take Avoidance Burrowing Owl Survey. To determine if burrowing owls are occupying the project limits or adjacent areas prior to construction, a take avoidance survey, following CDFW protocol (2012), shall be conducted no more than 7 days prior to initiating ground disturbance activities. In addition, any time lapses between project activities would trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance. The survey shall be conducted from civil twilight to 10:00 a.m. or 2 hours before sunset until evening civil twilight within areas providing suitable habitat for burrowing owls. The survey will include the proposed project limits and a 300-foot buffer if performed between February 1 and August 31 (burrowing owl nesting season) and a 100-foot buffer if the survey is conducted outside of the nesting season. If burrowing owls are present, BIO-5 and BIO-6 shall be implemented.		ISMND	Qualified Biologist/Contractor	Pre-construction/ Construction							
Avoidance and Minimization Measure BIO-5: Avoidance of Burrowing Owl during the Nesting Season. If burrowing owls are found during pre-construction take avoidance surveys (BIO-4) during the nesting season, the burrowing owls shall be fully avoided by establishing an appropriate buffer (minimum of 200 feet), where feasible. This buffer can be reduced by a qualified biologist after monitoring burrowing owls and determining that the proposed		ISMND	Qualified Biologist/Contractor	Pre-construction/ Construction							

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										YES	NO
activity would not greatly change the burrowing owl activity. Biological monitoring shall be required for any work within 200 feet of an occupied burrowing owl burrow.											
Avoidance and Minimization Measure BIO-6: Passive Relocation of Burrowing Owl. If burrowing owls are present during preconstruction take avoidance surveys (BIO-4) and avoidance measures are not feasible, passive relocation by a qualified ornithologist may be conducted once it has been confirmed that pairing activities have not begun. Passive relocation efforts shall be conducted in coordination with CDFW. If the burrowing owls are found to be paired and exhibiting potential nesting behavior, the burrowing owls shall be fully avoided as discussed in BIO-5 until it is confirmed by the qualified biologist that the pair is not nesting and that young are not present, or if present are independently foraging.		ISMND	Qualified Biologist/Contractor	Pre-construction/ Construction							
Mitigation Measure BIO-7: Creation of Burrows. If unoccupied burrows identified during focused burrow surveys (BIO-3) cannot be feasibly avoided, existing burrows will be enhanced (enlarged or cleared of debris) or new burrows will be created (by installing artificial burrows) at a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.		ISMND	Qualified Biologist/Contractor	Pre-construction/ Construction							
Mitigation Measure BIO-8: Burrowing Owl Monitoring Plan. If unoccupied burrows identified during focused burrow surveys (BIO-3) cannot be feasibly avoided, a monitoring plan, which will include mitigation success criteria and a monitoring schedule, will be developed and implemented. The plan will be submitted to the CDFW for review prior to construction, and an annual report will be submitted to the CDFW.		ISMND	Qualified Biologist/Project Engineer	Pre-construction/ Construction							
Avoidance and Minimization Measure BIO-9: Preconstruction Survey for Nesting Migratory Birds. If vegetation removal commences during the bird breeding season (defined as February 1 through September 1), a preconstruction survey by an experienced biologist shall occur within 48 hours prior to the initiation of construction activities. The survey shall occur within all suitable nesting habitat proposed for removal and/or disturbance within the PIA and a 150-foot buffer (plus an additional 200-foot visual assessment for nesting raptors), as access is allowed. If nesting birds are found, an initial 150-foot passerine		ISMND	Qualified Biologist/Contractor	Pre-construction/ Construction							

