May 2019

Draft Environmental Impact Report for the

POWER PLANT 1 AND POWER PLANT 2 TRANSMISSION LINE CONVERSION PROJECT

SCH# 2018011039

Los Angeles Department of Water & Power

PREPARED BY

Los Angeles Department of Water & Power
Environmental Affairs

111 North Hope Street, Room 1044
Los Angeles, California 90012

WITH ASSISTANCE FROM

DUDEK

38 North Marengo Avenue
Pasadena, California 91101

DRAFT ENVIRONMENTAL IMPACT REPORT POWER PLANT 1 AND POWER PLANT 2 TRANSMISSION LINE CONVERSION PROJECT

PREPARED BY

Los Angeles Department of Water & Power

Environmental Affairs

111 North Hope Street, Room 1044

Los Angeles, California 90012

WITH ASSISTANCE FROM

DUDEK

38 North Marengo Avenue

Pasadena, California 91101

MAY 2019

PRINTED ON 30% POST-CONSUMER RECYCLED MATERIAL.

TABLE OF CONTENTS

SECTION PAGE

APPENDICES

FIGURES

TABLES

INTENTIONALLY LEFT BLANK

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
3-D	three-dimensional
AB	Assembly Bill
AC	alternating current
ACM	asbestos-containing material
ACOE	Army Corps of Engineers
ANF	Angeles National Forest
API	area of potential impact
AQMP	Air Quality Management Plan
ASR	Archaeologically Sensitive Region
BAU	business-as-usual
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CCAP	Community Climate Action Plan
CCCC	California Climate Change Center
CD	Cascades Development
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CH_4	methane
CHRIS	California Historical Research Information System
CHSC	California Health and Safety Code
CLAOTO	County of Los Angeles Oak Tree Ordinance
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CPUC	California Public Utilities Commission
CRAM	California Rapid Assessment Method
CRA	Coastal Resource Area
CRHR	California Register of Historical Resources

Acronym/Abbreviation	Definition
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DC	direct current
DMV	Department of Motor Vehicles
DOT	U.S. Department of Transportation Federal Transit Administration
DPM	diesel particulate matter
DPW	Department of Public Works
EIA	Energy Information Administration
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act of 2007
EMF	electric and magnetic field
EO	Executive Order
EPA	Environmental Protection Agency
FESA	federal Endangered Species Act
FT	federally-listed threatened
GHG	greenhouse gas
GIS	geographic information system
GWP	global warming potential
HA	Hydrologic Areas
HAP	hazardous air pollutant
HCFC	hydrochlorofluorocarbon
HCM	Historic-Cultural Monument
HFC	hydrofluorocarbon
HPOZ	Historic Preservation Overlay Zone
HRA	health risk assessment
HU	Hydrologic Unit
HVAC	heating, ventilation, and air conditioning
I	Interstate
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IPCC	International Panel on Climate Change
ISA	International Society of Arboriculture
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITP	incidental take permit
KOP	key observation point
LADOT	Los Angeles Department of Transportation
LADWP	Los Angeles Department of Water and Power
LOS	Level of Service
LST	localized significance threshold
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant

Acronym/Abbreviation	Definition
MMT	million metric tons
MPO	metropolitan planning organizations
MRCA	Mountain Recreation and Conservation Authority
MT	metric tons
MW	megawatts
MWD	Metropolitan Water District
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NF_3	nitrogen trifluoride
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O_2	oxygen
O_3	ozone
OPR	Office of Planning and Research
OSHA	Office of Safety and Health Administration
PCE	passenger-car equivalence
PFC	perfluorocarbon
PGA	peak ground acceleration
PM_{10}	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
PP1	Power Plant 1
PP2	Power Plant 2
PRC	Public Resources Code
PSHA	probabilistic seismic hazard assessment
RCNM	Roadway Construction Noise Model
RFS	Renewable Fuel Standard
ROW	right-of-way
RPS	Renewable Portfolio Standards
RTP/SCS	Regional Transportation Plan and Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill

Acronym/Abbreviation	Definition
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCML	South Coast Missing Linkages Project
SCS	Sustainable Communities Strategy
SCWRCA	Santa Clarita Watershed Recreation Conservation Authority
SEA	Significant Ecological Area
SF	square-foot
SF_6	sulfur hexafluoride
SLCP	short-lived climate pollutant
SLF	Sacred Lands File
SLTRP	Strategic Long-Term Resource Plan
SMMC	Santa Monica Mountains Conservancy
SO_2	sulfur dioxide
SR	State Route
SRA	Source receptor area
SSURGO	Soil Survey Geographic Database
SWPPP	stormwater pollution prevention plan
TAC	toxic air contaminant
TCR	tribal cultural resource
TNW	traditional navigable water
USDA	U.S. Department of Agriculture
USFS	United States Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VMT	vehicles miles traveled
VOC	volatile organic compound
ZEV	Zero Emissions Vehicle
ZNE	zero net energy

ES EXECUTIVE SUMMARY

This section provides a summary of the Draft Environmental Impact Report (EIR) for the proposed Power Plant 1 (PP1) and Power Plant 2 (PP2) Transmission Line Conversion Project (proposed project). The California Environmental Quality Act (CEQA) requires EIRs to contain a brief summary of the proposed project and its consequences. The summary must include each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect; areas of controversy known to the lead agency including issues raised by agencies and the public; and, issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects (CEQA Guidelines Section 15123). In accordance with these requirements, this section provides a summary of the proposed project and of project impacts, lists mitigation measures and alternatives, describes areas of known controversy, and discusses issues to be resolved.

ES.1 Introduction

This EIR has been prepared by the Los Angeles Department of Water and Power (LADWP) to evaluate potential environmental effects that would result from development of the proposed project. This EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, Section 21000 et. seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, Section 15000 et. seq.). LADWP is the lead agency under CEQA.

ES.2 Project Location and Setting

The proposed project is a transmission line replacement project proposed by LADWP. The proposed project would be located within an established transmission corridor and within two existing electrical switching stations (Haskell Canyon Switching Station and Sylmar Switching Station). The transmission corridor has been used for electricity transmission since the early 1900s. The corridor is an LADWP right-of-way, consisting of LADWP-owned land and private property that is 250 feet in width and contains three existing transmission lines: a 500 kilovolt (kV) direct current (DC) transmission line, a 115 kV double circuit transmission line that is proposed for replacement as part of this project, and a 4-circuit 230 kV transmission line. This corridor is referred to as the "South of Haskell Corridor" within the LADWP electrical transmission system.

The project alignment extends from Haskell Canyon Switching Station in the north to Sylmar Switching Station in the south. The southern extent of the alignment is located within the Granada Hills–Knollwood Community Plan area within the City of Los Angeles, immediately west of Interstate 5 (I-5), near the interchange of I-5 and I-210. The alignment then angles north before exiting the City of Los Angeles and extending through an undeveloped mountainous area in the San Gabriel Mountains, north of Sylmar and within an unincorporated area of Los Angeles County. The portion of the alignment that crosses the San Gabriel Mountains extends between State Route 14 to the west and the Angeles National Forest boundary to the east. Next, the alignment descends into the Santa Clara River basin in the City of Santa Clarita. The alignment then extends in a north–south orientation across the City of Santa Clarita, terminating at the Haskell Canyon Switching Station, located just south of the Angeles National Forest. The land uses surrounding the transmission corridor and the two switching stations range from industrial areas to open space.

ES.3 Project Summary

The proposed project would involve replacing a 12-mile segment of an existing 115 kilovolt (kV) double circuit transmission line with a new 230 kV double circuit transmission line (hereafter referred to as the "115 kV line" and the "230 kV line," respectively). The new 230 kV line would be strung with two 230-kV 3 phase circuits; however, only one circuit would be energized upon project completion. The second would be energized in the future, based on availability of future renewable energy supplies. The proposed project would involve demolishing the existing 115 kV line and constructing an approximately 12-mile segment of 230 kV lines and associated transmission structures generally adjacent to the existing 115 kV line. The 115 kV line and most of its associated transmission towers would be removed from Haskell Canyon Switching Station in the north to the line's terminus at Olive Switching Station in the south. The new line would be installed and the old line would be removed within an existing alignment that extends from Haskell Canyon Switching Station in the north to Olive Switching Station and Sylmar Switching Station in the south. The proposed new line would also originate at Haskell Canyon Switching Station. The circuit that would not be energized would terminate at Olive Switching Station, and the energized circuit would terminate at Sylmar Switching Station. The project alignment is approximately 12 miles long and consists of LADWP-owned land and private properties within an LADWP right-of-way. The purpose of this project is to increase the transmission capacity between Haskell Canyon Switching Station and Sylmar Switching Station so that additional renewable energy supplies can be transmitted from the Tehachapi Mountains and Mojave Desert to the Los Angeles basin.

ES.4 Project Objectives

The underlying purpose of the project is to alleviate constraints for transferring renewable energy supplies from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin in order to help LADWP achieve state and local requirements for GHG reductions and an increased renewable energy portfolio. As set forth in the CEQA Guidelines, the project's specific objectives are provided below.

- Allow for increased transmission of renewable energy from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin.
- Assist LADWP in reducing greenhouse gas emissions and meeting Renewable Portfolio Standards goals established in the City's sustainability plans and initiatives.
- Improve the safety and operational flexibility of energy transmission in the South of Haskell Corridor to address system reliability concerns associated within increased use of solar and wind energy sources.
- Enhance the operational flexibility of the Haskell Canyon Switching Station and Sylmar Switching Station.
- Minimize the environmental disturbance of transmission upgrades by constructing improvements within an existing transmission corridor and within existing switching stations; avoiding sensitive resources to the extent feasible; and minimizing the number of new access routes.

ES.5 Areas of Controversy/Issues to be Resolved

LADWP issued a Notice of Preparation (NOP) to prepare an EIR for the proposed project. Issuance of the NOP began the scoping process for proposed project. The purpose of scoping is to seek input from public agencies and the general public regarding the environmental issues and concerns that may potentially result from the proposed project. During the scoping period, a public scoping meeting was held at the City of Santa Clarita Activities Center, on February 7, 2018. One person, who was a planner from the City of Santa Clarita Community Development department, attended the meeting. Comment letters were also received in response to the Notice of Preparation and Initial Study for this project. Copies of the comment letters, a summary of the verbal comments received during the scoping meeting, and the Initial Study and NOP are provided in Appendix A. The primary areas of controversy identified by the public and agencies included the following potential issues (the EIR section that addresses the issue raised is provided in parentheses):

- Health effects and corona noise associated with transmission lines (Section 3.7 addresses noise and Section 3.11 discusses electric and magnetic fields)
- Construction-related traffic and associated effects on commuters, pedestrians, cyclists, emergency responders, and police patrol operations (Section 3.8 addresses transportation and traffic)
- Impacts to the Sanitation Districts of Los Angeles County's sewer lines and recycled water lines (Chapter 2.0 addresses coordination with the Sanitation Districts of Los Angeles County for the protection of the district's facilities during project construction and operation)
- Loss of habitat and edge effects (Section 3.3 addresses effects to biological resources)
- Impacts to special-status species, including burrowing owl, least Bell's vireo, passerine birds, and sensitive plant species (Section 3.3 addresses effects to biological resources)
- Impacts to streams and associated plant and animal species, watershed function, and biological diversity (Section 3.3 addresses effects to biological resources)
- Potential for the project to facilitate growth inducement (Chapter 6.0 addresses growth inducement)
- Aesthetic impacts of new transmission towers, including visual impacts to residents (Section 3.1 addresses potential visual impacts)
- Outreach efforts to the neighborhoods potentially impacted by the new transmission towers (Appendix A includes a scoping report that describes the outreach conducted for the NOP process)

ES.6 Summary of Environmental Impacts

The project's potential environmental impacts are summarized in Table ES-1. This table contains a summary of the impacts described in this EIR, as well as the impacts that were addressed in the Initial Study and determined to require no further detailed analysis in the EIR. Table ES-1 also includes a list of the proposed mitigation measures that are recommended in response to the project's potentially significant impacts, as well as a determination of the level of significance of the impacts after implementation of the recommended mitigation measures.

ES.7 Alternatives to the Proposed Project

The CEQA Guidelines Section 15126.6 requires consideration and discussion of alternatives to the proposed project in an EIR. Several alternatives, including alternate project locations, were considered but rejected from consideration in this EIR. A review of those alternatives and the reasons for rejecting them is provided in Chapter 5.0 of this document. Two alternatives, including the No Project Alternative, are reviewed in detail in Chapter 5.0 of this document. This section summarizes the two alternatives to the project that were analyzed in detail as required under CEQA.

Alternative 1

Alternative 1 assumes the proposed project would not proceed. The existing 115 kV transmission line would continue to operate within the South of Haskell Corridor. No improvements would occur within this corridor or at the switching stations. The proposed project is being undertaken in part to address thermal violations on transmission lines south of the Haskell Canyon Switching Station. This indicates that line currents would increase to the extent that safety and reliability of the line may become compromised. When the line current increases, the conductor heats, the line elongates, and spans of the line can sag. If lines sag beyond required clearances, code violations and safety hazards may occur. As such, Alternative 1 would include activities that would help address the code violations and safety hazards, such as grading underneath transmission lines, raising the height of existing transmission towers, and/or limiting the amount of energy that is transferred through the South of Haskell Corridor. While the new 230 kV would not be built, Alternative 1 would nevertheless result in construction activities that are similar to those of the proposed project. The activities may occur more sporadically, as various safety hazards are addressed along the alignment over time. Alternative 1 would likely result in similar or greater construction impacts, when compared to those of the proposed project. Operational activities would be similar to existing conditions and to those required for the proposed project. Maintenance and repairs would continue to occur as necessary, similar to existing conditions. However, as the line continues to age, maintenance activities could increase in intensity and frequency. Some operational impacts associated with the proposed project would be avoided, although operational effects would generally be the same as those of the proposed project, since the 115 kV line would require periodic inspection, maintenance, and repairs, similar to existing conditions and to the operational activities that would be required for the proposed 230 kV line.

Alternative 2

Alternative 2 would be generally identical to the proposed project with the exception of the construction scenario. Under this alternative, helicopters would not be used for structure removals or installations. The proposed project would cause a significant and unavoidable impact in the category of construction air quality. Without the use of heavy-duty helicopters, this impact can be reduced to a less than significant level with mitigation. As such, Alternative 2 is proposed for the purpose of eliminating the project's significant and unavoidable impact. However, construction impacts in most other categories would increase, due to increased grading acreages, increased construction duration, and increased vehicle trips associated with elimination of the heavy-duty helicopters. Operational activities for Alternative 2 and associated impacts would be generally the same as those of the proposed project.

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Aesthetics			
Would the project have a substantial adverse effect on a scenic vista?	Less than significant	No mitigation measures are required.	Not applicable
Would the project substantially degrade the existing visual character or quality of the site and its surroundings? *	Less than significant	No mitigation measures are required.	Not applicable
Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less than significant	No mitigation measures are required.	Not applicable
Would the project have a cumulative effect on aesthetics?	Less than significant	No mitigation measures are required.	Not applicable
Agriculture and Forestry Resources *			
Would the project 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?	Significant	MM-AG-1: Construction activities occurring within farmland that is designated by the Farmland Mapping and Monitoring Program as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland, shall adhere to the following specifications: prior to grading or site disturbance, topsoil within the impact areas shall be salvaged and stockpiled (salvage depths shall be determined by a qualified professional). The stockpiled soils shall be covered by an anchored tarp or watered down until the site is ready for the soil to be replaced. Once construction activities are completed, the salvaged topsoil shall be replaced.	Less than significant
Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	No impact	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project 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))?	No impact	No mitigation measures are required.	Not applicable
Would the project result in the loss of forest land or conversion of forest land to non-forest use?	Less than significant	No mitigation measures are required.	Not applicable
Would the project 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?	No impact	No mitigation measures are required.	Not applicable
Air Quality			
Would the project conflict with or obstruct implementation of the applicable air quality plan?	Significant	MM-AQ-1: Use of Tier 3 Equipment. The Los Angeles Department of Water and Power (LADWP) and/or its construction contractor shall comply with the following measures during construction: • Prior to the start of construction activities, LADWP shall ensure that all 75 horsepower or greater diesel-powered equipment are powered with CARB certified Tier 3 engines, except where LADWP establishes that Tier 3 equipment is not available. When feasible, Tier 4 equipment shall be considered. • In cases where LADWP is unable to secure a piece of equipment that meets the Tier 3 requirement, LADWP may upgrade another piece of equipment to compensate (i.e., a piece of Tier 3 equipment would be replaced by a Tier 4 piece). • Engine Tier requirements in accordance with this measure shall be incorporated on all construction plans.	Significant

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Significant	MM-AQ-1	Significant
Would the project result in a cumulatively considerable new increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative threshold emissions which exceed quantitative thresholds for ozone precursors)?	Significant	MM-AQ-1	Significant
Would the project expose sensitive receptors to substantial pollutant concentrations?	Significant	MM-AQ-1	Significant
Would the project create objectionable odors affecting a substantial number of people?	Less than significant	No mitigation measures are required.	Not applicable
Would the project have a cumulative effect on air quality?	Significant	MM-AQ-1	Significant
Biological Resources			
Would the project 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?	Significant	MM-BIO-1: Pre-Construction Surveys and Avoidance and Minimization Measures for Special-Status Plants Pre-Construction Special-Status Plant Surveys. To mitigate for potential impacts to habitat occupied by special-status plant species (if any), surveys shall be conducted within impact areas where special-status plant species have a moderate potential to occur. (Such surveys are only necessary in impact areas that were not surveyed in 2017 and 2018. See Table 12 for a list of the specific locations where focused surveys for special-status plant species are required.) These focused surveys shall occur during the season prior to construction and	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		shall be conducted during a period when the target species would be observable and identifiable (e.g., blooming period for annuals). Focused surveys for special-status plant species shall be conducted by a qualified biologist according to: the *CNPS Botanical Survey Guidelines* (CNPS 2001); *Protocols for Surveying and Evaluating Impacts to Special Status Native Populations and Natural Communities* (CDFG 2009); and *U.S. Fish and Wildlife Service General Rare Plant Survey Guidelines* (Cypher 2002). Avoidance and Minimization Measures. If special-status plant species are detected during focused survey efforts described above, the full extent of the occurrence within the area shall be recorded. The location of each special-status plant occurrence shall be mapped and number of individuals for each occurrence documented. If impacts to special-status plants cannot be avoided, the following measures shall be implemented: 1. Special-status plants in the vicinity of the disturbance will be temporarily fenced or prominently flagged and a buffer established around the populations to prevent inadvertent encroachment by vehicles and equipment during the activity; 2. Seeds will be collected and stored in appropriate storage conditions (e.g., cool and dry), and dispersed/transplanted following the construction activity and reapplication of salvaged topsoil; and 3. The top 6 inches of topsoil will be salvaged, stockpiled, and replaced as soon as practicable after project completion. Soil stockpiles shall be stabilized,	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		consistent with the project's Stormwater Pollution Prevention Plan. The salvaged topsoil shall be redistributed depth and contoured to blend with surrounding grades. In the event that a federally or state-listed plant is observed during focused survey, the Los Angeles Department of Water and Power (LADWP) shall consult with the applicable agency (i.e., CDFW and/or USFWS) and obtain written concurrence for measures required for federally or state-listed plant species, if observed. MM-BIO-2: Biological Monitoring, Avoidance, and Fencing Biological Monitoring. To prevent disturbance to areas outside the limits of disturbance, all clearing and grubbing activities within habitats potentially suitable to support special-status biological resources (i.e., waterways, disturbed land, coastal scrub, chaparral, non-native grassland, riparian, and woodland habitats) shall be monitored by a qualified biologist. Biological monitoring shall include the following: 1. Attend the preconstruction meeting with the contractor and other key construction personnel prior to clearing, grubbing, or grading to reduce conflict between the timing and location of construction activities with other mitigation requirements (e.g., seasonal surveys for nesting birds). 2. Conduct an environmental training with the construction personnel outlining the biological avoidance and mitigation measures.	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		3. Conduct meetings with the contractor and other key construction personnel describing the importance of restricting work to designated areas prior to clearing, grubbing, or grading. Perform regular inspection of fencing and erosion control measures (daily during rain events, if safe). 4. Discuss procedures/training for minimizing harm to or harassment of wildlife encountered during construction with the contractor and other key construction personnel prior to clearing, grubbing, or grading. 5. Conduct pre-construction sweeps in areas with suitable habitat to support special-status biological resources (i.e., waterways, disturbed land, coastal scrub, chaparral, non-native grassland, riparian, and woodland habitats). Supervise and conduct regular spot checks during vegetation clearing, grubbing, and grading, as well as conduct monitoring in areas determined to have potential to support special-status species (as determined by a qualified biologist) to ensure against direct and indirect impacts to biological resources that are intended to be protected and preserved. 6. Flush species (i.e., avian or other mobile species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities during pre-construction sweeps. 7. If special-status species (e.g., western spadefoot, California glossy snake, Blainville's horned lizard, San Diegan tiger whiptail, and/or silvery legless lizard,) are detected in the work area, a biologist possessing an appropriate California scientific	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		collecting permit to handle special-status species will capture and relocate individuals to nearby undisturbed areas with suitable habitat outside of the construction area, but as close to their origin as possible. All wildlife moved during project activities shall be documented by the biologist on site. 8. Verify that the construction contractor Qualified Storm Water Practitioner (QSP) is implementing the stormwater pollution prevention plan (SWPPP) best management practices (BMPs) and maintaining physical BMPs, as well as the stormwater management practices for protection of biological resources outlined in MM-BIO-3. 9. Periodically monitor the construction site to see that dust is minimized. If the biological monitor determines that dust is adversely affecting special-status species, the monitor shall require the construction personnel to implement best available control measures to reduce dust. Examples of such best available control measures include periodic watering of work areas, application of environmentally safe soil stabilization materials, and/or roll compaction. 10. Periodically monitor the construction site to verify that artificial security light fixtures are directed away from open space and are shielded. 11. At the end of each workday, any open holes (including large/steep excavations) shall be inspected by the on-site biologist and subsequently fully covered with steel plates, plywood, or other effective coverings to prevent entrapment of wildlife species. If fully covering the excavations is impractical, ramps will be used to	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		provide a means of escape for wildlife that enter the excavations, or open holes will be securely fenced with exclusion fencing. If common wildlife species are found in a hole, the biological monitor shall immediately be informed and the animal(s) shall be removed. If the animal(s) is/are a sensitive species that require(s) special handling authorization, a qualified biologist (agency-permitted or approved to handle a specific species) shall remove the animal before resuming work in that immediate area. The applicant shall specify the requirement to cover all open holes, create ramps, or install exclusion fencing around open holes in its agreements with all construction contractors. Temporary Construction Fencing. To prevent inadvertent disturbance to sensitive vegetation and species adjacent to the proposed project area, temporary fencing and/or staking shall be installed prior to construction activities around the perimeter of the work areas, as feasible with topography and large vegetation. The fencing shall be placed to protect from inadvertent disturbance outside of the limits of grading as well as to prevent unauthorized access into the work areas. Construction activities would be conducted in a manner to avoid jurisdictional waters to the maximum extent practicable. MM-BIO-3: Stormwater Management for Biological Resources Protection. Prior to proposed project construction, the Los Angeles Department of Water and Power (LADWP) or its construction contractor will develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with State Water	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		Resources Control Board permitting requirements. In addition, the following measures and/or restrictions will be incorporated into the project for the protection of biological resources from stormwater-related effects and noted on construction plans to avoid impacts to special-status species, sensitive vegetation communities, and/or jurisdictional waters during construction. The biologist shall verify the implementation of the following design requirements: 1. No planting or seeding of invasive plant species (per the most recent version of the California Invasive Plant Council California Invasive Plant Inventory for the project region) shall be permitted. Any equipment or vehicles driven and/or operated within jurisdictional waters of the United States/state shall be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products that could be deleterious to aquatic life if introduced to the watercourse. No equipment maintenance or storage shall be performed within 200 feet of jurisdictional waters of the United States/state where petroleum products or other pollutants from the equipment may enter these areas. 2. Littering shall be prohibited and trash shall be removed from construction areas and contained in established covered receptacles. All food-related trash and garbage shall be removed from the construction sites. MM-BIO-4: Fire Risk Management Plan. A Fire Risk Management Plan shall be developed and implemented in accordance with MM-HAZ-1. To protect special-status	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		resources (including special-status vegetation communities) from fire risk, annual maintenance of fuel modification zones shall also be conducted and revegetation shall be conducted with acceptable locally indigenous plants. All personnel shall be advised of their responsibility under the applicable fire laws and regulations, including precautions and implementation of practical measures to report and suppress fires during construction. MM-BIO-5: Nesting Bird Survey. This measure is provided to protect nesting special-status species and more common species protected under the Migratory Bird Treaty Act, which prohibits the "take" of any migratory bird or any part, nest, or eggs of any such bird. The Migratory Bird Treaty Act applies to over 800 species of birds, including rare and common species. Burrowing owl is addressed separately in a species-specific biological resource protection measure (MM-BIO-6). If construction activity occurs during the nesting season (typically February 1 through August 31), a biological survey for nesting bird species shall be conducted within a 300-foot buffer (or a 500-foot buffer for raptors) of the proposed work area. This survey shall occur within 72 hours prior to construction at the particular work area. Pre-construction nesting surveys are necessary to assure avoidance of impacts to nesting raptors (e.g., Cooper's hawk (*Accipiter cooperii*) and red-tailed hawk (*Buteo jamaicensis*)) and/or birds protected by the federal Migratory Bird Treaty Act. If any active nests are detected, the area shall be flagged and mapped with a	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		minimum of a 25-foot buffer and up to a maximum of 500 feet for raptors, as determined by the project biologist, and shall be avoided until the nesting cycle is complete. If construction-related activities that are excessively noisy (e.g., clearing, grading, grubbing, or prolonged helicopter use) occur during the period of February 1 through August 31, and nesting CAGN (or other listed birds including LBVI) and/or raptors are detected by the biologist, the biologist shall have the authority to establish protections for the nesting bird(s) and/or raptor(s) based on the biology of the species. Such protections may include: noise from construction activity is kept below 60 A-weighted decibels equivalent continuous sound level (dBA L_{eq}) or preconstruction ambient noise levels, whichever is greater; no-disturbance buffers are established around the nest; temporary sound walls are set up between the nest and the construction work area; observation of the birds for signs of disturbance and ceasing activity in the event that disturbance is observed. MM-BIO-6: Burrowing Owl Surveys and Avoidance/Relocation. No less than 14 days prior to ground-disturbing activities (vegetation clearance, grading), a qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct pre-construction take avoidance surveys on and within 200 meters (656 feet) of the construction zone within areas of suitable habitat for burrowing owl (i.e., disturbed land, grassland, upland mustard, chamise/annual grass-forb, and unvegetated channels) to identify occupied breeding or wintering burrowing owl burrows. The take avoidance	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 Staff Report; CDFG 2012). Burrows with fresh burrowing owl sign or presence of burrowing owls will be documented. Areas deemed to be unsuitable burrowing owl habitat based on vegetation communities and results of the burrowing owl habitat assessment will be excluded from these surveys. If burrowing owls are detected on site, no ground-disturbing activities shall be permitted within 200 meters (656 feet) of an occupied burrow during the breeding season (February 1 to August 31), unless otherwise allowed by CDFW. During the nonbreeding season (September 1 to January 31), ground-disturbing work can proceed near active burrows as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW. If avoidance of active burrows is infeasible during the nonbreeding season, then, before breeding behavior is exhibited and after the burrow is confirmed empty by site surveillance and/or scoping, a qualified biologist shall implement a passive relocation program in accordance with Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation (CDFG 2012). Passive relocation consists of excluding burrowing owls from occupied burrows and providing suitable artificial burrows nearby for the excluded burrowing owls. If required, a burrowing owl monitoring and mitigation plan	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		shall be prepared that outlines how passive relocation would occur and where the replacement burrows would be constructed. It would also outline the monitoring and maintenance requirements for the artificial burrows. MM-BIO-7: Coastal California Gnatcatcher Surveys. To mitigate for potential impacts to occupied habitat by coastal California gnatcatcher, focused surveys shall be conducted in suitable habitat prior to construction within the temporary and permanent impact footprints that were not surveyed in 2018 (see Table 13 and *2018 Focused California Gnatcatcher Survey Report for the Los Angeles Department of Water and Power (LADWP) Power Plant 1 and Power Plant 2 Transmission Line Conversion Project, Los Angeles County, California* (Dudek 2018)). The focused surveys shall be performed according to the currently accepted USFWS protocol. The proposed project occurs outside of a Natural Communities Conservation Plan (NCCP) enrolled area, therefore, the focused surveys shall include six survey passes at a minimum of 7-day intervals between visits during the breeding season (March 15 through June 30). (If performed outside the breeding season, then nine surveys performed at minimum 14-day intervals may be performed according to protocol.) In accordance with the protocol, no more than 80 acres of suitable habitat shall be surveyed by a single permitted biologist during each site visit conducted. If focused surveys are negative, no additional mitigation is required. If focused surveys are positive, informal consultation with USFWS shall occur. If required by USFWS, an incidental take permit (ITP) shall be obtained.	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		Occupied habitat shall be mitigated at a minimum 1:1 ratio for temporary impacts, 2:1 ratio for permanent impacts, or as specified by the USFWS (e.g., within an ITP or as a result of informal consultation). Avoidance and minimization measures shall be implemented in accordance with USFWS specifications or as negotiated with the USFWS through informal consultation and shall include, at a minimum: 1. Environmental awareness training for all construction personnel to educate personnel about coastal California gnatcatcher, protective status avoidance measures to be implemented by all personnel, including the avoidance of nesting bird season to the greatest extent feasible and minimization of vegetation impacts within suitable coastal scrub habitat; 2. Removal of suitable coastal scrub vegetation shall only occur outside of the coastal California gnatcatcher breeding season (so, only between September 1 and February 14); 3. Establishment of environmentally sensitive areas around coastal California gnatcatcher nest locations (500 foot avoidance buffer or as otherwise allowed by USFWS) by a qualified biologist prior to the start of any ground- or vegetation-disturbing activities, which shall be maintained and avoided during construction activities and until the nest is determined by a qualified biologist to no longer be active; and 4. Presence of a qualified biological monitor during initial grading activities, adjacent to environmentally sensitive areas, near active nest locations, and as needed to	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		document compliance with USFWS specifications, the biological monitor will have the authority to stop work as needed to avoid direct impacts to coastal California gnatcatcher. MM-BIO-8: Roosting Bats. No less than 30 days prior to commencement of construction activities for each construction area with suitable habitat (i.e., rocky outcrops, cliffs with crevices, man-made structures, and trees within grassland, chaparral, coastal scrub, and woodland habitats) to support special-status roosting bats (i.e., pallid bat, spotted bat, and western mastiff bat), a pre-construction survey shall be conducted by a qualified biologist to determine whether active roosts of special-status bats (i.e., maternity roosts, non-maternity roosts, and winter hibernacula) are present in the construction disturbance zone or within 300 feet of the project disturbance zone boundary. If roosts are detected during pre-construction surveys, the following avoidance measures shall be implemented unless relocation and/or take is authorized under applicable law. 1. If an active maternity roost is identified, the maternity roost shall not be directly disturbed, and some construction activities, such as mass-grading or other activities involving heavy equipment, within 300 feet of the maternity roost may be postponed or halted until the maternity roost is vacated and juveniles have fledged, as determined by the qualified biologist. The rearing season for native bat species in California is approximately April 1 through August 31.	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		2. If non-breeding bat roosts (hibernacula or non-maternity roosts) are found within the disturbance zone, the individuals shall be safely evicted, under the direction of the qualified biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the project biologist (e.g., installation of one-way doors). If flushing species from tree or rock roosts is required, this shall be done when temperatures are sufficiently warm for bats to exit the roost, because bats do not typically leave their roost daily during winter months. In situations requiring one-way doors, a minimum of 1 week shall pass after doors are installed and temperatures should be sufficiently warm (for winter hibernacula) for bats to exit the roost. This action should allow all bats to leave during the course of one 1 week. If a roost needs to be removed and the qualified biologist determines that the use of one-way doors is not necessary, the roost shall first be disturbed following the direction of the qualified biologist at dusk to allow bats to escape during the darker hours. Once the bats escape, the roost site shall be removed or the construction disturbance shall occur the next day (i.e., there shall be no less or more than 1 night between initial disturbance and the roost removal). MM-BIO-9: Habitat Preservation and/or Creation. To mitigate for impacts to vegetation communities, habitats for special-status wildlife species and occurrences of special-status plant species, suitable off-site mitigation land shall be acquired. LADWP shall purchase habitat credit or provide for the conservation of habitat generally consistent with the assemblage of vegetation communities impacted by the	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		project. To avoid and minimize temporary impacts to jurisdictional waters, temporary impact areas (including staging laydown areas, stringing pads, temporary access routes, and temporary work pads) shall be sited to avoid jurisdictional waters to the maximum extent practicable. The proposed project shall mitigate for permanent impacts to jurisdictional waters, including riparian habitat, at a minimum of 1:1 mitigation ratio, or as otherwise determined through the federal and state agency permitting process. Mitigation for permanent impacts to jurisdictional waters would be through the reestablishment, rehabilitation, enhancement, or preservation of jurisdictional waters through an agency approved mitigation bank or in lieu fee program or through permittee-responsible mitigation as defined by the ACOE.	
Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Significant	MM-BIO-2 MM-BIO-3 MM-BIO-4 MM-BIO-9	Less than significant
Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Significant	MM-BIO-2 MM-BIO-3 MM-BIO-4 MM-BIO-9	Less than significant
Would the project 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?	Significant	MM-BIO-2	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Significant	MM-BIO-1 MM-BIO-2 MM-BIO-3 MM-BIO-4 MM-BIO-5 MM-BIO-6 MM-BIO-7 MM-BIO-8 MM-BIO-9 MM-BIO-10: Protected Tree Inventory. To mitigate for potential impacts to protected trees, a protected tree inventory shall be conducted within the temporary and permanent impact footprints, including a 200-foot buffer to account for indirect impacts, prior to construction. The inventory shall be performed by International Society of Arboriculture (ISA) certified arborists qualified to perform a protected tree assessment within Los Angeles County, City of Los Angeles, and City of Santa Clarita. The arborist(s) shall conduct a physical inventory, collecting tree location and arboricultural attribute information for each tree within the potential impact areas the meets the minimum size requirements, as defined within the County of Los Angeles Protected Tree Ordinance, City of Los Angeles Protected Trees, and City of Santa Clarita Oak Tree Ordinance. A Protected Tree Report, including impacts and mitigation (as applicable to each local ordinance) shall be prepared. Permit applications, if applicable, shall be submitted prior to construction to the applicable jurisdiction (Los Angeles County, City of Los Angeles, and/or City of Santa Clarita). Permits must be approved prior to construction.	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? *	No impact	No mitigation measures are required.	Not applicable
Would the project have a cumulative effect on biological resources?	Significant	MM-BIO-1 MM-BIO-2 MM-BIO-3 MM-BIO-4 MM-BIO-5 MM-BIO-6 MM-BIO-7 MM-BIO-8 MM-BIO-9 MM-BIO-10	Less than significant
Cultural Resources			
Would the project cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?	Less than significant	No mitigation measures are required.	Not applicable
Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	Significant	MM-CUL-1: Avoidance and Minimization. Presence/absence testing shall be conducted within planned work areas that overlap with sensitive archaeological sites as delineated in Confidential Appendix D of the Cultural Resources Assessment. Prior to construction, a qualified archaeologist (meeting the Secretary of the Interior's Professional Qualification Standards) in coordination with the Los Angeles Department of Water and Power (LADWP) or its construction contractor shall review the final construction plans to determine which work areas require presence/absence testing. Based on conceptual project	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		design, presence/absence testing shall be conducted within the areas of planned construction near archaeological sites P-19-003131, P-19-004720, and LADWP-001. The planned areas of construction that are located within or near each of these sites are listed below. • P-19-003131: Lay Down Area 1-4, Stringing Pad 1-6, Structure Removals 10A1, 10A2, and 10A3, and New Pole Work Areas 1-4, 1-5, 1-6, 1-7, and 1-8 • P-19-004720: Lay Down Area 3-2, Stringing Pad 3-3, New Pole Work Area 3-3, and Structure Removals 12A1 and 12A2 • LADWP-001: New Pole Work Area 4-2 and Structure Removal 12A7 In the event that presence/absence testing reveals the presence of cultural material within planned work areas, a qualified archaeologist shall determine the significance of the find and determine whether or not additional study is warranted. If the find is determined to be significant, the qualified archaeologist shall coordinate with LADWP or its construction contractor to reduce and/or avoid effects to such materials. Impacts could be reduced or avoided through one or more of the following means: redesigning the planned construction work area to avoid the resource, establishing construction exclusion fencing around the archaeologically sensitive area to ensure that construction equipment and workers do not inadvertently enter the sensitive area, preparing an archeological treatment plan for the resource, and/or data recovery. MM-CUL-2: Construction Monitoring. Construction monitoring shall be conducted at locations where planned	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		construction work areas overlap or are situated adjacent to a sensitive archaeological site, as delineated in Confidential Appendix D of the Cultural Resources Assessment. Prior to construction, a qualified archaeologist, in coordination with LADWP or its construction contractor, shall review the final construction plans to determine which work areas require archaeological monitoring. The archaeological monitoring shall be conducted during all ground disturbance at the identified locations. Based on conceptual project design, the work area locations where construction monitoring is expected to be warranted are listed below. • New Pole Work Areas 1-4, 1-5, 1-6, 1-7, 1-8, 3-3, 4-2, and 8-3; Structure Removals 10A1, 10A2, 10A3, 12A1, 12A2, 12A7, 16A7, and 19A4; Lay Down Areas 1-4 and 3-2; and, Stringing Pads 1-6 and 3-3 In the event that cultural materials are found during construction monitoring, the monitor shall adhere to the protocol for unanticipated discoveries set forth in MM-CUL-3. In the event that the find could consist of or include human remains, the archaeological monitor and construction personnel shall follow the protocol for unanticipated finds of human remains set forth in MM-CUL-4. MM-CUL-3: Unanticipated Discoveries. If archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); California Public Resources Code, Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan and data recovery, may be warranted. MM-CUL-4: Human Remains. In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete their inspection within 48 hours of being granted access to the site. The most likely descendant would then determine, in consultation with the property owner, the disposition of the human remains.	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? *	Significant	MM-CUL-5: Prior to commencement of any grading activity on-site, LADWP shall retain a qualified paleontologist. The qualified paleontologist shall attend the preconstruction meeting and prepare a mitigation plan that outlines monitoring protocols to be followed during all rough grading and other significant ground-disturbing activities in geological units with high paleontological sensitivity. These units include previously undisturbed older surficial gravels and alluvium, Saugus Formation, Pico Formation, Towsley Formation, Castaic Formation, and Mint Canyon Formation. Paleontological monitoring shall not be required for excavations into rock units with no to low paleontological sensitivity, including Cretaceous or older metamorphic rocks, Holocene surficial sediments, previously disturbed deposits, or artificial fill. Paleontological monitoring shall be conducted by a qualified paleontological monitor. A qualified paleontological monitor is defined as having (equivalent experience acceptable as appropriate): "A BS or BA degree in geology or paleontology and one year experience monitoring in the state or geologic province of the specific project. An associate degree and/or demonstrated experience showing ability to recognize fossils in a biostratigraphic context and recover vertebrate fossils in the field may be substituted for a degree. An undergraduate degree in geology or paleontology is preferable, but is less important than documented experience performing paleontological monitoring…" (SVP 2010). In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		discovery will be roped off with a 25-foot radius buffer. Once documentation and collection of the find is completed, the monitor will remove the rope and allow grading to recommence in the area of the find. If sedimentological indicators conducive to the preservation of microvertebrates (as defined by SVP [2010]) are encountered, test sediment samples shall be collected to determine the presence of microvertebrate fossils. Following the paleontological monitoring program, a final report detailing the monitoring activities and any fossil specimens recovered, along with associated geological and paleontological data, shall be prepared.	
Would the project disturb any human remains, including those interred outside of formal cemeteries? *	Less than significant	No mitigation measures are required.	Not applicable
Would the project have a cumulative effect on cultural resources?	Significant	MM-CUL-1 MM-CUL-2 MM-CUL-3 MM-CUL-4 MM-CUL-5	Less than significant
Geology and Soils			
Would the project 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.	Less than significant	No mitigation measures are required.	Not applicable
ii. Strong seismic ground shaking?	Less than significant	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
iii. Seismic-related ground failure including liquefaction?	Less than significant	No mitigation measures are required.	Not applicable
iv. Landslides?	Significant	MM-GEO-1: Slope Stability Analysis. Prior to final design and construction, the Los Angeles Department of Water and Power shall complete a geotechnical investigation along the project alignment, including an analysis of potential slope instability associated with cut-and-fill grading. The analysis shall be completed by a California Certified Engineering Geologist and licensed Geotechnical Engineer. In the event that the analysis indicates that potential slope instability could occur as a result of grading, remedial measures (e.g., buttress slopes) shall be included in the grading plans in order to prevent slope failure. All cut and fill slopes shall be designed and constructed in accordance with California Building Code (Sections 1804 and 1804A) specifications.	Less than significant
Would the project result in substantial soil erosion or the loss of topsoil? *	Less than significant	No mitigation measures are required.	Not applicable
Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Significant	MM-GEO-1	Less than significant
Would the project 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?	Less than significant	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? *	No impact	No mitigation measures are required.	Not applicable
Would the project have a cumulative effect relative to geology and soils?	Significant	MM-GEO-1	Less than significant
Greenhouse Gas Emissions			
Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant	No mitigation measures are required.	Not applicable
Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than significant	No mitigation measures are required.	Not applicable
Would the project have a cumulative impact on greenhouse gas emissions?	Less than significant	No mitigation measures are required.	Not applicable
Hazards and Hazardous Materials *			
Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than significant	No mitigation measures are required.	Not applicable
Would the project 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?	Less than significant	No mitigation measures are required.	Not applicable
Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less than significant	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project 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?	Less than significant	No mitigation measures are required.	Not applicable
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	Less than significant	No mitigation measures are required.	Not applicable
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?	No impact	No mitigation measures are required.	Not applicable
Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than significant	No mitigation measures are required.	Not applicable
Would the project 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?	Significant	MM-HAZ-1: Prior to construction, the Los Angeles Department of Water and Power shall develop a Fire Risk Management Plan that addresses training of construction crews and provides details of fire suppression and reporting procedures and equipment to be maintained on site during construction. The Los Angeles Department of Water and Power or its construction contractor shall monitor construction activities to ensure implementation and effectiveness of the Fire Risk Management Plan. The final plan shall be implemented during all construction activities. At minimum, the plan will include the following: • Requirements for workers to park away from dry vegetation.	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		• Requirements for flammable materials to be properly handled and stored. • Procedures for minimizing potential ignition, including, but not limited to, helicopter operations, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, use of spark arrestors, and hot work restrictions. • Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days. • Detailed information for reporting started or observed fires to appropriate fire agencies. • Worker training for fire prevention, initial attack firefighting, and fire reporting. • Emergency communication, response, and reporting procedures. • Coordination with local fire agencies to facilitate emergency access to the project alignment, if necessary. • Emergency contact information. • Requirements for fire-suppression equipment and materials to be kept in vehicles and adjacent to all work areas and staging areas and to be clearly marked. • Requirements for all vehicles to carry fire suppression equipment.	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
*Hydrology and Water Quality **			
Would the project violate any water quality standards or waste discharge requirements?	Less than significant	No mitigation measures are required.	Not applicable
Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Less than significant	No mitigation measures are required.	Not applicable
Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	Less than significant	No mitigation measures are required.	Not applicable
Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	Less than significant	No mitigation measures are required.	Not applicable
Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	Less than significant	No mitigation measures are required.	Not applicable
Would the project otherwise substantially degrade water quality?	No impact	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project 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 delineation map?	No impact	No mitigation measures are required.	Not applicable
Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?	Less than significant	No mitigation measures are required.	Not applicable
Would the project 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?	Less than significant	No mitigation measures are required.	Not applicable
Would the project cause or expose people or structures to inundation by seiche, tsunami, or mudflow?	Less than significant	No mitigation measures are required.	Not applicable
*Land Use and Planning **			
Would the project physically divide an established community?	No impact	No mitigation measures are required.	Not applicable
Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	No impact	No mitigation measures are required.	Not applicable
Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?	No impact	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
*Mineral Resources **			
Would the project 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	No mitigation measures are required.	Not applicable
Would the project 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?	No impact	No mitigation measures are required.	Not applicable
Noise			
Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Significant	MM-NOI-1: Construction Noise Reduction. The Los Angeles Department of Water and Power and/or its construction contractor shall comply with the following measures during construction: 1. For construction activities within the City of Los Angeles, construction activities shall not occur between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, 6:00 p.m. and 8:00 a.m. on Saturdays, or on Sundays or national holidays. For construction activities within the City of Santa Clarita, construction activities shall not occur between the hours of 7:00 p.m. and 7:00 a.m., Monday through Friday, 6:00 p.m. and 8:00 a.m. on Saturdays, or on Sundays or the following public holidays: New Year's Day, Independence Day, Thanksgiving, Christmas Day, Memorial Day, and Labor Day. In the event that construction is required to extend beyond these times, extended hours permits shall be required.	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		2. Equipment (e.g., portable generators) shall be shielded from sensitive uses using local temporary noise barriers or enclosures, or shall otherwise be designed or configured to minimize noise at nearby noise-sensitive receptors. 3. Staging of construction equipment shall not occur within 50 feet of any noise- or vibration-sensitive land uses. 4. All noise-producing equipment and vehicles using internal combustion engines shall be equipped with mufflers; 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. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment. 5. All mobile or fixed noise-producing equipment used for the project that are regulated for noise output by a local, state, or federal agency shall comply with such regulations. 6. Idling equipment shall be kept to a minimum and moved as far as practicable from noise-sensitive land uses. 7. Electrically powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible. 8. Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors. 9. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		10. Notice will be provided via mail, door hangers, or other means prior to construction to properties within approximately 500 feet of work areas where helicopter-aided construction will occur. The announcement will state where and when construction is expected to occur in the area. The announcement will also identify a public liaison person that can be contacted for construction-related noise concerns. Any complaints will be logged and investigated to facilitate resolution of the issue of concern as feasible.	
Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Significant	MM-NOI-1	Less than significant
Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Less than significant	No mitigation measures are required.	Not applicable
Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Significant	MM-NOI-1	Less than significant
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? *	No impact	No mitigation measures are required.	Not applicable
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? *	No impact	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project have a cumulative effect relative to noise?	Significant	MM-NOI-1	Less than significant
*Population and Housing **			
Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No impact	No mitigation measures are required.	Not applicable
Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	No impact	No mitigation measures are required.	Not applicable
Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	No impact	No mitigation measures are required.	Not applicable
*Public Services **			
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:			
Fire protection?	No impact	No mitigation measures are required.	Not applicable
Police protection?	No impact	No mitigation measures are required.	Not applicable
Schools?	No impact	No mitigation measures are required.	Not applicable
Parks?	No impact	No mitigation measures are required.	Not applicable
Other public facilities?	No impact	No mitigation measures are required.	Not applicable
*Recreation **			
Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Less than significant	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No impact	No mitigation measures are required.	Not applicable
Transportation and Traffic			
Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance or 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?	Less than significant	No mitigation measures are required.	Not applicable
Would the project 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?	Less than significant	No mitigation measures are required.	Not applicable
Would the project 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? *	Less than significant	No mitigation measures are required.	Not applicable
Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? *	Less than significant	No mitigation measures are required.	Not applicable
Would the project result in inadequate emergency access? *	Less than significant	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? *	Less than significant	No mitigation measures are required.	Not applicable
Would the project have cumulative impacts on transportation and traffic?	Less than significant	No mitigation measures are required.	Not applicable
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:			
i. 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)?	Less than significant	No mitigation measures are required.	Not applicable
ii. 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?	Significant	MM-TCR-1: Construction Monitoring. A Native American monitor shall be present to accompany archaeologists during any necessary archaeological fieldwork (such as survey, test excavations, data recovery) that may be required, and to observe initial ground disturbance during construction, including clearing/grubbing, grading, excavation, trenching, and auguring. (1) The Los Angeles Department of Water and Power (LADWP) will provide the archaeologist and the interested Tribe(s) with a weekly construction schedule identifying all ground disturbing activities within the monitoring area. (2) The Native American Monitor shall photo-document ground disturbing activities and maintain a daily monitoring log that contains descriptions of the daily construction activities, locations with diagrams, soils, and documentation of tribal cultural resources	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		identified. The monitoring log and photo documentation, accompanied by a photo key, shall be submitted to LADWP upon completion of the aforementioned earthwork activity. (3) In the event that Native American cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards shall assess the find (MM-TCR-4). If the unanticipated resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in MM-CUL-1. The archaeologist and Tribal monitor will have the authority to request ground disturbing activities cease within the area of a discovery. Work on the other portions of the project outside of the buffered area may continue during this assessment period. (4) A sufficient number of archaeological and Tribal monitors shall be present each work day to ensure that simultaneously occurring ground disturbing activities receive thorough levels of monitoring coverage. MM-TCR-2: Pre-Construction Meeting. Prior to project implementation, a pre-construction meeting shall be held with Los Angeles Department of Water and Power and field personnel, the archaeologist, and Tribal Representative(s). This meeting shall outline all processes for monitoring on the project, review the laws protecting cultural resources, and discuss specific cultural concerns associated with the project area.	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
		MM-TCR-3: Human Remains. If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5 and that code shall be enforced for the duration of the project. (1) Inadvertent discoveries of human remains and/or funerary object(s) are subject to California State Health and Safety Code Section 7050.5, and the subsequent disposition of those discoveries shall be decided by the Most Likely Descendant (MLD), as determined by the NAHC, should those findings be determined as Native American in origin. MM-TCR-4: Cultural Resources Treatment Plan. If significant Native American cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, a qualified archaeologist shall be retained to develop an cultural resources Treatment Plan, the drafts of which shall be provided to the interested Tribe(s) for review and comment. (1) All in-field investigations, assessments, and/or data recovery enacted pursuant to the finalized Treatment Plan shall be monitored by a Native American monitor. (2) LADWP shall, in good faith, consult with the interested Tribe(s) on the disposition and treatment of any artifacts or other cultural materials encountered during the project.	