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							YES	NO		YES	NO
species and 500-foot raptor species (or other distance determined through coordination with the wildlife agencies) avoidance area shall be established around the nest using orange snow fencing until a qualified biologist has determined that young have fledged or nesting activities have ceased. If nesting listed species are detected, the wildlife agencies will be contacted and a 500-foot (or other distance determined through coordination with the wildlife agencies) avoidance area will be established around the nest using orange snow fencing until a qualified biologist has determined that young have fledged or nesting activities have ceased. In the event that vegetation trimming, removal, or other construction activities are suspended for 5 days or more, a preconstruction nesting bird survey shall be conducted within 48 hours prior to re-initiation of work.											
CULTURAL RESOURCES											
Avoidance and Minimization Measure CUL-1: Stop work if buried cultural deposits are encountered during construction activities. If buried cultural resources, such as chipped or ground stone, historic debris, or building foundations, are inadvertently discovered during ground-disturbing activities, work shall immediately stop within a 100-foot radius of the find until a qualified archaeologist can assess the significance of the find, treat the find according to accepted practices, and, if necessary, develop a response plan. Preservation in place shall be the preferred treatment method, per State CEQA Guidelines Section 15126.4(b) (Avoidance, Open Space, Capping, Easement).		ISMND	Contractor/Project Engineer/ Qualified Archaeologist	Construction							
Avoidance and Minimization Measure CUL-2: Stop work if human remains are encountered during construction activities. If human skeletal remains are encountered, ground-disturbing activities shall stop within a 100-foot radius of the discovery. Under HSC Section 7050.5, if human remains are discovered during any project activity, the County Coroner must be notified immediately. If human remains are exposed, HSC Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition, pursuant to California PRC Section 5097.98. If the County Coroner determines that the remains are Native American, the coroner shall contact the NAHC within 24 hours. A qualified archaeologist shall also be contacted immediately.		ISMND	Contractor/Project Engineer/ Qualified Archaeologist/ California State Native American Heritage Commission	Construction							

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							YES	NO		YES	NO
The NAHC, pursuant to PRC Section 5097.98, shall immediately notify those persons it believes to be most likely descended from the deceased person so they can inspect the burial site and make recommendations for treatment or disposal.											
Avoidance and Minimization Measure CUL-3: Archaeological and Native American monitoring of ground-disturbing activities. Monitoring during all earth moving activities shall be performed by a qualified archaeologist and a professional tribal monitor from San Manuel Band of Mission Indians. At least 14 days before start of construction, Caltrans shall enter an agreement with San Manuel Band of Mission Indians specifying appropriate treatment of inadvertent discoveries of cultural resources. A tribal monitor shall be required on-site during all ground disturbing activities. The monitor shall have the authority to temporarily halt ground disturbing activities in the area of the find to allow recovery of cultural resources in coordination with the Project Archaeologist.		ISMND	Contractor/Project Engineer/ Qualified Archaeologist/ Tribal Monitor	Construction							
Avoidance and Minimization Measure CUL-4: Stop work if paleontological resources are encountered during construction activities. During grading and site preparation activities, if paleontological resources are encountered, all work in the immediate vicinity of the find shall halt until a qualified paleontologist can evaluate the find and make recommendations. Paleontological resource materials may include fossils, plant impressions, or animal tracks that have been preserved in rock. Impacts on these resources, if not properly handled, would be potentially adverse. If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery would be required. Construction shall not resume until the appropriate avoidance and minimization measures are implemented or the materials are determined to be less than significant.		ISMND	Contractor/Project Engineer/ Qualified Paleontologist	Construction							
HAZARDS AND HAZARDOUS MATERIALS											
Avoidance and Minimization Measure HAZ-1: If odiferous, stained or discolored soil is encountered during construction, the construction contractor shall perform the following: <ul style="list-style-type: none"> • Construction personnel shall seek the professional recommendation of a consultant who specializes in the handling and identification of hazardous 		ISMND	Project Engineer/Contractor	Construction							