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project have a cumulative effect on tribal cultural resources?	Significant	MM-TCR-1 MM-TCR-2 MM-TCR-3 MM-TCR-4	Less than significant
Utilities and Service Systems *			
Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	No impact	No mitigation measures are required.	Not applicable
Would the project 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?	No impact	No mitigation measures are required.	Not applicable
Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	No impact	No mitigation measures are required.	Not applicable
Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	No impact	No mitigation measures are required.	Not applicable
Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No impact	No mitigation measures are required.	Not applicable
Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Less than significant	No mitigation measures are required.	Not applicable

Table ES-1. Summary of Project Impacts

Environmental Issue Area & CEQA Threshold Question	Impact before Mitigation	Recommended Mitigation Measure(s)	Level of Significance After Mitigation
Would the project comply with federal, state, and local statutes and regulations related to solid waste?	No impact	No mitigation measures are required.	Not applicable
Energy			
Would the project result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than significant	No mitigation measures are required.	Not applicable
Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less than significant	No mitigation measures are required.	Not applicable
Would the project have cumulative impacts relative to energy consumption?	Less than significant	No mitigation measures are required.	Not applicable

Note: * These issue areas are discussed in the Initial Study (see Appendix A, which includes the Initial Study) and were scoped out from inclusion in the EIR.

1 INTRODUCTION

This Environmental Impact Report (EIR) has been prepared by the Los Angeles Department of Water and Power (LADWP) to evaluate potential environmental effects that would result from development of the proposed Power Plant 1 (PP1) and Power Plant 2 (PP2) Transmission Line Conversion Project (proposed project). This EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code Section 2100 et. seq., as amended) and its implementing guidelines (Cal. Code Regs., Title 14, Section 15000 et. seq.). LADWP is identified as the lead agency for the proposed project under CEQA.

1.1 Summary of the Proposed Project

The proposed project is a transmission line replacement project proposed by LADWP. The project would be located within a linear alignment in northwestern Los Angeles County that generally extends from Haskell Canyon to the community of Sylmar, located south of the City of Santa Clarita. The project would involve replacing a 12-mile segment of an existing 115 kilovolt (kV) double circuit transmission line with a new 230 kV double circuit transmission line (hereafter referred to as the "115 kV line" and the "230 kV line," respectively). The new 230 kV line would be strung with two 230-kV 3 phase circuits; however, only one circuit would be energized upon project completion. The second would be energized in the future, based on availability of future renewable energy supplies. The proposed project would involve demolishing the existing 115 kV line and constructing an approximately 12-mile segment of 230 kV lines and associated transmission structures generally adjacent to the existing 115 kV line. The 115 kV line and most of its associated transmission towers would be removed from Haskell Canyon Switching Station in the north to the line's terminus at Olive Switching Station in the south. The new line would be installed and the old line would be removed within an existing alignment that extends from Haskell Canyon Switching Station in the north to Olive Switching Station and Sylmar Switching Station in the south. The proposed new line would also originate at Haskell Canyon Switching Station. The circuit that would not be energized would terminate at Olive Switching Station, and the energized circuit would terminate at Sylmar Switching Station. The project alignment is approximately 12 miles long and consists of LADWP-owned land and private properties within an LADWP right-of-way. The purpose of this project is to increase the transmission capacity between Haskell Canyon Switching Station and Sylmar Switching Station so that additional renewable energy supplies can be transmitted from the Tehachapi Mountains and Mojave Desert to the Los Angeles basin.

1.2 CEQA Environmental Process

CEQA requires preparation of an EIR when there is substantial evidence supporting a fair argument that a proposed project may have a significant effect on the environment. The purpose of an EIR is to provide decision makers, public agencies, and the general public with an objective and informational document that fully discloses the environmental effects of the proposed project. The EIR process is intended to facilitate the objective evaluation of potentially significant direct, indirect, and cumulative impacts of the proposed project, and to identify feasible mitigation measures and alternatives that would reduce or avoid the proposed project's significant effects. In addition, CEQA specifically requires that an EIR identify those adverse impacts determined to be significant after mitigation.

In accordance with the CEQA Guidelines, an Initial Study was prepared and a Notice of Preparation distributed on January 23, 2018, to public agencies and organizations. The purpose of the Notice of Preparation was to provide notification that LADWP plans to prepare an EIR and to solicit input on the scope and content of the EIR. In accordance with CEQA Guidelines Section 15082, LADWP distributed the NOP to 48 agencies and organizations, along with a copy of the Initial Study on compact disc. The NOP was also filed with the State Clearinghouse. Additionally, LADWP sent the NOP to addresses within a 500-foot buffer of the project alignment and published the NOP in local newspapers (*Santa Clarita Valley Signal* and *Los Angeles Daily News*). Hardcopies of the Initial Study were available for review at two local libraries (Old Town Newhall Library and Sylmar Branch Library) and at the LADWP Environmental Affairs office. An electronic copy of the Initial Study was made available on LADWP's website. In response to the NOP, 13 written comment letters were received. These letters and the NOP/Initial Study are included in Appendix A of this EIR.

A public agency scoping meeting was held on February 7, 2018, at 6:00 pm at the City of Santa Clarita Activities Center, located at 20880 Centre Pointe Parkway in Santa Clarita. Information regarding the scoping meeting was included in the NOP, which was widely distributed, as described above. The purpose of this meeting was to seek input from public agencies and the general public regarding the environmental issues and concerns that may potentially result from the proposed project. One person, a planner from the City of Santa Clarita Community Development department, attended the meeting. A summary of the proposed project and the CEQA process was presented at the meeting; no specific comments or questions were received at the scoping meeting.

This EIR focuses on the environmental impacts identified as potentially significant during the Initial Study process, including the comments received in response to the Notice of Preparation. The issue areas analyzed in detail in this EIR consist of aesthetics, air quality, cultural resources, geology and soils, greenhouse gas emissions, noise, transportation and traffic, tribal cultural resources, and energy. Other required environmental issue areas have been addressed in the Initial Study, which is included in Appendix A of this EIR, and were determined to require no further detailed analysis in the EIR.

On December 28, 2018, the state adopted updates to the CEQA Guidelines to add efficiency and clarity to aspects of the guidelines and to incorporate recent case law and legislation that had not yet been reflected in the text of the guidelines. The recently adopted updates also include revisions to Appendix G of the CEQA Guidelines, which consists of environmental checklist questions that are used by many lead agencies as the framework for environmental documents prepared pursuant to CEQA.

Section 15007(d) of the CEQA Guidelines specifies that any new content of requirements shall be in effect 120 days after the effective date of the Guideline amendments, which would be April 27, 2019. Therefore, per Section 15007(c), draft documents issued for public review after that date shall comply with new content requirements. The legislation and court decisions that are reflected in the updates were already in effect at the time the Notice of Preparation was issued in January 2018 and during the preparation of the Draft EIR. As such, this EIR is in compliance with the content requirements of the 2018 CEQA Guidelines. Notably, new CEQA Guidelines Section 15064.3, which requires the use of vehicle miles travelled to assess the significance of transportation impacts, does not

go into effect until July 1, 2020, well after the anticipated certification of this EIR. As further discussed below, the environmental checklist questions have not been revised to reflect the format of the 2018 Guidelines. As Appendix G is a recommended checklist, such conformance is not required to comply with the requirements of the CEQA statute and Guidelines.

The environmental checklist questions used in this EIR are based on the version of Appendix G that was in place at the time the NOP was released for public review. However, use of the updated environmental checklist would not change the environmental conclusions in this EIR or the content of the analysis, and use of the threshold questions in Appendix G is not a CEQA requirement. (Rather, Appendix G contains sample questions that can help guide a lead agency in the environmental analysis process.) The recent updates to Appendix G can be summarized as follows: narrowing the scope of aesthetic impacts; moving the topic of paleontology from the cultural resources section to the geology section; adding threshold questions to address the topic of energy; expanding wildfire issues; combining airport safety and noise into one threshold question; deleting the reference to private airstrips; incorporating Vehicle Miles Traveled analysis into the transportation section; making the hydrology and utilities questions more concise and applicable to modern issues; clarifying that land use conflicts must relate to a physical impact; and adding "unplanned" to the population growth question, so that the question now focuses only on unplanned growth. While this EIR does not follow the new organization of the updated Appendix G, all of the necessary and applicable information is presented in this EIR: the topic of paleontology is addressed in Section 3.5 of the Initial Study (see Appendix A1); the topic of energy is addressed in Section 3.10 of this EIR; the topic of wildfires is addressed in Section 3.8 of the Initial Study, and mitigation has been provided to reduce potential wildlfire effects; both airport safety and noise have been addressed in the Initial Study, and impacts were determined to be below a level of significance; and, the topics of hydrology, utilities, land use, and population growth were all addressed and discussed in the Initial Study and eliminated from detailed discussion in the EIR, due to the limited impacts that are expected to occur for those issue areas. As such, all required environmental topics and issues have been addressed in this EIR. While the organization of this EIR does not reflect the updated Appendix G checklist, these updates would not affect the analysis or substantive information in this EIR.

This Draft EIR is being circulated for 45 days for public review and comment. The timeframe of the public review period is identified in the Notice of Availability attached to this Draft EIR. During this period, comments from the general public, organizations, and agencies regarding environmental issues analyzed in the Draft EIR and the Draft EIR's accuracy and completeness may be submitted to the lead agency at the following address:

Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012
Attention: Kathryn Laudeman
Fax: 213.367.4710
Email: kathryn.laudeman@ladwp.com

General questions about this EIR and the EIR process should also be directed to the email address above. LADWP will prepare written responses to all comments pertaining to environmental issues raised in the Draft EIR if they are submitted in writing and postmarked by the last day of the public review period identified in the Notice of Availability.

Prior to approval of the proposed project or an alternative to the proposed project, the City of Los Angeles Board of Water and Power Commissioners, as the decision-making entity for the project, is required to certify that this EIR has been completed in accordance with CEQA, that the proposed project has been reviewed and the information in this EIR has been considered, and that this EIR reflects the independent judgment of the City. CEQA also requires the Board of Water and Power Commissioners to adopt "findings" with respect to each significant environmental effect identified in the EIR) (Pub. Res. Code Section 21081; Cal. Code Regs., Title 14, Section 15091). For each significant effect, CEQA requires the approving agency to make one or more of the following findings:

- The proposed project has been altered to avoid or substantially lessen significant impacts identified in the Final EIR.
- The responsibility to carry out such changes or alterations is under the jurisdiction of another agency.
- Specific economic, legal, social, technological, or other considerations, which make infeasible the mitigation measures or alternatives identified in the Final EIR.

If the Board of Water and Power Commissioners concludes that the proposed project or an alternative to the proposed project will result in significant effects that cannot be substantially lessened or avoided by feasible mitigation measures and alternatives, the Board of Water and Power Commissioners must adopt a "statement of overriding considerations" prior to approval of the proposed project (Pub. Res. Code Section 21081(b)). Such statements are intended under CEQA to provide a written means by which the lead agency balances in writing the benefits of the proposed project and the significant and unavoidable environmental impacts. Where the lead agency concludes that the economic, legal, social, technological, or other benefits outweigh the unavoidable environmental impacts, the lead agency may find such impacts "acceptable" and approve the proposed project.

In addition, the Board of Water and Power Commissioners must also adopt a Mitigation Monitoring and Reporting Program describing the changes that were incorporated into the proposed project or made a condition of project approval in order to mitigate or avoid significant effects on the environment (Pub. Res. Code Section 21081.6). The Mitigation Monitoring and Reporting Program is adopted at the time of project approval and is designed to ensure compliance during project implementation. Upon approval of the proposed project, the lead agency will be responsible for implementation of the proposed project's Mitigation Monitoring and Reporting Program. This document will be attached to the Final EIR.

1.3 Organization of the EIR

This EIR is organized as follows:

An **Executive Summary** of the EIR is provided at the beginning of this document. This summary contains a brief description of the proposed project and alternatives; a discussion of issues raised by the public and agencies relative to the project and where those issues have been addressed in the EIR; and a table that summarizes the potential environmental impacts in each issue area, the significance determination for those impacts, mitigation measures, and significance after mitigation.

Chapter 1, Introduction, serves as a forward to this EIR, introducing the project, the applicable environmental procedures, and the organization of the EIR.

Chapter 2, Project Description, provides a thorough description of the proposed project elements, the purpose and need for the project, project objectives, and required discretionary approvals. This chapter also includes a description of the intended uses of the EIR and public agency actions.

Chapter 3, Environmental Analysis, describes the potential environmental effects of the proposed project, as well as proposed mitigation measures to reduce or avoid any potentially significant impacts. The discussion in Chapter 3.0 is organized by ten environmental issue areas and also includes a section with information on electric and magnetic fields:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Noise
- Transportation and Traffic
- Tribal Cultural Resources
- Energy
- Electric and Magnetic Fields

For each environmental issue area, the analysis and discussion are generally organized into seven subsections as described below:

- **Environmental Setting –** This subsection describes the physical environmental conditions in the vicinity of the proposed project at the time of publication of the Notice of Preparation. The environmental setting establishes the baseline conditions, which were used by LADWP to determine whether specific project-related impacts would be significant.
- **Relevant Plans, Policies, and Ordinances –** This subsection describes the regulatory setting applicable to the environmental issue area and the proposed project at the time of publication of the Notice of Preparation.

- **Thresholds of Significance –** This subsection identifies a set of thresholds by which the level of impact is determined. Thresholds that were eliminated from further review in the EIR as part of the Initial Study analysis will be identified here.
- **Methodology –** This subsection describes how the analysis was conducted.
- **Impact Analysis –** This subsection provides a detailed analysis regarding the environmental effects of the proposed project, and whether the impacts of the proposed project would meet or exceed the established significance criteria.
- **Mitigation Measures –** This subsection identifies potentially feasible mitigation measures that would avoid or substantially reduce significant adverse project impacts.
- **Level of Significance After Mitigation –** This subsection discusses whether project-related impacts would be reduced to below a level of significance with implementation of the mitigation measures identified in the EIR. If applicable, this subsection also identifies any residual significant and unavoidable adverse effects of the proposed project that would result even with implementation of mitigation measures.

In addition to the seven subsections listed above, full citations for all referenced documents are included at the end of each section or chapter.

Chapter 4, Cumulative Effects, discusses the cumulative effects of the project in combination with the effects of other projects in the vicinity.

Chapter 5, Alternatives, discusses alternatives to the proposed project, including a No Project Alternative. This chapter describes the rationale for selecting the range of alternatives discussed in the EIR and identifies the alternatives considered by LADWP that were rejected from further discussion as infeasible during the scoping process. Chapter 5.0 also includes a discussion of the environmental effects of the alternatives that were carried forward for analysis and identifies the environmentally superior alternative.

Chapter 6, Other CEQA Requirements, addresses significant environmental effects that cannot be avoided, significant irreversible environmental changes that would result from implementation of the proposed project, and growth-inducing impacts.

Chapter 7, List of Preparers, gives names and contact information of those responsible for writing this EIR.

Appendices include various technical studies prepared for the proposed project, as listed in the Table of Contents.

LADWP, as the designated lead agency for the proposed project, is responsible for enforcing and verifying that each mitigation measure is implemented as required. As part of the Final EIR process, a mitigation monitoring and reporting program will be prepared.

2 PROJECT DESCRIPTION

This chapter provides a description of the proposed Power Plant 1 (PP1) and Power Plant 2 (PP2) Transmission Line Conversion Project, referred to in this document as the proposed project. Pursuant to CEQA Guidelines Section 15124, this chapter describes the location, objectives, and characteristics of the proposed project, followed by a statement describing the intended uses of this EIR and the required approvals for the project.

2.1 Project Overview

The proposed project is a transmission line replacement project proposed by the Los Angeles Department of Water and Power (LADWP). The project would be located within a linear alignment in northwestern Los Angeles County that generally extends from Haskell Canyon to the community of Sylmar, located south of the City of Santa Clarita. The project would involve replacing a 12-mile segment of an existing 115 kilovolt (kV) double circuit transmission line with a new 230 kV double circuit transmission line (hereafter referred to as the "115 kV line" and the "230 kV line," respectively). The new 230 kV line would be strung with two 230-kV 3 phase circuits; however, only one circuit would be energized upon project completion. The second would be energized in the future, based on availability of future renewable energy supplies. The proposed project would involve demolishing the existing 115 kV line and constructing an approximately 12-mile segment of 230 kV lines and associated transmission structures generally adjacent to the existing 115 kV line. The 115 kV line and most of its associated transmission towers would be removed from Haskell Canyon Switching Station in the north to the line's terminus at Olive Switching Station in the south. The new line would be installed and the old line would be removed within an existing alignment that extends from Haskell Canyon Switching Station in the north to Olive Switching Station and Sylmar Switching Station in the south. The proposed new line would also originate at Haskell Canyon Switching Station. The circuit that would not be energized would terminate at Olive Switching Station, and the energized circuit would terminate at Sylmar Switching Station. The project alignment is approximately 12 miles long and consists of LADWP-owned land and private properties within an LADWP right-of-way. The purpose of this project is to increase the transmission capacity between Haskell Canyon Switching Station and Sylmar Switching Station so that additional renewable energy supplies can be transmitted from the Tehachapi Mountains and Mojave Desert to the Los Angeles basin.

2.2 Project Location

Proposed Alignment

The proposed 230 kV line would be located within the same corridor as the existing 115 kV line. As such, the linear area in which the proposed and existing lines are located will be referred to herein as the "project alignment." The project alignment extends from Haskell Canyon Switching Station in the north to Sylmar Switching Station in the south. The southern extent of the alignment is located within the Granada Hills–Knollwood Community Plan area within the City of Los Angeles, immediately west of Interstate 5 (I-5), near the interchange of I-5 and I-210 and approximately 825 feet south-southeast of the intersection of San Fernando Road and Sepulveda Boulevard. The alignment then extends east for approximately 0.6-mile, crossing I-5 and entering the Sylmar Community Plan area within the City of Los Angeles, paralleling San Fernando Road. The alignment then angles north, crosses I-210, and

extends through an industrial area in Sylmar before exiting the City of Los Angeles and extending through an undeveloped mountainous area in the San Gabriel Mountains, north of Sylmar and within an unincorporated area of Los Angeles County (County). The portion of the alignment that crosses the San Gabriel Mountains extends between State Route 14 (SR 14) to the west and the Angeles National Forest boundary to the east. This area is comprised of rugged, hilly terrain. Next, the alignment descends into the Santa Clara River basin in the City of Santa Clarita. It extends through the City of Santa Clarita for approximately 7 miles, crossing the SR 14, the Santa Clara River, and single-family residential neighborhoods and commercial areas within the City of Santa Clarita. The alignment extends for approximately 2 miles through an area with single-family residential neighborhoods and undeveloped hillside areas in Haskell Canyon. The alignment then terminates at the Haskell Canyon Switching Station, which is located just south of the Angeles National Forest (Figure 2-1).

Existing Setting

The project would be located within an established transmission corridor (referred to as the "South of Haskell Corridor" within the LADWP electrical transmission system), within two existing electrical switching stations (Haskell Canyon Switching Station and Sylmar Switching Station), and within several properties adjacent to and in the vicinity of the transmission corridor (which would be used for temporary construction laydown and staging, including helicopter landing/staging). The South of Haskell Corridor has been used for electricity transmission since the early 1900s. The corridor is an LADWP right-of-way, consisting of LADWP-owned land and private property that is 250 feet in width and contains three existing transmission lines: a 500 kV DC line, the 115 kV line that is proposed for replacement as part of this project, and 230 kV lines supported by 4-circuit towers. All three existing transmission lines are supported by lattice transmission towers. Representative images of the existing right-of-way are shown in Figure 2-2.

The existing 115 kV line is supported by lattice transmission towers, each of which have a footprint that is approximately 40 feet in width by 40 feet in length. Each tower has 4 concrete foundations that are approximately 2 feet in diameter each. The existing towers range in height from 54 feet to 156 feet.

Surrounding Land Uses

The land uses surrounding the transmission corridor and the two switching stations range from industrial areas to open space. Surrounding land use designations are shown in Figure 2-3.

2.3 Environmental Setting

The project area falls within the northwestern portion of Los Angeles County and generally straddles the San Gabriel Mountains, the Santa Clara River Valley, and the Sierra Pelona Mountains. The southern terminus of the alignment is located within the San Fernando Valley and parallels Grapevine Canyon. The alignment then crosses the Elsmere, Whitney, and Placerita Canyons, extending through the San Gabriel Mountains and then descending into the Santa Clara River Valley, where it crosses neighborhoods, undeveloped hilly areas, and commercial areas within the City of Santa Clarita. The alignment then crosses the Santa Clara River and then ascends through hillside

neighborhoods before ascending north through an undeveloped, hilly area within Haskell Canyon. The alignment terminates just outside of the Angeles National Forest boundary. Elevations along the alignment range from approximately 1,300 feet above mean sea level (amsl) along the Santa Clara River to approximately 2,320 feet amsl in the hillside regions of the project area.

2.4 Project Background

The 115 kv San Francisquito PP1 and PP2 transmission lines were built between 1917 and 1925 for the purpose of carrying power generated by water flow through the newly constructed Los Angeles Aqueduct. These lines are part of the first electrical power generation and transmission system constructed to provide electricity to the City of Los Angeles. In recent years, additional renewable energy generating facilities have been developed in the desert areas to the north of the project alignment. Historically, energy generation was primarily concentrated in the Los Angeles basin. The location of energy generation is changing, and the existing transmission lines extending south from Haskell Canyon Switching Station do not have sufficient capacity to transfer renewable energy supplies from the desert to the highly populated Los Angeles basin. The proposed project would assist LADWP in adapting to these recent changes in the location of energy generation.

As part of the planning efforts for LADWP's electrical transmission and distribution system, an anticipated energy scenario was calculated for year 2021 and beyond, showing a combination of existing and reasonably foreseeable renewable energy facilities in the region to the north of Haskell Canyon Switching Station. This region includes Mojave and Tehachapi, which are areas with solar and wind resources that are currently used by LADWP as key sources of renewable energy and that are expected to allow for further expansion of LADWP's renewable energy resources. Current and future renewable energy projects in this area and their respective capacities are as follows: Pine Tree Wind and Solar (143 megawatts (MW)), Beacon Solar (250 MW), Beacon Battery storage (20 MW), Re-Cinco (60 MW), Springbok I, II, and III (350 MW), Owens Gorge (110 MW), and Eland 1 (200 MW), amounting to a total renewable energy generation capacity of 1,133 MW. The Barren Ridge Renewable Transmission Project, which is currently under construction, includes a new transmission line extending from the Mojave and Tehachapi area to Haskell Canyon Switching Station. This line will bring additional energy to the Haskell Canyon Switching Station. The 2021 energy scenario with existing and probable renewable energy infrastructure in the Mojave and Tehachapi areas shows thermal violations on transmission lines south of the Haskell Canyon Switching Station. This indicates that line currents would increase to the extent that safety and reliability of the line may become compromised. When the line current increases, the conductor heats, the line elongates, and spans of the line can sag. If lines sag beyond required clearances, code violations and safety hazards may occur. As such, the South of Haskell Corridor has been identified as a constraint for energy transfer. Maintaining adequate capacity of the lines south of Haskell Canyon Switching Station is essential for alleviating these constraints and for ensuring continued safety, reliability, and compliance with laws governing electrical transmission.

As described above, the proposed project would eliminate the anticipated thermal violations south of Haskell Canyon Switching Station under the 2021 energy scenario and would allow for safe and reliable electrical transmission south of Haskell Canyon Switching Station. The proposed project would also ensure that the transmission capacity created by

the Barren Ridge Renewable Transmission Project and the associated renewable energy in Mojave and Tehachapi can be transmitted to areas of demand. The need for renewable resources from this region is driven by a variety of state and local policies dictating GHG reductions and increased renewable portfolios. With these regulations in place, LADWP must continue to use renewable energy, increase its supply of renewable energy, and ensure that these supplies can be transmitted to areas of demand. LADWP's Power Planning and Development Division has indicated that the South of Haskell Corridor requires additional transmission capacity to accommodate the required increases in renewable portfolio. Some of the key regulatory drivers for GHG reductions and increased renewable portfolios are described in the following paragraphs.

Assembly Bill (AB) 32, Senate Bill (SB) 32, and AB 197 have been passed at the state level and establish an overall goal of reducing California's statewide GHG emissions by 40% below 1990 levels by 2030. AB 32 specifically sets forth a long-term goal of reducing GHG emissions by 80% below 1990 levels by 2050. Additionally, the state has established Renewable Portfolio Standards (RPS) requiring utilities to obtain certain percentages of their energy from renewable sources by target years. A variety of RPS standards have been enacted, the most recent of which is SB 350. This law was passed in 2015 and requires meeting or exceeding 50% RPS by 2030 with interim targets of 40% RPS by 2024 and 45% by 2027 (LADWP 2017). SB 100, passed in 2018, increased the standards set forth in SB 350. SB 100 states that 44% of the total electricity sold to retail customers in California per year must be secured from qualifying renewable energy sources by December 31, 2024. This percentage will increase to 52% by December 31, 2027, and 60% by December 31, 2030. SB 100 also sets forth a state policy that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. The bill also requires that achieving 100% zero-carbon electricity does not increase carbon emissions elsewhere in the western grid and that this requirement is not fulfilled through resource shuffling.

At the local level, the City of Los Angeles (City) adopted the City of Los Angeles Sustainable City Plan ("pLAn") in 2015, which establishes measures and goals for sustainability in Los Angeles, including GHG reduction targets and goals for use of renewable energy. The plan establishes the goal of reducing GHG emissions below the 1990 baseline by at least 45% by 2025, 60% by 2035, and 80% by 2050. Additionally, the plan sets forth goals of deriving 50% of LADWP's electricity from renewable sources by 2030, having no ownership stake in coal-fired power plants by 2025, and ceasing delivery of power from the Navajo Generating Station. (Note that SB 100, passed at the state level in 2018, increases the required percentage of renewable sources to 60% by 2030. As such, the City will be required to exceed the renewable targets set forth in the pLAn.) City departments, including LADWP, are required to report regularly on their progress at achieving the goals outlined in the pLAn, and progress reports are issued each year (City of Los Angeles 2015). Subsequent to adopting the pLAn, the City began exploring its ability to obtain 100% of its energy from renewable sources. In 2016, the City Council passed a motion directing LADWP to investigate what investments would be necessary to achieve a 100% renewable energy portfolio. This is called the "100% Clean Energy Research and Partnership effort" (LADWP 2017). LADWP has begun incorporating this effort into its long-term planning strategies to determine the feasibility of a 100% renewable energy portfolio.

In December 2017, LADWP released its Final Power Strategic Long-Term Resource Plan (SLTRP). This plan has a planning horizon of 2050, which aligns with statewide greenhouse gas emissions goals and incorporates the possibility

of a 100% renewable energy portfolio in the future. The 2017 SLTRP provides strategies for a 100% renewable energy portfolio and for meeting or exceeding state RPS targets established in SB 350. Strategies include early coal replacement (by 2025) and accelerating RPS to 50% by 2025, 55% by 2030, and 65% by 2036. (SB 100, passed in 2018, establishes slightly more stringent requirements of 60% renewables by 2030. LADWP is required to comply with the latest state mandates.) The SLTRP found that a combination of the following strategies would reduce LADWP's GHG emissions more than 82% below 1990 levels over the next 20 years: early coal replacement, accelerated RPS, energy efficiency, local solar, energy storage, and transportation electrification.

The SLTRP examines several scenarios through which LADWP could achieve the RPS and GHG reduction goals described above. These scenarios dictate the expansion of renewable energy use over the course of the next 20 years. Strategies for renewable energy expansion outlined in the SLTRP include increased distributed generation, energy storage, and increased RPS. Increased RPS would be achieved through the installation of new renewables (geothermal, biogass, wind, distributed solar, and non-distributed solar). LADWP obtained approximately 29% of its power from renewable sources in 2016. In order to achieve the RPS goals described above, LADWP's renewable portfolio would need to increase by approximately 20% over the next 10 years and 36% over the next 20 years.

The planned increases in use of renewable energy dictated by the SLTRP and by the state have associated system reliability challenges, because renewable energy often comes from different locations than traditionally generated energy and because renewable energy such as wind and solar are generated intermittently. Increasing RPS will require LADWP to replace or install new equipment and technologies for generation, transmission, distribution, and substations and to determine approaches for integrating intermittent sources of energy into the system (LADWP 2017).

The proposed project fits into the framework of the SLTRP by ensuring that increasing renewable supplies in Mojave and Tehachapi will not overload transmission infrastructure and by ensuring that such supplies can be successfully, safely, and reliably delivered to the City, thereby contributing to the City's goals of increasing its RPS.

2.5 Project Objectives

Section 15124(b) of the CEQA Guidelines states that the project description of an EIR shall contain "a statement of the objectives sought by the proposed project." Section 15124(b) further states that "the statement of objectives should include the underlying purpose of the project." The underlying purpose of the project is to alleviate constraints for transferring renewable energy supplies from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin in order to help LADWP achieve state and local requirements for GHG reductions and an increased renewable energy portfolio. As set forth in the CEQA Guidelines, the project's specific objectives are provided below.

- Allow for increased transmission of renewable energy from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin.
- Assist LADWP in reducing greenhouse gas emissions and meeting RPS goals established in the City's sustainability plans and initiatives.
- Improve the safety and operational flexibility of energy transmission in the South of Haskell Corridor to address system reliability concerns associated with increased use of solar and wind energy sources.

- Enhance the operational flexibility of the Haskell Canyon Switching Station and Sylmar Switching Station.
- Minimize the environmental disturbance of transmission upgrades by constructing improvements within an existing transmission corridor and within existing switching stations; avoiding sensitive resources to the extent feasible; and minimizing the number of new access routes.

2.6 Project Design

The conceptual project design specifies that the new double circuit 230 kV line would be strung on approximately 70 new transmission structures and approximately 7 existing structures. The project design may be subject to refinements as specific construction plans are developed. Through survey work, geotechnical engineering, and evaluation of environmental constraints in the area, LADWP selected the locations where new transmission structures would be installed within the existing LADWP corridor. These locations were selected to minimize effects to sensitive resources and adjacent land uses (such as biological resources, cultural resources, neighborhoods, and recreational facilities). The locations were also selected so that LADWP would be able to use existing access roads and existing disturbed, graded areas to the extent feasible, in order to minimize potential environmental effects and to streamline the construction process. During construction, work areas would be established around each of the new structure locations for construction and operational purposes. The work areas required for construction at each structure location would be larger than those required for operation; as such, a portion of the work areas would be restored post construction. In select circumstances and where necessary, new access routes would also be installed to establish access to the new structure locations. Most of the new routes would be maintained for future maintenance purposes during project operation.

Of the 70 new structures, approximately 10 are expected to be lattice structures and approximately 60 are expected to be steel monopoles. Of the existing structures to remain, all are lattice towers. The new structures would range in height from approximately 100 feet to 200 feet. The new structures would be standard galvanized steel, which would appear polished upon initial installation but would fade to grey over time. Appendix B shows a tabulation of the new and existing-to-remain structures for the new 230 kV line, including the anticipated height of each structure and the structure type. Appendix B also provides maps showing greater detail on the proposed structure locations, structure removals, work areas, and laydown areas.

The proposed structures are individually numbered, beginning with structure 1-1 at Haskell Switching Station (northern terminus of the new 230 kV line). The energized circuit would terminate at Sylmar Switching Station, and the non-energized circuit would terminate at Olive Switching Station. Structure 13-3 is the southernmost proposed new structure, located approximately 0.6 mile east of Sylmar Switching Station. From structure 13-3, the new energized circuit would generally be strung along an empty position on existing transmission structures. One new structure located south of structure 13-3 is required (structure 249-2B-1), and minor modifications may be required at the other existing structures that would carry the new line from proposed structure 13-3 to the Sylmar Switching Station. The energized circuit would terminate at Sylmar Switching Station (the southern terminus of the new 230 kV line). (See Appendix B for a complete list of the structure numbers and associated locations.)

2.7 Project Construction

Construction of the proposed project would involve the following general sequence of events: (1) site preparation; (2) removing existing structures and conductors associated with the 115 kV line; (3) installing new transmission structures and conductors for the new 230 kV line; (4) switching station tie-ins and upgrades; and (5) site rehabilitation. Each of these activities is described in greater detail below. Note that while these activities are described separately, multiple activities may occur simultaneously. For example, site preparation, removal of existing 115 kV line facilities, installation of new transmission structures, and conductor stringing could all occur simultaneously at different segments of the alignment.

Construction is expected to take approximately 4 years, beginning in 2019 and ending in 2023. Throughout the course of construction, grading is expected to total 28 acres, soil import is expected to total 7,200 cubic yards, and soil export is expected total 5,200 cubic yards. These activities would be spread across numerous work areas along the alignment. While the number of workers along the alignment would vary based on the construction phase, the work force would generally consist of 7 construction crews working simultaneously on multiple segments of the alignment. The maximum number of daily workers within the alignment would be approximately 70 workers. Construction would generally occur on weekdays during the daytime. If necessary, weekend construction may also occur, and nighttime construction would be required for major roadway, freeway, and railroad crossings. Table 2-1 lists the construction phases, anticipated duration of each phase, anticipated number of truck trips and workers required per phase, and the types of equipment that would likely be used.