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										YES	NO
materials. The suspect soil shall be isolated and covered and bypassed by construction personnel until analytical results are reviewed by qualified personnel. Analytical results shall be compared to EPA's Regional Screening Levels for residential developments. ² Regional Screening Levels are screening levels developed by EPA for common environmental pollutants.											
HYDROLOGY AND WATER QUALITY											
Avoidance and Minimization Measure WQ-1: Work areas in waterways will be reduced to the maximum extent feasible to minimize impacts.		ISMND	Project Engineer/Designer Contractor	Design/Construction							
Avoidance and Minimization Measure WQ-2: Staging areas will be located outside waterways to reduce direct and indirect impacts on the creek and drainages in the project area.		ISMND	Project Engineer/Contractor	Design/Construction							
Avoidance and Minimization Measure WQ-3: Measures will be implemented during construction to minimize the potential for dust, debris, and construction materials to fall into the creek, or otherwise leave the construction area.		ISMND	Project Engineer/Designer/ Contractor	Construction							
Avoidance and Minimization Measure WQ-4: The contractor will implement appropriate hazardous material BMPs to reduce the potential for chemical spills or containment releases into water bodies, including any non-storm water discharge.		ISMND	Project Engineer/Contractor	Construction							
Avoidance and Minimization Measure WQ-5: All equipment refueling and maintenance will be conducted in the upland staging area per standard specifications and regulatory permits. In addition, vehicles and equipment will be checked daily for fluid and fuel leaks, and drip pans will be placed under all equipment that is parked and not in operation.		ISMND	Project Engineer/Contractor	Construction							
Avoidance and Minimization Measure WQ-6: All trash and construction debris will be removed from channels and construction areas on a daily basis. All BMPs will be properly maintained during project construction and removed upon completion of construction activities. After completion of the project, all construction equipment and materials will be removed from the project area, and the project area will be returned to pre-project conditions.		ISMND	Project Engineer/Contractor	Construction							

² Residential being the more conservative of the two land uses considered for Regional Screening Levels, the other being industrial.

Date: (XX/XX/18 EA)

Project Phase: 1

PA/ED

PS&E

Construction

ENVIRONMENTAL COMMITMENTS RECORD

(SR-14/138 and Avenue K Interchange Improvements Project)

07-LA-14/138 PM R66.2/R67.1
EA 07-30590

Avoidance, Minimization, and/or Mitigation Measures	Page # in Env. Doc.	Environmental Analysis Source (Technical Study, Environmental Document, and/or Technical Discipline)	Responsible for Development and/or Implementation of Measure	Timing/ Phase	If applicable, corresponding construction provision: (standard, special, non-standard)	Action(s) Taken to Implement Measure	Measure Completed (Date and Initials)		Remarks	Environmental Compliance	
										YES	NO
Avoidance and Minimization Measure WQ-7: Following completion of construction activities, appropriate erosion control measures will be implemented to ensure that soils disturbed by construction are stabilized, to minimize non-storm water discharges into water bodies in the project area, and to meet the requirements of the Lahontan RWQCB and project permits.		ISMND	Project Engineer/Contractor	Post-construction							
Avoidance and Minimization Measure WQ-8: Vegetation removed from the project area will be treated and disposed in a manner that will prevent the spread of invasive species on or off site. If erosion control seed mixes are used, they will be composed of non-invasive species, and all erosion control will be conducted in a manner that would not result in the spread of invasive species.		ISMND	Project Engineer/Contractor/ Contractor-supplied Biologist	Construction							
NOISE											
Avoidance and Minimization Measure NOI-1: Conform to the provisions in Section 14-8.02, "Noise Control," of Caltrans' 2015 Standard Specifications and Special Provisions. The following noise control measure shall be incorporated into the project contract specifications in order to minimize construction noise effects: • Conform to the provisions in Section 14-8.02, "Noise Control," of Caltrans' 2015 Standard Specifications and Special Provisions, which stipulates that construction shall not exceed 86 dBA L _{max} at 50 feet from the job site from 9 p.m. to 6 a.m., and that internal combustion engines shall be equipped with the manufacturer-recommended muffler. Internal combustion engines shall not be operated on the job site without the appropriate muffler.		ISMND	Project Engineer/Contractor	Construction							
Avoidance and Minimization Measure NOI-2: Limit construction hours and employ noise-reducing construction practices. The following noise control measures shall be incorporated into the project contract specifications in order to minimize construction noise effects: • Construction activities shall be limited to the hours of 7:00 a.m. to 8:00 p.m. on weekdays and Saturdays, and shall not occur at any time on Sundays. Construction personnel shall not be permitted on the job site, and material or		ISMND	Project Engineer/Contractor	Pre-construction/ Construction							

Date: (XX/XX/18 EA)