Table 2-1. Construction Scenario Assumptions

Construction Phase	Average Daily Workers	Average Daily Vendor Truck Trips[1]	Total Haul Truck Trips[2]	Equipment	Quantity	Usage Hours	Start Date	Finish Date
Site Preparation	20	3	0	Tractor/loaders/ backhoes	2	8	Spring 2020	Fall 2023
				Ruber Tired Dozer	2	8		
				Motor Grader	2	8		
				Roller/Compactor	2	8		
Demolition (Removal of Existing 115 kV Line)	9	10	300	Crane and/or helicopter	2	8	Spring 2020	Fall 2023
				Manlift	2	8		
				Backhoe	2	8		
				Concrete Breaker	2	8		
Transmission Structure Installation & Conductor Stringing	12	27	40	Power auger	2	8	Spring 2020	Fall 2023
				Crane	3	8		
				Helicopter	1	4		
				Man lift	2	8		
				Stringing equipment[3]	1 [3]	8		

Table 2-1. Construction Scenario Assumptions

Construction Phase	Average Daily Workers	Average Daily Vendor Truck Trips[1]	Total Haul Truck Trips[2]	Equipment	Quantity	Usage Hours	Start Date	Finish Date
Switching Station Tie-ins and Upgrades	30	16	0	Tractor/loaders/ backhoes	2	8	Fall 2019	Fall 2023
				Crane	2	8		
				Man lift	2	8		
Site Rehabilitation	4	6	0	none	-	-	To occur intermittently between Spring 2020 and Fall 2023	

Notes:

1 Vendor truck trips are expressed as daily round trips (i.e., one trip represents one truck traveling to and from a work area daily). Vendor trucks include water trucks, concrete trucks, utility trucks, dump trucks, and any other material delivery trucks.

2 Total haul truck trips represents the total of number of haul truck trips that would occur over the course of the entire phase. Trips are expressed as round trips (i.e., one trip represents one truck traveling to and from a work area).

3 Stringing equipment would include the following: tensioners, triple drums, pullers, V groove bullwheel tensioners, reel carriers. It is assumed that one set of stringing equipment would be used per day, for 8 hours.

Best management practices (BMPs) would be used to minimize the risk of potential impacts during construction and would be communicated to employees prior to the start of work. Safety requirements and procedures to be followed during construction are provided in the LADWP Power Distribution safety rulebook.

Site Preparation

The proposed construction activities would require heavy vehicles and construction workers to travel to and from work areas for transmission structure installation, transmission structure removal, and staging along the alignment. Because the proposed alignment is within an existing transmission line corridor with transmission lines that are operated and maintained by LADWP, most work areas would be accessed via existing access roads. Some of the existing access roads may require improvements or repairs in order to ensure adequate access and safe conditions along the road. Some existing 115 kV line transmission structures are not accessible by vehicle. New reliability standards require that transmission structures are to be accessible by vehicle, or by foot where vehicle access is not possible, for workers and equipment to perform repairs and maintenance. As such, temporary access routes may be required to reach some of the existing structures, and some of the new structures may require construction of a new access route. Wherever possible, existing spur roads would be rerouted, or new spur roads would be constructed, to establish access to new transmission structures at locations where there is no existing access.

Right-of-Way Clearing. The clearing of some natural vegetation may be required prior to and during construction. However, selective clearing would be performed only when necessary for surveying, electrical safety clearances, line reliability, and maintenance. Trimming or removal of mature vegetation, under or near the conductors, would be done to provide adequate electrical clearance as required by the National Electrical Safety Code, the North American Electrical Reliability Corporation, and California Public Utilities Commission General Order 95 standards.

Laydown Area & Stringing Pad Establishment. Laydown areas and stringing pads would be established along the proposed alignment for equipment storage, materials storage, and mobile offices and to facilitate conductor removal and installation. The laydown areas and stringing pads would generally be confined to LADWP's right-of-way and would generally be situated on flat terrain. Laydown areas would be used throughout the duration of construction and would be returned to their previous site conditions during the site rehabilitation phase. Several laydown areas would extend beyond the transmission corridor or would be located within the vicinity of the transmission corridor. These larger laydown areas would be used for staging helicopter operations. These areas (referred to as "helicopter laydown areas" in this EIR) would be returned to their previous site conditions during the site rehabilitation phase to the extent feasible. The locations of stringing pads, laydown areas, and helicopter laydown areas are shown in Appendix B.

Removal of Existing 115 kV Line

The existing 115 kV line and associated infrastructure would be removed. The removal process would entail the following activities: removing conductors and ground wires, removing transmission structures, and removing transmission structure footings. Each tower removal would take approximately 1 day to complete.

Removing Conductors and Ground Wires. The old conductors and ground wires would be removed with the same types of equipment that would be required for stringing new conductors for the 230 kV line. The wire would first be placed in travelers on each tower and would then be pulled out using empty reels. This process would be staged from the stringing pads that would be established in the site preparation phase.

Removing Transmission Structures. Existing towers would be removed by crane or helicopter and workers in man lifts. (Heavy-duty helicopters would be used where feasible. It is anticipated that a helicopter would be used for approximately 20 structure removals. The specific locations where helicopters would be used for structure removal are currently unknown. However, they are expected to be similar in location and in nature to the anticipated structure installation sites that require helicopter use; see below under "Transmission Structure Installation & Conductor Stringing" for a description of the areas where structure installations are expected to be helicopter aided.) Removal would generally require two temporary construction pads. Additionally, as described above, some structures may require new, temporary access routes. The work pads would be graded flat and compacted for equipment support and would generally be located on opposite sides of the tower. First, workers in a man lift would unbolt tower sections. Either a crane or a helicopter would then remove the tower segments. When a crane is used for removal, the removed tower segments would be placed on the ground and later transported to one of the laydown areas or to a construction salvage location. In instances where a helicopter is used for removal, the tower segments would be transported to a predetermined location for steel salvage.

Removing Tower Footings. The existing footings would be removed to approximately 2 feet below grade. The footing area for existing transmission structures is typically 40 feet by 40 feet in area.

Transmission Structure Installation & Conductor Stringing

Construction of the proposed project would involve installation of approximately 70 new transmission structures within the proposed alignment. The majority of the new structures would be double-circuit steel monopole structures. Steel lattice structures would be used where they have been deemed necessary for safety and reliability reasons. (See Appendix B for the locations where lattice structures would be used.) Each installation would take approximately 25 days to complete. Each installation would involve several steps: preparing the work area, establishing foundations, assembling the tower, and installing the tower, as described below.

Preparing the Work Area. Structure installation activities would begin with establishing construction pads. For each structure installation site, two construction pads would be installed. At each new structure site, one pad would be permanently established (for maintenance purposes) and one would be temporary (for construction only). Additionally, as described above, some structures may require new spur roads for access. These new access routes would generally be permanent, since access would be required for future operations and maintenance activities.

Establishing Foundations. Once the work area has been prepared with the construction pads, tower foundations would be established. Monopole structures would require one foundation ranging from 4 feet to 10 feet in diameter and 15 feet to 50 feet in depth. Lattice structures would require four concrete foundations, each of which would be approximately 4 feet in diameter and 40 feet in depth. The total footprint for each lattice structure would be approximately 1,024 square feet (32 feet in width by 32 feet in length). Each foundation would protrude 0.5 feet to 4 feet above the ground line. In locations with extremely sandy soils, the soil may be stabilized using water or a gelling agent prior to excavating the holes, and steel casings may be used for the excavation. In locations with high groundwater levels, dewatering may be required to ensure a dry construction area during foundation drilling. Any construction dewatering would occur pursuant to the Regional Water Quality Control Board's Permit for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters. Excavated materials would generally be spread around the installation site. Following excavation of the foundation holes, each footing would be constructed by placing formwork, reinforcing steel, and a bolt ring or stub into the foundation hole (bolt rings are used for monopole structures and stubs are used for lattice towers). Next, the bolt ring or stub would be positioned and encased in concrete. Reinforcing steel cages would be assembled at the laydown areas and delivered to each installation site by flatbed truck. A typical foundation installation would require approximately 24 to 40 cubic yards of concrete. Concrete would be delivered by truck.

Assembling and Installing Monopoles. Each monopole transmission structure would consist of 3 to 4 tubular segments and arms that would be transported to installation sites by a flatbed truck or a heavy helicopter. At the site, the pole segments and arms would be assembled and bolted to the foundation by a crane or helicopter. Whether a crane or a helicopter is used would depend on the terrain and the site's proximity to other energized transmission lines. Structure installations are expected to be used for approximately 20 structure installations along three segments of the alignment: from proposed structure 4-2 through 5-2; from proposed structure 9-2 through 9-6; and from proposed structure 10-3 through 12-1. Segments 9-2 through 9-6 and 10-3 through 12-1 extend through an undeveloped, mountainous area between I-210 and SR-14. This area includes Whitney Canyon Park and Elsmere Canyon Open Space, and the Angeles National Forest boundaries are approximately 1,500 feet west from this area of

the alignment. The segment extending from structures 4-2 through 5-2 has some surrounding hillside residential developments. (As noted above, the locations where helicopters would be used for structure removal are currently unknown. However, they are expected to be similar in location and in nature to the structure installation sites that are anticipated to require helicopter use.)

Assembling and Installing Lattice Towers. Lattice transmission towers would be assembled at each site, then installed and bolted to the foundations. Bundles of steel members and associated parts would be transported to each installation site by truck. Steel members would be assembled into subsections of convenient size and weight on the ground. Assembly would be facilitated with a crane and/or helicopter. The assembled subsections would be erected into place by a crane or helicopter and then fastened together in the air to form a complete tower. As with the monopole installations, use of a crane or helicopter would depend on the terrain and the site's proximity to other energized transmission lines. The areas where helicopter installations are expected to occur are described above, under the description of monopole assembly and installation.

Conductor Stringing. Once the new transmission structures are in place, conductors would be strung between the structures. The alignment has been divided into approximately 21 stringing segments. Table 2-2 shows the segment numbers and key features of the landscape that the line would span over. See Appendix B for the full stringing plan.

Table 2-2. Conductor Stringing Segments

Stringing Segment	Major Crossings
S-1	--
S-2	--
S-3	String over Cooper Hill Drive
S-4	String over Bouquet Canyon Road
S-5	String over Golden Valley Road
S-6	String over Soledad Canyon Road, railroad, and Centre Pointe Parkway
S-7	String over Golden Valley Road
S-8	Traverses oil fields
S-9	--
S-10	SR-14 freeway crossing
S-11	Elsmere Canyon crossing
S-12	--
S-13	--
S-14	String under LADWP's 500 kV lines
S-15	I-210 freeway crossing
S-16	--
S-17	--
S-18	String over San Fernando Road and railroad
S-19	--
S-20	I-5 freeway crossing
S-21	--

Source: Appendix B.

Conductor stringing activities would be staged from the stringing pads established in the site preparation phase. The crane and man lift pads that were constructed at the transmission structure installation sites would also be used for staging of conductor stringing activities.

The process of conductor stringing involves multiple steps. First, the materials required for conductor stringing would be delivered to each work area. Materials would include insulators, the conductor, shield wire, hardware, and stringing sheaves. Transmission structures would then be rigged with insulator strings and stringing sheaves at each ground wire and conductor position. (Sheaves are rollers that are temporarily attached to the lower end of the insulators to allow the conductor to be pulled, or strung, along the line.) Pilot lines would then be strung between transmission structures by a medium-duty helicopter and threaded through the stringing sheaves at each tower location. The pilot line enables stringing of a "pulling line," which is stronger and larger in diameter relative to the pilot line. The pilot line can also be used to pull in the ground wire. The pulling line would then be attached to the conductors and used to pull them onto the transmission structures. This process would be repeated until the ground wire or conductor is pulled through all sheaves. Bundled conductors would be pulled together with the assistance of a running board, which attaches the bundled conductor to the pulling line. Ground wire and conductors would be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end of a conductor segment. After installing the conductor ground wire, sagging, clipping, and dead-ending activities would be performed. This process would involve adjusting the position of the conductors and shield wires, removing stringing sheaves, and permanently attaching the conductor to the insulators with specialized hardware.

For public protection during the wire installation process, temporary guard structures may be built at major freeway crossings, railroad crossings, major transmission line crossings, and major highway and distribution crossings, as necessary. Guard structures would consist of H-frame poles placed on either side of the obstacle. These structures would prevent ground wire, conductor, or equipment from falling on a freeway, another transmission line, or other obstacle. The guard structures would be left in place until conductors and ground wires are strung, tensioned, and clipped. Guard structures may not be necessary for small roads. In those cases, other safety measures such as barriers, construction workers with flags, or other traffic control measures would be used. During construction activities that could affect the hiking trails in Whitney Canyon Park and Elsmere Canyon Open Space, the affected trails would be temporarily closed. Warning signs would be placed on the trail, and construction workers may be stationed near the trail to ensure that the public does not enter the temporarily blocked areas, thereby increasing the distance between recreationists and construction activities, including helicopter maneuvers.

Counterpoise Installation and Grounding Practices. Part of standard construction practice prior to wire installation would involve measuring the resistance of tower footings and installing counterpoise (grounds) as needed. To determine whether a tower requires counterpoise, ground resistance measurements would be taken at tower sites after the foundations and tower structures are installed. These measurements would be evaluated to determine the number and location of any tower structures requiring counterpoise. If the resistance to remote earth for each transmission structure is greater than 30 ohms, counterpoise (grounds) would be installed to lower the resistance to 30 ohms or less. Grounding wires would be strung along the top of the transmission structures.

In addition to counterpoise installation, standard grounding practices during construction would be completed as necessary.

Switching Station Tie-Ins and Upgrades

The proposed transmission line would extend between the Sylmar Switching Station and the Haskell Canyon Switching Station. At each switching station, the new line would be connected to the switching station through dedicated station structures within the switching station, commonly referred to as "buses." Upgrades at the Sylmar Switching Station would be required for the new line. Upgrades would involve installation of new high voltage electrical equipment supported by reinforced concrete foundations. (These foundations may either be shallow spread foundations or deep pile foundations, depending on the soil parameters.) Construction of the new foundations would require excavation and soil compaction. At the Olive Switching Station, the existing conductors for the 115 kV line would be removed. No other work would occur at that switching station.

Site Rehabilitation

Site rehabilitation activities would be undertaken to return the construction areas to their original condition to the extent feasible. Laydown areas, stringing pads, temporary access routes, and temporary work pads would be rehabilitated. Additionally, tower removal sites would be rehabilitated where they do not coincide with the new tower sites. During grading, the top 6 inches of topsoil would be salvaged and stockpiled, along with the native vegetation. The topsoil would be re-applied to the surface of the fill. Areas that are being rehabilitated would also be re-contoured to natural grade (if the grade was modified during the temporary disturbance activity), and revegetated with native species, as appropriate. Revegetation may occur with container plants, cuttings from native species, or with an application of a native seed mix. Whenever possible, revegetation would occur prior to or during seasonal rains to promote passive restoration of the area to pre-project conditions (except that no invasive plants would be restored). Prior to seeding temporary ground-disturbance areas, a biologist knowledgeable in local plant species and ecology would review the seeding palette to ensure the plant palette is appropriate for the project site and that no seeding of invasive plant species, as identified in the most recent version of the California Invasive Plant Inventory for the region would occur.

2.8 Operations and Maintenance

Regular inspection and maintenance of overhead facilities is crucial for maintaining uniform, adequate, safe, and reliable service. As with the existing 115 kV line, the 230 kV transmission line would be inspected several times annually by both ground and air patrols. Maintenance would be performed as needed. When access would be required for non-emergency maintenance and repairs, LADWP would adhere to the same precautions and procedures that were taken during construction in order to minimize ground disturbance, noise, and safety hazards to the extent practicable.

Emergency Maintenance Activities

Under existing conditions, emergency maintenance activities are performed as necessary for the existing 115 kV line. Such maintenance activities could also be required for the new line, as necessary. As with existing conditions, emergency maintenance would involve prompt movement of maintenance crews to repair or replace any damaged equipment or infrastructure. Crews would be instructed to protect plants, wildlife, and other resources of significance. Restoration procedures following completion of repair work would be similar to those prescribed for normal construction activities. Effects to nearby sensitive receptors, such as residents, would continue to be minimized by limiting noise, dust, and vehicle traffic. No change in emergency maintenance activities or procedures would occur relative to existing conditions.

Vegetation Management

Vegetation management is required along transmission line right-of-ways by the North American Electric Reliability Corporation (NERC), California Public Utilities Commission General Order 95, the Los Angeles County Fire Code, California Public Resources Code (Sections 4292-4296), and the California Code of Regulations (Title 14, Article 4, Sections 1250-1256). As such, vegetation management is currently conducted along the project alignment and would continue to be carried out during operation of the new 230 kV line. An upgrade from 115 kV to 230 kV would not require additional clearances other than those that are currently being maintained along the alignment. In compliance with NERC's Standard FAC-003-1, LADWP has a Vegetation Management Plan for the transmission corridor. After project implementation, vegetation management would continue to occur pursuant to this plan. Vegetation management consists of routine tree trimming to maintain the required minimum 10-foot clearance from conductors to vegetation that is required by California Public Resources Code Section 4293, clearance of flammable vegetation within a 10-foot radius around the base of transmission structures in accordance with California Public Resources Code Section 4292, and clearance immediately adjacent to access roads to permit adequate access to the facilities.

Access Road Maintenance

Ongoing access road maintenance would be conducted in accordance with existing road authorizations issued to LADWP. Access road maintenance would consist of those activities necessary to allow continued access to the right-of-way and/or each tower structure. These activities may include grading and maintenance of drainage systems, bridges, culverts, fences, gates, and signs. Motor graders, backhoes, dump trucks, and pickups are used to maintain access roads. Access road maintenance would occur in a manner generally consistent with existing access road maintenance activities that are conducted along the transmission corridor.

Safety Practices

The new transmission line would be protected with power circuit breakers and related line replay protection equipment. If conductor failure occurs, power would be automatically removed from the line. Lightning protection would be provided by overhead ground wires along the line. Electrical equipment and fencing at the switching stations would be grounded.

2.9 Intended Uses of this EIR

An EIR is a public document used by a public agency to analyze the potential environmental effects of a project and to disclose possible ways to reduce or avoid potentially significant environmental impacts, including alternatives to the proposed project. As an informational document, an EIR does not make recommendations for or against approving a project. The main purpose of an EIR is to inform public agency decision makers and the public about potential environmental impacts of the project (CEQA Guidelines Section 15121). This EIR will be used by LADWP, as the lead agency under CEQA, in making decisions with regard to the proposed project described above and the related approvals described below in Section 2.10.

2.10 Permits and Approvals Required for the Project

LADWP is the lead agency for the proposed project pursuant to CEQA Guidelines Section 15367. The proposed project would require the following discretionary approval from LADWP:

- Certification of this EIR by the City of Los Angeles Board of Water and Power Commissioners with a finding that it complies with CEQA.

Approvals from other regulatory agencies may also be required, which are listed below. These agencies may use the information in this EIR if their approvals require CEQA or National Environmental Policy Act (NEPA) compliance. Agencies that LADWP would coordinate with before, during, and after construction are also included in this list.

Federal

- U.S. Army Corps of Engineers, Clean Water Act Section 404 Permit (individual or Nationwide) (proposed project may include discharge of dredged or fill materials into Waters of the United States and/or wetlands)
- Federal Highway Administration Permit to cross a Federal Aid Highway (proposed construction and operation may occur across or within federal highway rights-of-way)

State

- California Department of Fish and Wildlife Streambed Alteration Agreement (proposed construction may involve the alteration of a river, stream, or lake)
- California Department of Transportation encroachment permits and transportation permits (proposed construction and operation may occur across or within state highway rights-of-way; construction may require the transport of oversized vehicles on state highways)
- State Water Resources Control Board, Federal Clean Water Act Section 401 Water Quality Certification (proposed project may result in discharge of dredged or fill materials into waters of the state)
- State Water Resources Control Board, Notice of Intent to comply with the General Construction Activity National Pollutant Discharge Elimination System (NPDES) Permit, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ, NPDES No. CAS000002 (proposed construction may involve storm water discharges to surface waters of the state)

- Los Angeles Regional Water Quality Control Board, Notice of Intent to comply with the Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters, Order No. R4-2018-0125, NPDES No. CAG994004 (proposed construction may involve temporary dewatering of groundwater and discharges of the groundwater)

Local

- Roadway encroachment permits from local jurisdictions (City of Los Angeles, County of Los Angeles, and City of Santa Clarita)
- Coordination with the Sanitation Districts of Los Angeles County for the protection of the district's facilities during project construction and operation
- Coordination/notification of road closures, lane closures, and lane realignments prior to and during construction and provision of plans for detour routes, if necessary (City of Santa Clarita, Los Angeles County Fire Department, Los Angeles County Sheriff's Department)
- Coordination for implementation of traffic and transportation mitigation measures (City of Santa Clarita, Los Angeles County Fire Department, Los Angeles County Sheriff's Department)

2.11 References

City of Los Angeles. 2015. Sustainable City Plan. April. Accessed May 11, 2018. https://www.lamayor.org/sites/g/files/wph446/f/landing_pages/files/The%20pLAn.pdf.

LADWP (Los Angeles Department of Water and Power). 2017. *Final Power Strategic Long-Term Resource Plan*. December 2017. Approved April 2018. Accessed May 11, 2018. https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-integratedresourceplanning/a-p-irp-documents?_afrWindowId=ekj0maixt_1&_afrLoop=221452265329147&_afrWindowMode=0&_adf.ctrl-state=ekj0maixt_4.

SOURCE: Esri Basemaps

Los Angeles Department of Water & Power

0 2.5 5 Miles

FIGURE 2-1

Regional Map

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

Southern portion of the alignment, where the alignment crosses open space areas in unincorporated Los Angeles County.

Center portion of the alignment, where the alignment crosses an industrial area in the City of Santa Clarita, just south of the Santa Clara River.

Northern portion of the alignment, where the alignment crosses a single-family residential neighborhood in the City of Santa Clarita, north of Bouquet Canyon Road.

Northern portion of the alignment, where the alignment extends from open space to a single-family residential neighborhood in unincorporated Los Angeles County, north of the City of Santa Clarita.

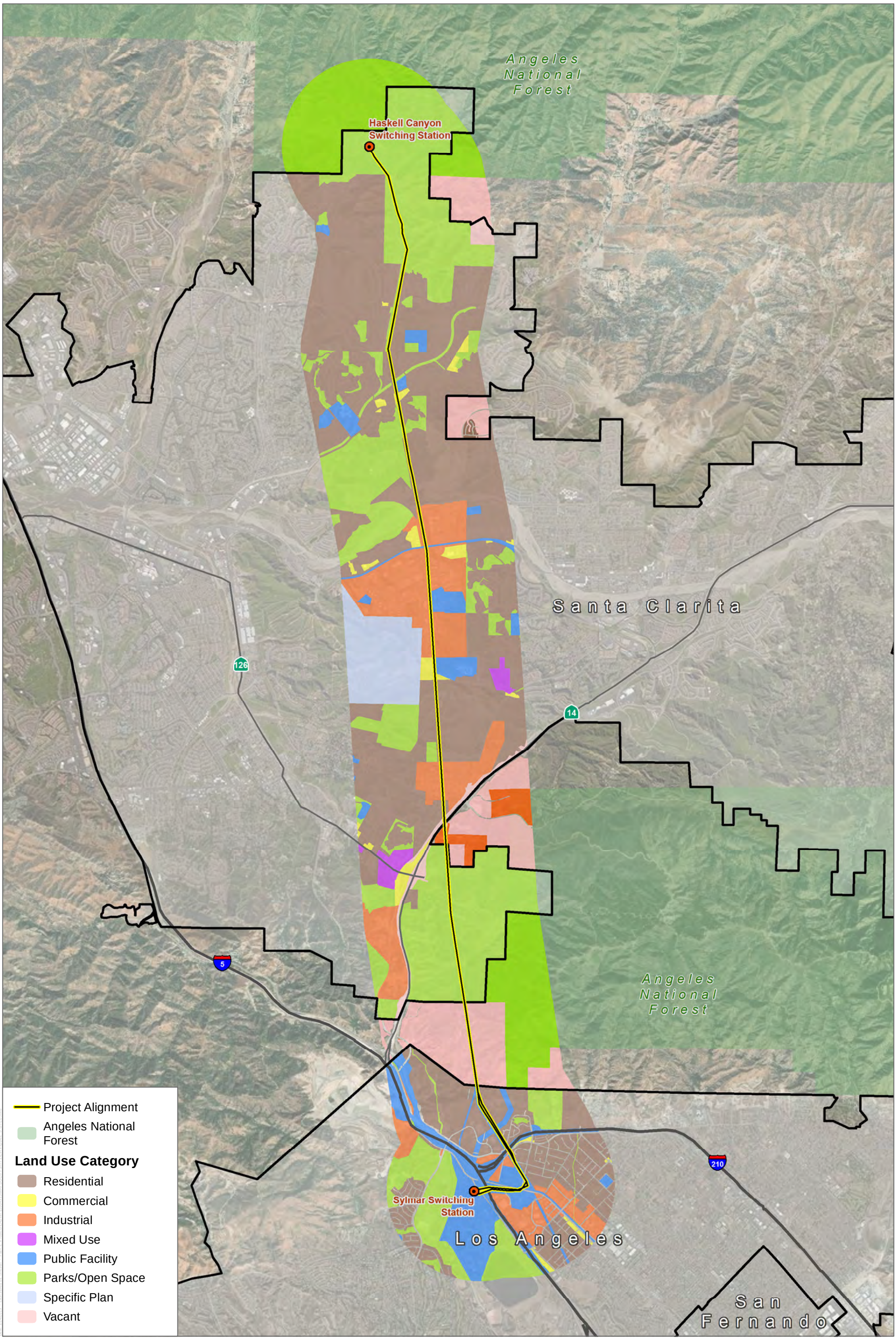
Los Angeles Department of Water & Power

FIGURE 2-2

Representative Views along the Project Alignment

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK



SOURCE: Bing Maps (Accessed 2017); Los Angeles County (2017); City of Santa Clarita (2017)

LA DWP Los Angeles Department of Water & Power

0 0.5 1 Miles

FIGURE 2-3

General Plan Land Use

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

3 ENVIRONMENTAL ANALYSIS

The following sections contain an analysis, by issue area, of the potentially significant environmental effects of the proposed project. Also included is an informational section on electric and magnetic fields. The issue areas analyzed in this chapter are as follows:

- Aesthetics (Chapter 3.1)
- Air Quality (Chapter 3.2)
- Biological Resources (Chapter 3.3)
- Cultural Resources (Chapter 3.4)
- Geology and Soils (Chapter 3.5)
- Greenhouse Gas Emissions (Chapter 3.6)
- Noise (Chapter 3.7)
- Transportation and Traffic (Chapter 3.8)
- Tribal Cultural Resources (Chapter 3.9)
- Energy (Chapter 3.10)
- Electric and Magnetic Fields (Chapter 3.11)

The discussions of each environmental issue area generally include the following subsections:

- Existing Conditions
- Relevant Plans, Policies, and Ordinances
- Thresholds of Significance
- Methodology
- Impact Analysis
- Mitigation Measures
- Level of Significance after Mitigation
- References Cited

As stated in the Initial Study (see Appendix A), it was found that the proposed project would have no impact, less than significant impacts, or less than significant impacts with mitigation incorporated relative to the following environmental issue areas. For these issue areas, the analysis in the Initial Study concluded that no further detailed analysis is required in the EIR.

- Agriculture and Forestry Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

INTENTIONALLY LEFT BLANK

3.1 Aesthetics

This section describes the aesthetic and visual resources present in the project area; discusses applicable federal, state, and regional regulations pertaining to aesthetics and visual resources; and evaluates the potential effects on existing views and visual character and quality associated with development of the proposed project.

Comments received in response to the Notice of Preparation (see Appendix A) included concerns regarding the potential visual effects of the new transmission towers. Specifically, the City of Santa Clarita expressed concerns regarding visual impacts of the towers as observed from residential areas and public rights-of-way. The City of Santa Clarita requested site-by-site analysis for each structure removal and installation, as well as visual simulations from the nearest residential use and/or public right-of-way for each structure site to demonstrate potential visual impacts.

Information contained in this section is based on observation made during a field investigation of the project area conducted by Dudek on June 27, 2018. Other documentation used in this analysis included maps of project components and satellite imagery and aerial photography of the project area available from Google Earth. In addition, information on viewer groups in the project area, including recreationists, was gathered through review of the County of Los Angeles Department of Parks and Recreation interactive trails map and website (https://trails.lacounty.gov/), the United States Forest Service (USFS) publically accessible interactive visitor map (https://www.fs.fed.us/ivm/index.html), the City of Santa Clarita Trails and Parks Map (City of Santa Clarita 2016a) and the City of Santa Clarita Master Plan of Trails (City of Santa Clarita 2016b). Other sources consulted for the analysis and background in this section are listed in Section 3.1.8.

3.1.1 Existing Conditions

This section describes the existing conditions in the project area and identifies the resources that could be affected by the proposed project.

Regional Setting

The project area is situated in the northwestern portion of Los Angeles County and generally straddles the San Gabriel Mountains, the Santa Clara River Valley, and the Sierra Pelona Mountains (see Figure 2-1). The southern terminus of the alignment is located within the San Fernando Valley and parallels Grapevine Canyon. The alignment then crosses the Elsmere, Whitney, and Placerita Canyons, extending through the San Gabriel Mountains and then descending into the Santa Clara River Valley, where it crosses neighborhoods, undeveloped hilly areas, and commercial areas within the City of Santa Clarita. The alignment then crosses the Santa Clara River and then ascends through hillside neighborhoods before ascending north through an undeveloped, hilly area within Haskell Canyon. The alignment terminates just outside of the Angeles National Forest boundary. Elevations along the alignment range from approximately 1,300 feet above mean sea level (amsl) along the Santa Clara River to approximately 2,320 feet amsl in the hillside regions of the project area. The location of the alignment in relation to nearby communities and local terrain is illustrated in Figure 2-3.

Local Setting

The project alignment extends from the existing Sylmar Switching Station in the south to the existing Haskell Canyon Switching Station in the north. The southern extent of the alignment is located within the Granada Hills–Knollwood Community Plan area within the City of Los Angeles, immediately west of Interstate (I-) 5, near the interchange of I-5 and I-210 and approximately 825 feet south-southeast of the intersection of San Fernando Road and Sepulveda Boulevard. The alignment then extends east for approximately 0.6-mile, spanning I-5 and entering the Sylmar Community Plan area within the City of Los Angeles, paralleling San Fernando Road. A series of transmission lines span the interstate and the alignment follows an existing transmission corridor occupied by tall and geometric lattice steel towers range in height from 54 feet to 156 feet. East of I-5 the alignment traverses disturbed lands bordered by a large, two- to three-story concrete tilt-up industrial warehouse and electrical power plant to the south and the Sylmar Juvenile Courthouse complex to the north (across San Fernando Road). The alignment then turns north, crossing San Fernando Road, and borders the courthouse complex and industrial warehouse on the west and single-family residential and mobile home development on the east (see Figure 3.1-1, Photos A and B). Shortly thereafter, the alignment crosses I-210. North of I-210, the local terrain begins to increase in elevation and the alignment (and existing corridor) are situated between several large industrial warehouses, a riparian corridor, and several two-story multi-family residential buildings on the west and a relatively small single-family residential neighborhood off Filbert Street and disturbed yet undeveloped foothill lands on the east. Photo C on Figure 3.1-1 presents an existing view towards the project alignment from Filbert Street.

To the north of Sylmar, the alignment (and existing corridor) exit the City of Los Angeles boundary, entering unincorporated areas of Los Angeles County (County) and traversing undeveloped mountainous terrain in the San Gabriel Mountains. This approximately three-mile-long segment of the alignment extends north–south, with State Route (SR) 14 to the west of the alignment and the Angeles National Forest boundary to the east of the alignment. This area is comprised of rugged, hilly terrain. Next, the alignment descends into the Santa Clara River basin in the City of Santa Clarita, spanning City of Santa Clarita trails in Elsmere Canyon and Whitney Canyon. The alignment would be located approximately 0.2 mile east of the Whitney Canyon Park parking lot, near the intersection of Newhall Avenue and Wager Road; see Photo D in Figure 3.1-1. From here, the alignment extends through the City of Santa Clarita for approximately 7 miles, crossing hilly terrain and SR 14, passing industrial facilities and operations, industrial offices, warehouses, testing facilities, the wide Santa Clara River floodplain, commercial areas, and recreational facilities. Industrial areas that are traversed by the project alignment include the Placerita Oil Field, which consists of disturbance in valley bottoms and on hillsides located west of SR 14, north of Placerita Canyon Road, and south of Golden Valley Road. Recreational resources near this portion of the alignment include the Santa Clarita Aquatics Center and adjacent park (located east of Golden Valley Road and Centre Point Parkway). Figure 3.1-2 illustrates the existing visual setting of the transmission line alignment and nearby land uses near the portion of the alignment north of Whitney Canyon Park and south of the Santa Clara River. North of the Santa Clara River and Newhall Ranch Road, the alignment and corridor climb hilly terrain and border primarily undeveloped hills and canyons, a ridgetop solar facility, single-family residential neighborhoods, commercial development, and school development. Photos I and J in Figure 3.1-3 illustrate residential and commercial development adjacent to the corridor in this area of the alignment. North of Altena Drive and near Bouquet Canyon Park, the alignment extends for

approximately 2 miles through an area featuring primarily undeveloped and hilly terrain, the Haskell Canyon Wash, single-family residential neighborhoods, neighborhood parks (including Copper Hill Park), and primarily undeveloped hillside areas in Haskell Canyon. See Photos K and L in Figure 3.1-3 for representative images of this area of the alignment. The Haskell Canyon Open Space area is located in this area, to the north of Copper Hill Drive and east of High Ridge Drive. Existing lattice steel structures in the corridor are visible from both canyon and ridgeline trails in this area. The alignment then terminates at the Haskell Canyon Switching Station, which is located just south of the Angeles National Forest. The closest segment of nearest known trail in the Angeles National Forest, Del Sur Ridge, is located approximately 1.15 mile to the west of the Haskell Canyon Switching Station.

Scenic Vistas

For purposes of this analysis, scenic vistas are defined as views observable from locations that provide opportunities for particularly long and broad views of the surrounding landscape. Due to the presence of numerous canyons and hilly/mountainous terrain, elevated vantage points are available within the project area and provide opportunities for long and broad views to receptors, including recreationists (primarily hikers) and motorists. For example, ridgeline trails or trails on rising terrain within local and publically accessible open space areas provide trail-based recreationists opportunities for long views of the surrounding landscape. More specifically, higher elevation trails within Whitney Canyon Park, Quigley Canyon Open Space, and Haskell Canyon Open Space (City of Santa Clarita 2016a, 2016b) provide elevated vantage points from which trail-based recreationists can experience the surrounding valley and mountainous terrain. These local parks are generally traversed by or located near existing transmission line corridors that feature multiple transmission lines, structures, and access roads. Figure 3.1-4 shows photographs of representative views from trails within the Haskell Canyon Open Space area and Whitney Canyon Park.

Light and Glare

The transmission corridor primarily traverses a developed, urban, and suburban environment, with the exception of the portions of the corridor that extend through undeveloped, mountainous areas. Existing sources of light in the project area are therefore associated with urban and suburban development, including light emanating from building interiors and from exterior mounted fixtures, street lights, architectural building illumination, parking lot lights, landscape lighting, and business signage. Where the existing alignment traverses hilly and mountainous terrain, there are few sources of light, if any. Due to the elevation of the San Gabriel Mountains and the tall scale of existing transmission line support structures, obstruction/aviation warning lights may be installed on structures.

In addition to sources of lighting described above, potential sources of glare in the project area include existing steel lattice towers and transmission and distribution conductors. The conductor installed along the approximate 12-mile-long segment of the existing 115 kV transmission line consists of non-specular conductor. The existing transmission line and others located in the corridor are supported by lattice steel structures which, along with the conductor, are considered a potential source of daytime glare.

3.1.2 Relevant Plans, Policies, and Ordinances

City of Los Angeles General Plan

The Conservation Element of the City of Los Angeles General Plan (City of Los Angeles 2001) provides objectives, policies, and programs regarding aesthetics including the following:

Land Form and Scenic Vista Objective
Protect and reinforce natural and scenic vistas as irreplaceable resources and for the aesthetic enjoyment of present and future generations.

Land Form and Scenic Vista Policy
Continue to encourage and/or require property owners to develop their properties in a manner that will, to the greatest extent practical, retain significant existing land forms (e.g., ridge lines, bluffs, unique geologic features) and unique scenic features (historic, ocean, mountains, unique natural features) and/or make possible public view or other access to unique features or scenic views.

County of Los Angeles General Plan 2035

As depicted on Figure 2-3, portions of the project alignment traverse unincorporated County of Los Angeles lands. Therefore, the County of Los Angeles General Plan 2035 (County of Los Angeles 2015) is a relevant plan for those portions of the alignment. The Conservation and Natural Resources Element provides objectives, policies, and programs regarding aesthetics including the following:

Policy C/NR-13.1
Protect scenic resources through land use regulations that mitigate development impacts.

Policy C/NR-13.2
Protect ridgelines from incompatible development that diminishes their scenic value.

Policy C/NR-13.4
Encourage developments to be designed to create a consistent visual relationship with the natural terrain and vegetation.

City of Santa Clarita General Plan

The Conservation and Open Space Element of the City of Santa Clarita General Plan identifies aesthetic resources including significant ridgelines, hillsides, and canyons (including Whitney, Elsmere, and Placerita canyons) and includes maps of open space resources and trails. In addition, the Conservation and Open Space Element (City of Santa Clarita 2011) provides objectives, policies, and programs regarding aesthetics including the following:

Objective CO-6.1
Protect the scenic character of local topographic features.

Policy CO-6.1.1
Protect scenic canyons, as described in Part I of this element, from overdevelopment and environmental degradation

Policy CO-6.1.2
Preserve significant ridgelines, as shown on the Exhibit CO-7, as a scenic backdrop throughout the community by maintaining natural grades and vegetation.

Objective CO-6.2
Protect the scenic character of view corridors.

Objective CO-6.5
Maintain the scenic character of designated routes, gateways, and vista points along roadways.

Policy CO-6.5.1
In approving new development projects, consider scenic views at major entry points to the Santa Clarita Valley, including gateways located at the Newhall Pass along Lake Hughes Road, SR 126, Bouquet Canyon Road, Sierra Highway, SR 14, and other locations as deemed appropriate by the reviewing authority.

Policy CO-6.6.5
Encourage undergrounding of all new utility lines, and promote undergrounding of existing lines where feasible and practicable.

3.1.3 Thresholds of Significance

The significance criteria used to evaluate impacts on aesthetics are based on Appendix G of the CEQA Guidelines. Through the analysis in the Initial Study (see Appendix A), it was determined that the proposed project would not substantially damage scenic resources within a state scenic highway (i.e., Threshold B). As such, this issue is not further analyzed in the EIR. Based on the remaining thresholds, implementation of the proposed project would have a significant impact related to aesthetics if it would:

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

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

D. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.1.4 Methodology

The project setting was developed by reviewing available information on aesthetics and visual resources in the project vicinity. This review was supplemented with an aesthetics field investigation conducted by Dudek on June 27, 2018. Prior to the field investigation, Dudek reviewed maps of project components and used satellite imagery and aerial photography to identify photograph locations of the project site and surrounding area. Photographs from the project area were taken from public roads, local trails, parks, and bike paths. Photographs were not taken from private

properties (such as residences), as effects on private views are not considered impacts on the environment generally under CEQA. However, the photographs taken from public locations show views similar to those experienced from nearby private properties, due to the proximity of the public locations to nearby private properties. As such, while this analysis does not address private views (per CEQA), the images and description of effects from several representative public vantage points are also generally indicative of how the project would be visually experienced from private properties near the alignment.

Once the field investigation was complete, Dudek reviewed field photographs and selected three key observation points (KOPs) from which to evaluate the potential effects of the project and prepare three-dimensional (3-D) photographic simulations to depict the project and potential visual change to the landscape. KOPs are representative views of the project that reflect the type of views available to primary viewer groups that would be potentially affected by the project. As such, the visual simulations at the selected KOPs are representative of visual effects that would occur along the entirety of the alignment. KOPs were established at the following three locations. The locations are shown on Figure 3.1-5.

- **KOP 1:** Copper Hill Park (Santa Clarita)
- **KOP 2:** Golden Valley Road/Newhall Ranch Road (Santa Clarita)
- **KOP 3:** Filbert Road (Sylmar)

Photographic simulations that depict the project and potential visual changes to the landscape were created from three KOPs. The simulations were used to illustrate the level of contrast associated with implementation of the project and to help determine the significance of anticipated visual change as it relates to views from scenic vistas and existing visual character and quality. The simulations include existing site photographs as background images and true-scale 3-D models for the proposed facilities rendered onto the existing photographs. The photographs were taken during the June 2018 field visit from the three KOPs. The new structures would be standard galvanized steel, consistent with the existing transmission structures within the corridor. The new structures would appear polished upon initial installation but would fade to grey over time.

3.1.5 Impact Analysis

Threshold A: Would the project have a substantial adverse effect on a scenic vista?

As detailed in Section 3.1.1, opportunities for particularly long and broad scenic views of the Santa Clarita Valley are available in the project area primarily because of the regular occurrence of hilly terrain and publically accessible trails atop rising and elevated terrain in open space parks. Specifically, views from trails atop elevated terrain in Whitney Canyon Park, Quigley Canyon Open Space, and Haskell Canyon Open Space were identified as scenic vistas providing views of the surrounding landscape including the project alignment. While vantage points within these open space parks provide opportunities for scenic vistas, the transmission corridor in which new transmission line structures would be installed currently supports multiple steel lattice structures supporting multiple transmission lines traversing the Santa Clarita Valley. For example, existing transmission structures are visible in northerly views from

trails within Whitney Canyon Park (see Figure 3.1-4) and while new transmission structures would display a greater scale and a narrower form, new structures generally would be located where existing structures are currently located in the landscape. In addition, new structures would not obstruct scenic features from view and would not substantially interrupt the existing view of the chaparral and non-native grasslands covering the canyon terrain. Also, while views to the north extend to distant mountain ridgelines in the background viewing distance (see upper left corner of Whitney Canyon Park photo; Figure 3.1-4), longer and broad views of the Santa Clarita Valley stretching to mountainous terrain to the west of Castaic are available to the west and northwest. Therefore, the visual effects of the project and transmission line and support structures would be visible from trails within Whitney Canyon Park but would not substantially affect available long and broad views from the park and higher elevation trails in the adjacent Angeles National Forest. Similar visual effects are anticipated from ridgeline trails located west of the project alignment in the Quigley Canyon Open Space Park.