Project Phase: 1

PA/ED

PS&E

Construction

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										YES	NO
<p>equipment deliveries and collections shall not be permitted outside of these hours. Should construction be required to occur outside of the permitted hours, an exception (pursuant to the express written permission of the City Engineer) would be required as described under Section 8.24.050 of the City's Municipal code. Should an exception be granted, the contractor shall continue to conform to the provisions in Section 14-8.02, "Noise Control," of Caltrans' 2015 Standard Specifications and Special Provisions.</p> <ul style="list-style-type: none"> • All construction equipment and vehicles using internal combustion engines shall be equipped with air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. • All mobile or fixed construction equipment used on the project that is regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of project activity. <ul style="list-style-type: none"> ▪ All construction equipment shall be properly maintained. (Poor maintenance of equipment may cause excessive noise levels.) ▪ All construction equipment shall be operated only when necessary and shall be switched off when not in use. ▪ Construction employees shall be trained in the proper operation and use of the equipment. (Careless or improper operation or inappropriate use of equipment can increase noise levels. Poor loading, unloading, excavation, and hauling techniques are examples of how a lack of adequate guidance and training may lead to increased noise levels.) ▪ Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible. ▪ Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors. ▪ Construction site speed limits shall be established and enforced during the construction period. 											

Date: (XX/XX/18 EA)

Project Phase: 1

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							YES	NO		YES	NO
<ul style="list-style-type: none"> ▪ The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. ▪ To minimize potential public objections to unavoidable noise, the contractor shall maintain good communication with the surrounding community regarding the schedule, duration, and progress of the construction. Notification shall be provided advising that there will be loud noise associated with the construction and providing a telephone contact number for affected parties to ask questions and report any unexpected noise levels. The onsite construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. 											
TRANSPORTATION/TRAFFIC											
<p>Avoidance and Minimization Measure TRF-1: Prepare and Implement a Traffic Management Plan (TMP). The TMP shall be provided to emergency service providers, transit providers, school officials, and utility providers with construction plans prior to commencement of construction. The following shall be included in the TMP or carried out in coordination with the TMP.</p> <ul style="list-style-type: none"> • Implement a construction management program that maintains access to and from the project area community through signage, detours, flagmen, etc. • Coordinate with emergency services providers to ensure that alternative response routes to and from the project area community are in place during construction of the proposed project. • Coordinate with transit providers to ensure that alternative transit routes or stops are provided to and from the proposed project site. • Provide access to all fire hydrants along all access routes and provide and maintain fire department vehicle access roads along project site. • Consult with local school officials to identify safe vehicular routes and pedestrian crossing for students traveling to and from schools in the project area community during construction of the proposed project. • Prepare temporary detour plans during the Plans, Specifications, and Estimates phase. 		ISMND	Project Engineer/Contractor	Design/Construction							

Date: (XX/XX/18 EA)

Project Phase: 1

PA/ED

PS&E

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										YES	NO
<ul style="list-style-type: none"> Provide notification to be sent to emergency service providers, local school officials, and any residents that may be substantially affected by any street closures (including partial and/or full closures) or traffic diversions at least two weeks in advance of the planned closure or diversion. 											

Appendix C

Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
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*Making Conservation
a California Way of Life.*

April 2018

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

Related federal statutes and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, please visit the following web page:
http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

To obtain this information in an alternate format such as 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) 324-8379, TTY 711, email Title.VI@dot.ca.gov, or visit the website www.dot.ca.gov.

A handwritten signature in blue ink, appearing to read "Laurie Berman".

LAURIE BERMAN
Director

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Appendix D

Technical Studies

The following technical studies were prepared for this environmental document.

Archaeological Survey Report, State Route 14/138 and Avenue K Interchange Improvements Project. April 2018.

Draft Initial Site Assessment, SR-138 (SR-14) Avenue K Interchange Project. July 2018.

Natural Environment Study (Minimal Impacts), State Route 14 and Avenue K Interchange Project. May 2018.

SR-14 Avenue K Interchange Improvements PA/ED, Preliminary Materials Report. October 2017.

State Route 14 and Avenue K Interchange Project Air Quality Report. May 2018.

State Route 14/138 and Avenue K Interchange Improvements Project Noise Study Report. June 2017.

State Route 14/138 and Avenue K Interchange Improvements Project Community Impact Assessment. March 2018.

Supplemental Historical Resources Compliance Report. April 2018.

Traffic Operations Analysis Report: Avenue K Improvements at SR-14. October 2017.

Visual Impact Assessment, State Route 14 and Avenue K Interchange Project (for Minor Level VIA). May 2018.

Water Quality Assessment Report. April 2018.

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