As viewed from higher elevation ridgeline trails in Haskell Canyon Open Space Park, the project would have little to no effect on the quality of existing scenic views. An existing westerly view from a ridgeline trail in Haskell Open Space Park is included on Figure 3.1-4. As depicted in Figure 3.1-4, the elevated vantage point of the trail creates a superior viewing angle to nearby terrain and development. The project alignment is located approximately 0.60 mile away from the trail location illustrated in Figure 3.1-4, and existing transmission line structures are visible from this location. While the removal of semi-transparent steel lattice structures and installation of taller and solid monopoles may increase the visibility of individual transmission structures, transmission infrastructure is not visually prominent in the existing view and would not be prominent following project implementation. New transmission structures would display thin vertical lines that would be taller than nearby residential development but would not rise above the ridgelines of local hills. Given the broad nature of the available view, new transmission structures would occupy a relatively small portion of the visible landscape and would not be elements that recreationists or other groups would focus on. Rather, the length of the available and distant mountain terrain would continue to be the valued and noticeable features of views from higher elevation trails in Haskell Canyon Open Space Park. Further, because new transmission structures and lines would be relatively low in the landscape as viewed from elevated vantage points on ridgeline trails, the project would not have a substantial adverse effect on a scenic vista within the Haskell Canyon Open Space Park.

The proposed project would also involve equipment upgrades at the Sylmar Switching Station and tie-ins of the new transmission line at the Sylmar and Haskell Canyon switching stations, within the existing footprints of each station. Neither switching station is expected to be prominently visible from any of the scenic vistas. Both switching stations currently appear industrial in nature and contain clusters of electrical equipment. The stations would remain similar in appearance with or without the proposed project. Due to the distance from the scenic vistas and the minor changes in appearance that would occur at the switching stations, scenic vistas would not be adversely affected by the proposed switching station tie-ins and upgrades. For these reasons, impacts would be **less than significant.**

Threshold C: Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

The new transmission structures and other project features would be experienced alongside existing transmission lines, structures, and access roads. As stated in Section 3.1.1, the proposed 230 kV transmission line and structures (primarily monopoles but also lattice towers where necessary) would be located within an established transmission corridor that primarily traverses a developed, urban, and suburban environment that includes the northern portion of Sylmar and the City of Santa Clarita. The corridor borders single-family residential neighborhoods, vegetated washes, and developed and undeveloped hillsides. National forest lands covered with chaparral vegetation and crossed by trails and access roads are also located within the vicinity of the corridor.

As proposed, the new support structures to be installed within the existing transmission corridor would range in height from approximately 100 feet to 200 feet. The proposed 230 kV line would be located within the same transmission line corridor as the existing 115 kV line. The existing 115 kV line is supported by approximately 85 lattice transmission towers with heights ranging from 54 feet to 156 feet. The project would reduce the overall number of support structures used for the transmission line and would replace most of the existing structures with monopoles. Further, the majority of the existing poles to be replaced are steel lattice structures. In contrast to the tall, geometric, and angular form of steel lattice structures, monopoles display a tall, straight, and solid form that would be noticeably thinner than the relatively wide structures that currently support the 115 kV line. Because the majority of existing structures consist of steel lattice towers and the maximum height of new structures would be greater than existing structures, slight contrasts in form and scale would be noticeable to local areas viewers including residents, motorists, and recreationists. Despite the anticipated level of contrast between existing and proposed support structures, relatively weak effects to existing visual character and quality are anticipated, as the project proposes to replace existing structures within an established transmission line corridor that supports multiple tall transmission facilities and is an established use in the visual environment. Furthermore, as stated in Section 3.1.4, the proposed structures would be standard galvanized steel, similar to the other structures within the corridor and throughout the project area. Initially, the structures would look new and more polished in contrast to the existing structures. However, after several years, the structures would become weathered and the color would fade to dull grey, becoming similar in color and reflectivity to the other structures along the alignment. As such, any contrasts in color between the new structures and the existing structures would be temporary.

To aid in the determination of visual change, three KOPs were selected from which to assess effects to visual character or quality resulting from removal of the existing 115 kV line and installation of the proposed 230 kV line and support structures. The KOPs are representative and publically accessible viewpoints along the project alignment that provide views to the project. Further, the KOPs provide representative views to the project alignment that may be experienced by the primary viewer groups in the local area including recreationists, residents, and motorists. The locations of the three KOPs chosen for the analysis are identified in Figure 3.1-5, and the views that can be experienced from each KOP are described in the subsections below.

KOP 1: Copper Hill Park (Santa Clarita)

Located near the northern extent of the 12-mile-long alignment and within the City of Santa Clarita, KOP 1 provides a representative view of the project alignment to recreationists (i.e., park users) and residents and visitors traveling along nearby residential roadways. Copper Hill Park is located off Copper Hill Drive and features an open turf area that is bordered by a meandering pedestrian path. Mature and juvenile trees are scattered along the path and to the north and south of the park's small parking lot. The park sits on a slightly elevated pad at the base of manufactured slopes to the east and south, and the local terrain gradually descends to the north and west. At its closest location, the park's pedestrian path is located approximately 460 feet east of the project alignment. As viewed from the park, multiple existing support structures (lattice steel towers) are visible to the southwest, west, and northwest as the corridor abuts residential land uses located to the west and east of the Haskell Canyon Wash. Figure 3.1-6A provides a representative view to the project alignment from Copper Hill Park. As viewed from KOP 1, existing transmission structures are partially screened by park landscaping and are backscreened by hilly terrain development with single-family residences and landscaping. The steel lattice structure closest to KOP 1 is visually prominent, as it is located central to the view and the upper portions of the structure rise above the distant ridgeline to be skylined (i.e., the structure is viewed against the background sky). A visual simulation of the project as viewed from Copper Hill Park is provided on Figure 3.1-6B.

KOP 2: Golden Valley Road at the Santa Clara River (Santa Clarita)

KOP 2 is representative of views to the project alignment available to southbound motorists on Golden Valley Road over the segment of the road spanning the Santa Clara River. Within the City of Santa Clarita, the project alignment generally parallels Golden Valley Road north of Soledad Canyon Road, through the Santa Clara River floodplain and to its confluence with Newhall Ranch Road. At Newhall Ranch Road, Golden Valley Road extends to the east and runs to Whites Canyon Road. A representative view to the project alignment from Golden Valley Road is provided on Figure 3.1-7A. As viewed from KOP 2, the project alignment is located approximately 700 feet to the southeast and several tall, greyish steel lattice structures and numerous thin conductor lines strung between the support structures are visible. Further, as viewed from KOP 2, structures and lines within the corridor rise above the greyish ridgelines of distant mountains. A visual simulation of the project as viewed from KOP 2 is provided on Figure 3.1-7B.

KOP 3: Filbert Street (Sylmar)

Situated north of I-210 and within a single-family residential neighborhood of Sylmar, KOP 3 provides a representative view to the project alignment available to residential viewer groups. As stated in Section 3.1.1, the existing transmission line corridor occasionally borders residential land uses in Sylmar and regularly borders residential neighborhoods north of Golden Valley Road to Haskell Canyon in the City of Santa Clarita. An existing view to the southwest along Filbert Street and toward the project alignment is provided in Figure 3.1-8A. This image is generally representative of views to the project alignment from residential roadways in the project area. As noted in Section 3.1.4, views from private properties (such as residences) are not addressed under CEQA. However, public roadways extending through residential neighborhoods would provide public views to the alignment that would typically be experienced by residential viewer groups. As shown on Figure 3.1-8A, KOP 3 is located on a gradually rising hill

(elevation at KOP 3 is approximately 1,405 feet amsl) and the foreground is characterized by residential lots featuring two-story homes with light colored exteriors and roofs, abruptly sloping front yards covered with turf, private landscaping (shrubs and trees), and street trees. Beyond the homes, several tall steel lattice towers traverse the visible landscape and are visible above distant hills and ridgelines. At KOP 3, the nearest (and tallest) of the visible steel lattice structures is located approximately 0.25 mile away. A visual simulation of the project as viewed from KOP 3 is provided on Figure 3.1-8B.

Analysis

As proposed, the 12-mile project alignment traverses industrial, residential, and commercially developed areas, hillsides, local roads, a state highway, and an interstate highway. Once constructed, the proposed project would be visible to viewer groups with varying levels of view exposure and visual sensitivity to changes in the environment. For example, views experienced from public vantage points throughout residential neighborhoods are considered to be long-term and permanent and as such, residents are typically moderately to highly sensitive to changes in the visual environment. On the other hand, views available to motorists are experienced over a relatively brief duration and, therefore, motorists on roadways not designated as scenic typically have low sensitivity to visual changes in the environment. However, in the project area, the sensitivities and expectations of affected viewer groups are tempered by the presence of existing transmission infrastructure located in the transmission line corridor. Because the proposed steel monopole structures would be installed within the same corridor as the existing lattice structures, visual change would be noticeable but somewhat subdued. As depicted in Figure 3.1-6B, scale and form contrasts between the project and existing transmission structures would be visible. However, the project would install features of similar materiality, and the change in scale and form would produce a relatively weak effect.

Motorists within the project area with views of the project alignment would experience the contrasts in scale and form over a brief duration of time. While the contrasts would be noticeable in the fleeting views to the project alignment available to motorists (see Figure 3.1-7B), the presence of multiple tall transmission towers and lines in existing views would reduce resulting visual effects such that there would not be a significant overall change in the character, quality, and composition of views. The existing transmission lines tend to dominate the foreground due to their large height and mass. Similarly, new transmission structures would display a large height and mass and briefly draw the attention of passing motorists. Since the proposed transmission line structures would not substantially affect the character of the transmission corridor and quality of existing views, the project would not substantially degrade the overall experience of motorists along the transmission corridor.

Lastly, as experienced from residential roadways near the project alignment, scale and form contrast associated with tall monopoles would be detectable but would not degrade existing visual character and quality. As viewed from KOP 3, a new monopole would be installed approximately 0.25 mile away from the KOP within an existing corridor that currently features tall steel lattice towers (see Figures 3.1-8A and 3.1-8B). The proposed transmission structures would be taller than the existing structures they would replace but would display similar qualities (i.e., tall, metallic) and would be visually prominent, similar to the existing structures. Further, replacement transmission structures would

continue to be skylined in southwesterly views from KOP 3 and from other residential neighborhood roads near the project alignment.

The proposed project would also involve equipment upgrades at the Sylmar Switching Station and tie-ins of the new transmission line at the Sylmar and Haskell Canyon switching stations, within the existing footprints of each station. Upgrades at the Sylmar Switching Station would involve installation of new high voltage electrical equipment supported by reinforced concrete foundations. Both switching stations currently appear industrial in nature and contain clusters of electrical equipment. As such, upgrades to the equipment at the Sylmar Switching Station and switching station tie-ins would not substantially alter or degrade the current appearance of the switching stations.

Since the proposed project would be within the same corridor as the existing transmission line that would be removed, the overall viewer experience of the corridor would generally remain consistent with existing views. Although there would be a change in the scale and form from wide and geometric steel lattice structures to narrow and straight monopoles, the resulting contrasts would be relatively weak and would not fundamentally alter the existing character of the transmission line corridor or degrade existing views. Therefore, the project would not substantially degrade the existing character of the site or its surrounding and impacts would be **less than significant**.

Threshold D: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Light

New sources of lighting would not be installed at the switching stations, along access roads, or at new transmission structures for the proposed 230 kV line. Regular inspection and maintenance of overhead facilities would generally be performed several times annually by both ground and air patrols. Regular inspections would occur during daytime hours for maximum visibility for patrols. Emergency maintenance may be required and would involve prompt movement of maintenance crews to repair or replace any damaged equipment or infrastructure. Use of lighting would be sporadic and would generally be limited to emergency maintenance scenarios that may occur during the night. Use of nighttime lighting at any one location along the 12-mile-long alignment would not be permanent and would be used on a short-term basis to facilitate necessary repairs and maintenance. Because the use of nighttime lighting during operations would be sporadic and limited to emergency maintenance scenarios, and because maintenance of the existing 115 kV transmission line and other lines in the corridor occasionally require emergency maintenance during night hours, lighting used during project operation would not be a new source of substantial light that would adversely affect nighttime views. Impacts would be **less than significant.**

Glare

As described above, use of lighting associated with the proposed project would be limited to emergency maintenance scenarios. Use of lighting would be infrequent and lighting would be shielded and focused onto areas of active work. Shielding of lighting would minimize opportunities for glare to be generated and received by nearby receptors

including motorists and residents. Therefore, infrequent use of nighttime lighting associated with the project would not create a new source of substantial glare that would adversely affect nighttime views in the area.

Non-specular conductor is installed along the 12-mile-long segment of the existing 115 kV line. As proposed, LADWP would replace the existing line with a new 230 kV line that would include non-specular conductor. Because the same type of conductor would be strung on the alignment, the new 230 kV transmission line would not create a new source of substantial glare that would adversely affect daytime views in the area. Conductor materials would be the same as under existing conditions and to area receptors, the new conductor would generally be indistinguishable from the existing conductor in appearance. As described above, the proposed structures would be standard galvanized steel, similar to the other structures within the corridor and throughout the project area. Initially, the structures would look new and more polished in contrast to the existing structures. As such, the new structures could temporarily be more reflective relative to the existing structures in the corridor. However, after several years, the color of the structures would fade to dull grey, becoming similar in color and reflectivity to the other structures along the alignment. As such, any additional reflectivity would be temporary. Due to the existing presence of steel transmission structures in the transmission corridor and near switching stations, new steel structures would not create a new, permanent source of substantial glare that would adversely affect daytime views in the area.

The new 230 kV line would include tempered glass insulator bells with a grey silicone undercoating. Insulator bells are installed where the conductor attaches to a transmission structure. While glass is a potential source of glare, the generation of glare and exposure of receptors is determined by several factors including distance between source and receptor, angle of view, path of the sun, and atmospheric conditions. These factors dictate the likelihood of glare generation and exposure on any given day. The application of a silicone undercoating to the bells would diminish the reflectivity of the exposed glass and reduce the potential for new insulators to produce substantial glare. Additionally, the size of the insulator bells relative to the length of the conductor and the scale of transmission structures is minor. As such, insulator bells would not be visually prominent and would be unobtrusive to receptors in the surrounding area. For these reasons, impacts would be **less than significant**.

3.1.6 Mitigation Measure(s)

Impacts were determined to be less than significant and, therefore, no mitigation measures are required.

3.1.7 Level of Significance After Mitigation

Impacts were determined to be less than significant and no mitigation measures are required.

3.1.8 References Cited

City of Los Angeles. 2001. "Conservation Element" in City of Los Angeles General Plan. Adopted by City Council September 26, 2001. Accessed January 10, 2019. https://planning.lacity.org/GP_elements.html.

City of Santa Clarita. 2011. "Conservation and Open Space Element" in City of Santa Clarita General Plan. June 2011. Accessed May 1, 2018. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/SantaClaritaGP.html.

City of Santa Clarita. 2016a. Trails and Parks Map. Revised April 2016. Accessed May 24, 2018. https://www.santa-clarita.com/city-hall/departments/neighborhood-services/parks-division/trails/maps.

City of Santa Clarita. 2016b. Master Plan of Trails. Last updated November 2016. Accessed July 28, 2018. http://hikesantaclarita.com/maps/.

County of Los Angeles. 2015. Los Angeles County General Plan 2035. Adopted October 6, 2015. Accessed November 29, 2018. http://planning.lacounty.gov/generalplan/generalplan.

INTENTIONALLY LEFT BLANK

Photo A: View west to transmission line crossing of San Fernando Road (Sylmar)

Photo B: View southwest from Carol Lane (south of I-210) to transmission line alignment (Sylmar)

Photo C: View southwest from Filbert Street (north of I-210) to transmission line alignment (Sylmar)

Photo D: View northeast from SR-14/Newhall Avenue park and ride to transmission line span across Whitney Canyon (Santa Clarita)

SOURCE: Dudek 2018

LA DWP Los Angeles Department of Water & Power

FIGURE 3.1-1

Existing Setting of the Project Alignment

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

Photo E: View east from Placerita Canyon Road to transmission lines, SR-14, and the San Gabriel Mountains (Santa Clarita)

Photo F: View northeast from Clean Enery Systems Trail (Quigley Canyon Open Space) to industrial facility and transmission lines

Photo G: View southwest from Aquatic Center Drive to transmission lines and industrial warehouse (Santa Clarita)

Photo H: View southwest from Oak Avenue to industrial and office development and transmissin lines (Santa Clarita)

SOURCE: Dudek 2018

LA DWP Los Angeles Department of Water & Power

FIGURE 3.1-2

Existing Setting of the Project Alignment

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

Photo I: View north from Sutter's Point Drive to single-family residences and transmission lines (Santa Clarita)

Photo J: View northwest from Bouquet Canyon Road to transmission lines and commercial development (Santa Clarita)

Photo K: View north from Copper Hill Drive to transmission line corridor and single-family residential development (east and west of corridor)

Photo L: View northeast from Placerview Trail to single-family residences and transmission lline infrastructure in Haskell Canyon

SOURCE: Dudek 2018

LA DWP Los Angeles Department of Water & Power

FIGURE 3.1-3

Existing Setting of the Project Alignment

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

View west from Haskell Canyon Open Space trail

View northeast from Whitney Canyon Park trail

SOURCE: Dudek 2018

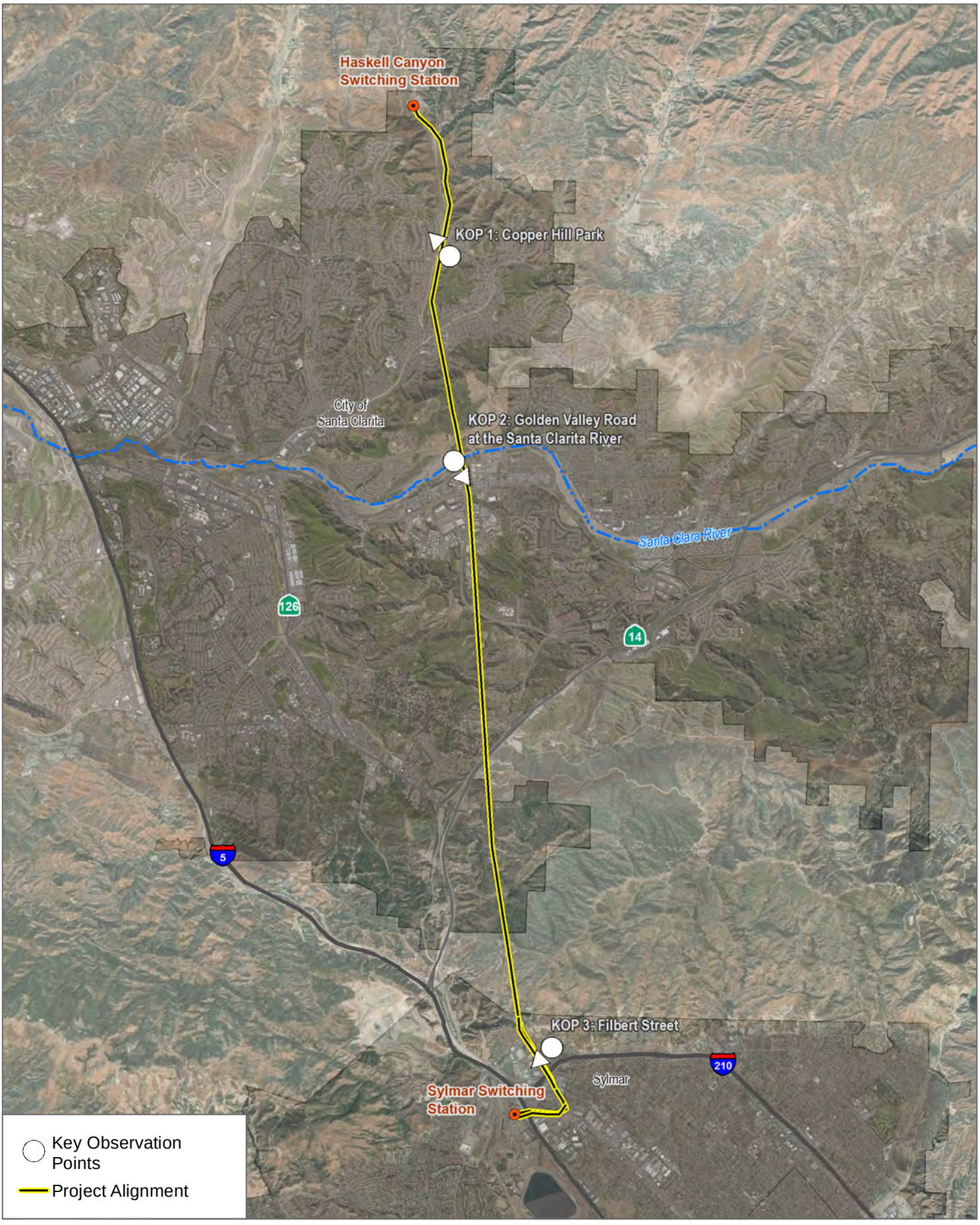
Los Angeles Department of Water & Power

FIGURE 3.1-4

Scenic Vistas (Existing Conditions)

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK



SOURCE: Dudek 2018

LA DWP Los Angeles Department of Water & Power

0 0.75 1.5 Miles

FIGURE 3.1-5

Key Observation Points

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

Existing view northwest from Copper Hill Park

SOURCE: Dudek 2018

LA DWP Los Angeles Department of Water & Power

FIGURE 3.1-6A

KOP 1: Copper Hill Park (Santa Clarita)

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

Visual Simulation of Proposed Project

SOURCE: Dudek 2018

FIGURE 3.1-6B

KOP 1: Copper Hill Park (Santa Clarita)

PP1 and PP2 Transmission Line Conversion Project

LA DWP Los Angeles Department of Water & Power

INTENTIONALLY LEFT BLANK

Existing view southeast from Golden Valley Road over Santa Clara River

SOURCE: Dudek 2018

FIGURE 3.1-7A

KOP 2: Golden Valley Road at the Santa Clara River (Santa Clarita)

PP1 and PP2 Transmission Line Conversion Project

LA DWP Los Angeles Department of Water & Power

INTENTIONALLY LEFT BLANK

Visual Simulation of Proposed Project

SOURCE: Dudek 2018

FIGURE 3.1-7B

KOP 2: Golden Valley Road at the Santa Clara River (Santa Clarita)

PP1 and PP2 Transmission Line Conversion Project

LA DWP Los Angeles Department of Water & Power

INTENTIONALLY LEFT BLANK

Existing view southwest from Filbert Street

SOURCE: Dudek 2018

Los Angeles Department of Water & Power

FIGURE 3.1-8A

KOP 3: Filbert Street (Sylmar)

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

Visual Simulation of Proposed Project

SOURCE: Dudek 2018

LA DWP Los Angeles Department of Water & Power

FIGURE 3.1-8B

KOP 3: Filbert Street (Sylmar)

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

3.2 Air Quality

This section describes existing air quality resources present in the project area; discusses applicable federal, state, and regional regulations pertaining to air quality; and evaluates the potential effects on air quality associated with development of the proposed project.

Comments received in response to the Notice of Preparation (see Appendix A) included a comment letter from the South Coast Air Quality Management District (SCAQMD) with recommendations regarding the analysis of potential air quality impacts. The air quality analysis in this EIR has been conducted in line with these recommendations.

Information contained in this section is based on published air quality data for the project area from the California Air Resources Board (CARB) and the South Coast Air Quality Management District (SCAQMD). Sources consulted are listed in Section 3.2.8.

3.2.1 Existing Conditions

This section describes the existing conditions in the project area and also identifies the resources and sensitive receptors that could be affected by the proposed project.

The project area is located within the South Coast Air Basin (SCAB). SCAB is a 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. SCAB includes Orange County, Los Angeles County (except the Antelope Valley portion), and the western, non-desert portions of San Bernardino and Riverside Counties.

Meteorological and Topographical Conditions

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted. Meteorological and topographical conditions, however, are also important. Factors such as wind speed and direction, air temperature gradients and sunlight, and precipitation and humidity interact with physical landscape features to determine the movement and dispersal of air pollutants. SCAB's air pollution problems are a consequence of the combination of emissions from the nation's second largest urban area, meteorological conditions discouraging dispersion of those emissions, and mountainous terrain surrounding SCAB that traps pollutants as they are pushed inland by the sea breeze (SCAQMD 2017a). The meteorological and topographical factors affecting air quality in SCAB are described in the following subsections.[1]

Climate

SCAB is characterized as having a Mediterranean climate (typified as semiarid with mild winters, warm summers, and moderate rainfall). The general region lies in the semi-permanent high-pressure zone of the eastern Pacific; as a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently

[1] The discussion of meteorological and topographical conditions of SCAB is based on information provided in the Final 2016 Air Quality Management Plan (SCAQMD 2017a).

by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in SCAB is a function of the area's natural physical characteristics (e.g., weather and topography) and of manufactured influences (e.g., development patterns and lifestyle). Moderate temperatures, comfortable humidity, and limited precipitation characterize the climate in SCAB. The average annual temperature varies little, averaging 75° Fahrenheit (F); however, with a less-pronounced oceanic influence, the eastern inland portions of SCAB show greater variability in annual minimum and maximum temperatures, and all portions have recorded temperatures over 100°F in recent years. Although SCAB has a semiarid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into SCAB by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70% at the coast and 57% in the eastern part of SCAB. Precipitation is typically 9–14 inches annually and is rarely in the form of snow or hail because of typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of SCAB.

Sunlight

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain "primary" pollutants (mainly reactive hydrocarbons and oxides of nitrogen (NO_x)[2] react to form "secondary" pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind of the emission sources. Southern California also has abundant sunshine, which drives the photochemical reactions that form pollutants such as ozone (O_3) and a substantial portion of fine particulate matter (particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$)). In SCAB, high concentrations of O_3 are normally recorded during the late spring, summer, and early autumn months, when more intense sunlight drives enhanced photochemical reactions. Due to the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of Southern California.

Temperature Inversions

Under ideal meteorological conditions and irrespective of topography, pollutants emitted into the air mix and disperse into the upper atmosphere. However, the Southern California region frequently experiences temperature inversions in which pollutants are trapped and accumulate close to the ground. The inversion, a layer of warm, dry air overlaying cool, moist marine air, is a normal condition in coastal Southern California. The cool, damp, and hazy sea air capped by coastal clouds is heavier than the warm, clear air, which acts as a lid through which the cooler marine layer cannot rise. The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above mean sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet above mean sea level, the terrain prevents the pollutants from entering the upper atmosphere, resulting in the pollutants settling in the foothill communities. Below 1,200 feet above mean sea level, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the daylight hours.

[2] NOx is a general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO2) and other oxides of nitrogen.

Mixing heights for inversions are lower in the summer, and inversions are more persistent, being partly responsible for the high levels of O_3 observed during summer months in SCAB. Smog in Southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods, allowing them to form secondary pollutants by reacting in the presence of sunlight. SCAB has a limited ability to disperse these pollutants due to typically low wind speeds and the surrounding mountain ranges.

As with other cities within SCAB, the cities of Los Angeles and Santa Clarita are susceptible to air inversions, which trap a layer of stagnant air near the ground where pollutants are further concentrated. These inversions produce haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources. Elevated particulate matter less than or equal to 10 microns in diameter (PM_{10}) and $PM_{2.5}$ concentrations can occur in SCAB throughout the year but occur most frequently in fall and winter. Although there are some changes in emissions by day-of-week and season, the observed variations in pollutant concentrations are primarily the result of seasonal differences in weather conditions.

Pollutants and Effects

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set (pursuant to the federal and state Clean Air Acts, which are discussed in the following pages), with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Regulated pollutants include O_3, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead (Pb). These pollutants, as well as toxic air contaminants (TACs), are discussed in the following paragraphs.[3] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone. O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly NO_X and volatile organic compounds (VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric ozone) and at Earth's surface in the lower atmosphere (tropospheric ozone).[4] The O_3 that the U.S. Environmental Protection Agency (EPA) and CARB regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the

[3] The descriptions of each of the criteria air pollutants and associated health effects are based on the EPA's Criteria Air Pollutants (2016a) and the CARB Glossary of Air Pollutant Terms (2016a).

[4] The troposphere is the layer of Earth's atmosphere nearest to the surface of Earth, extending outward approximately 5 miles at the poles and approximately 10 miles at the equator.

amount of ultraviolet light (i.e., solar radiation) entering Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas. NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (EPA 2016b).

Carbon Monoxide. CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas such as the City of Los Angeles, transportation accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. PM_{10} tends to collect in the upper portion of the respiratory system, whereas $PM_{2.5}$ is small enough to penetrate deeper into the lungs and damage lung tissue. Suspended particulates also produce haze and reduce regional visibility and damage and discolor surfaces on which they settle.

People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$ (EPA 2009).

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile (i.e., vehicle) emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are the main sources of lead emissions.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and, in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead.

Volatile Organic Compounds. Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs

(also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the Legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC, such as diesel particulate matter (DPM).

Diesel Particulate Matter. DPM, which is the predominant TAC, is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (about 1/70 the diameter of a human hair) and, thus, is a subset of $PM_{2.5}$ (CARB 2016b). DPM is typically composed of carbon particles ("soot," also called black carbon) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2016b). CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM; 17 CCR 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines, including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$,

DPM also contributes to the same noncancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2016b). Those most vulnerable to noncancer health effects are children whose lungs are still developing and the elderly who often have chronic health problems.

Odorous Compounds

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and is generally considered subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. Known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air-pollution-sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air-pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005). The SCAQMD identifies sensitive receptors as residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993).

Sensitive receptors in proximity to the project alignment primarily consist of residential neighborhoods in Sylmar and Santa Clarita. The nearest off-site sensitive receptors to the proposed project include residential land uses on Carol Lane in Sylmar, located approximately 35 feet from the structure removal location near proposed structure 12-7. All other air quality sensitive receptors are located at greater distances from structure removal and installation sites and would be less impacted by emissions generated by the proposed project. Impacts are quantified in Section 3.2.5.

Regional and Local Air Quality Conditions

South Coast Air Basin Attainment Designation

Pursuant to the 1990 federal Clean Air Act amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the National Ambient Air Quality Standards (NAAQS) have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant.

If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are re-designated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on California Ambient Air Quality Standards (CAAQS) rather than the NAAQS. Table 3.2-1 depicts the current attainment status of the project area with respect to the NAAQS and CAAQS as well as the attainment classifications for the criteria pollutants.

Table 3.2-1. South Coast Air Basin Attainment Classification

Pollutant	Designation/Classification	
	Federal Standards[a]	*State Standards*[b]
Ozone (O_3) – 1 hour	No federal standard	Nonattainment
Ozone (O_3) – 8 hour	Extreme nonattainment	Nonattainment
Nitrogen dioxide (NO_2)	Unclassifiable/attainment	Attainment
Carbon monoxide (CO)	Attainment/maintenance	Attainment
Sulfur dioxide (SO_2)	Unclassifiable/attainment	Attainment
Coarse particulate matter (PM_{10})	Attainment/maintenance	Nonattainment
Fine particulate matter ($PM_{2.5}$)	Serious nonattainment	Nonattainment
Lead (Pb)	Nonattainment	Attainment
Hydrogen sulfide	No federal standard	Unclassified
Sulfates	No federal standard	Attainment
Visibility-reducing particles	No federal standard	Unclassified
Vinyl chloride	No federal standard	No designation

Notes: bold text = not in attainment; attainment = meets the standards; attainment/maintenance = achieved the standards after a nonattainment designation; nonattainment = does not meet the standards; unclassified or unclassifiable = insufficient data to classify; unclassifiable/attainment = meets the standard or is expected to meet the standard despite a lack of monitoring data.

[a] EPA 2016c.

[b] CARB 2016d.

In summary, SCAB is designated as a nonattainment area for federal and state O_3 standards and federal and state $PM_{2.5}$ standards. SCAB is designated as a nonattainment area for state PM_{10} standards; however, it is designated as an attainment area for federal PM_{10} standards. SCAB is designated as an attainment area for federal and state CO standards, federal and state NO_2 standards, and federal and state SO_2 standards. While SCAB has been designated as nonattainment for the federal rolling 3-month average lead standard, it is designated attainment for the state lead standard (EPA 2016c; CARB 2016d).

Despite the current nonattainment status, air quality within SCAB has generally improved since the inception of air pollutant monitoring in 1976. This improvement is mainly due to lower-polluting on-road motor vehicles, more stringent regulation of industrial sources, and the implementation of emission reduction strategies by the SCAQMD. This trend toward cleaner air has occurred in spite of continued population growth. Despite this growth, air quality has improved significantly over the years, primarily due to the impacts of the region's air quality control program. PM_{10} levels have

declined almost 50% since 1990, and $PM_{2.5}$ levels have also declined 50% since measurements began in 1999 (SCAQMD 2013). Similar improvements are observed with O_3, although the rate of O_3 decline has slowed in recent years.

Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. The SCAQMD monitors local ambient air quality in the project area. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The most recent background ambient air quality data in the project area are from 2015 to 2017 and are presented in Table 3.2-2. The Santa Clarita monitoring station, located at 22224 Placerita Canyon Road, Santa Clarita, California 91321, is the nearest air quality monitoring station to the project area, located approximately 1.5 miles west from the project alignment. Air quality data for O_3, NO_2, CO, $PM_{10,}$ and $PM_{2.5}$ from the Santa Clarita monitoring station monitoring station are provided in Table 3.2-2. Because SO_2 is not monitored at the Santa Clarita monitoring station, these measurements were taken from a different monitoring station in SCAB, the Los Angeles North Main Street monitoring station (1630 North Main Street, California 90012, approximately 30 miles southeast from the project area). The data collected at these stations are considered representative of the air quality experienced in the project vicinity. The number of days that exceeded the ambient air quality standards is also shown in Table 3.2-2.

Table 3.2-2. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Number of days exceeding standards per year		
					2015	*2016*	*2017*	*2015*	*2016*	*2017*
Ozone (O_3)										
Santa Clarita	ppm	Maximum 1-hour concentration	State	0.126	0.130	0.151	0.140	23	29	26
	ppm	Maximum 8-hour concentration	State	0.070	0.108	0.115	0.128	52	57	73
			Federal	0.070	0.108	0.115	0.128	37	35	53

Table 3.2-2. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Number of days exceeding standards per year		
					2015	*2016*	*2017*	*2015*	*2016*	*2017*
Nitrogen Dioxide (NO_2)										
Santa Clarita	ppm	Maximum 1-hour concentration	State	0.18	0.064	0.046	0.057	0	0	0
			Federal	0.100	0.0646	0.0464	0.0576	0	0	0
	ppm	Annual concentration	State	0.030	0.011	0.010	0.010	—	—	—
			Federal	0.053	0.012	0.010	0.010	0	0	0
Carbon Monoxide (CO)										
Santa Clarita	ppm	Maximum 1-hour concentration	State	20	—	—	—	—	—	—
			Federal	35	1.2	1.3	1.3	0	0	0
	ppm	Maximum 8-hour concentration	State	9.0	—	—	—	—	—	—
			Federal	9	0.9	1.1	0.8	0	0	0
Sulfur Dioxide (SO_2)										
Los Angeles–North Main Street	ppm	Maximum 1-hour concentration	Federal	0.075	0.060	0.058	0.057	0	0	0
	ppm	Maximum 24-hour concentration	Federal	0.14	0.011	0.013	0.015	0	0	0
	ppm	Annual concentration	Federal	0.030	0.0017[a]	0.003	0.0036	0	0	0
Coarse Particulate Matter (PM_{10})[b]										
Santa Clarita	μg/m³	Maximum 24-hour concentration	State	50	39.0	ND	ND	ND (0)	ND (ND)	ND (ND)
			Federal	150	41.0	96	66.5	0.0 (0)	0.0 (0)	0.0 (0)
	μg/m³	Annual concentration	State	20	18.4	23.4	23.7	—	—	—
Fine Particulate Matter ($PM_{2.5}$)[b]										
Santa Clarita	μg/m³	Maximum 24-hour concentration	Federal	35	34.4	33.9	32.6	ND (ND)	ND (ND)	ND (ND)
	μg/m³	Annual concentration	State	12	ND	16.9	16.8	—	—	—
			Federal	12.0	ND	9.4	10.2	—	—	—

Sources: CARB 2018; EPA 2018.

Notes: ppm = parts per million; — = data not available; μg/m3 = micrograms per cubic meter; ND = insufficient data available to determine the value. Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.

Exceedances of federal and state standards are only shown for O3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM10 and PM2.5 are not monitored daily. All other criteria pollutants did not exceed federal or state standards during the years shown. There is no federal standard for 1-hour ozone, annual PM10, or 24-hour SO2, nor is there a state 24-hour standard for PM2.5.
Santa Clarita Monitoring Station is located at 22224 Placerita Canyon Road, Santa Clarita, California 91321
Los Angeles North Main Street Monitoring Station is located at 1630 North Main Street, Los Angeles, California 90012.

[a] Mean does not satisfy minimum data completeness criteria.

[b] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the standard, had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

3.2.2 Relevant Plans, Policies, and Ordinances

Federal

Clean Air Act

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including setting NAAQS for major air pollutants; setting hazardous air pollutant (HAP) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated timeframes.

Hazardous Air Pollutants

The 1977 federal Clean Air Act amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants to protect public health and welfare. HAPs include certain VOCs, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State

Criteria Air Pollutants

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with

subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established CAAQS, which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered "in attainment" if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 3.2-3.

Table 3.2-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 μg/m³)	0.070 ppm (137 μg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	annual arithmetic mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 μg/m³)	0.075 ppm (196 μg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 μg/m³)
	24 hours	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[g]	—
	annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 μg/m³	150 μg/m³	Same as Primary Standard
	annual arithmetic mean	20 μg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 μg/m³	Same as Primary Standard
	annual arithmetic mean	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[j,k]	30-day average	1.5 μg/m³	—	—
	calendar quarter	—	1.5 μg/m³ (for certain areas)[k]	Same as Primary Standard
	rolling 3-month average	—	0.15 μg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m³)	—	—

Table 3.2-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
Vinyl chloride[j]	24 hours	0.01 ppm (26 μg/m^3)	—	—
Sulfates	24 hours	25 μg/m^3	—	—
Visibility-reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70%	—	—

Source: CARB 2016c.

Notes: μg/m^3 = micrograms per cubic meter; mg/m^3= milligrams per cubic meter; ppm = parts per million by volume; O_3 = ozone; NO_2 = nitrogen dioxide; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter with an aerodynamic diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns.

[a] California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter (PM_{10}, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[g] To attain the national 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the national 1-hour standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m^3 to 12.0 μg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 μg/m^3, as was the annual secondary standard of 15 μg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μg/m^3 were also retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 μg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, a subset of which have carcinogenic and noncarcinogenic toxicity criteria established pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation (CARB 2014), On-Road Heavy Duty (New) Vehicle Program (CARB 2005), In-Use Off-Road Diesel Vehicle Regulation (CARB 2011), and New Off-Road Compression-Ignition (Diesel) Engines and Equipment program (CARB 2008). These regulations and programs have timetables to which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There are several Airborne Toxic Control Measures that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

California Health and Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Friant Ranch Court Case (Sierra Club v. County of Fresno)

The California Supreme Court released a decision on December 24, 2018, regarding the adequacy of the Friant Community Plan Update and Friant Ranch Specific Plan Environmental Impact Report. The air quality analysis in the EIR was determined to be "inadequate because it failed to include an analysis that correlated the project's emission of air pollutants to its impact on human health," indicating that EIRs need to provide an analysis to explain how the anticipated air quality impacts of a project translate to potential health impacts. However, at the time of this writing, there are no proven, available modeling tools for CEQA purposes that would provide a reliable and meaningful analysis correlating increased concentrations of criteria air pollutants from an individual development project to specific health

impacts. Also at the time of this writing, no California air district (including the SCAQMD) has published guidance on how to address the Sierra Club v. County of Fresno case.

Local

South Coast Air Quality Management District

The SCAQMD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in SCAB, where the proposed project is located. The SCAQMD operates monitoring stations in SCAB, develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. The SCAQMD's Air Quality Management Plans (AQMPs) include control measures and strategies to be implemented to attain state and federal ambient air quality standards in SCAB. The SCAQMD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment.

The 2012 AQMP proposed policies and measures to achieve federal and state standards for improved air quality in SCAB and portions of the Salton Sea Air Basin (formerly named the Southeast Desert Air Basin) that are under SCAQMD jurisdiction. The 2012 AQMP is designed to meet applicable federal and state requirements for O_3 and particulate matter. The 2012 AQMP stated that attainment of the federal 24-hour $PM_{2.5}$ standard was impracticable by 2015 and that SCAB should be classified as a serious nonattainment area along with the appropriate federal requirements. The 2012 AQMP included the planning requirements to meet the 1-hour O_3 standard. The 2012 AQMP demonstrated a plan for attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 in SCAB through adoption of all feasible measures. Finally, the 2012 AQMP updated the EPA-approved 8-hour O_3 control plan with new measures designed to reduce reliance on the Clean Air Act Section 182(e)(5) long-term measures for NO_x and VOC reductions. The 2012 AQMP reduction and control measures, which are outlined to mitigate emissions, are based on existing and projected land use and development. The EPA, with a final ruling on April 14, 2016, approved the Clean Air Act planning requirements for the 24-hour $PM_{2.5}$ standard portion and on September 3, 2014, approved the 1-hour O_3 Clean Air Act planning requirements. The 2012 AQMP was updated in 2016 (approved March 2017); this AQMP accounts for updates to CARB's and SCAQMD's emission reductions resulting from adopted rules and regulations since the 2012 AQMP, growth factors, and demographic trends.

The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gas emissions and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017a). Because mobile sources are the principal contributor to SCAB's air quality challenges, SCAQMD has been and will continue to be closely engaged with CARB and the EPA, who have primary responsibility for these sources. The 2016 AQMP recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies in a manner that benefits not only air quality but also local businesses and the regional economy. These "win-win" scenarios are key to implementation of this 2016 AQMP with broad support from a wide range of stakeholders.

While striving to achieve the NAAQS for O_3 and $PM_{2.5}$ and the CAAQS for O_3, PM_{10}, and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in SCAB. Projects are considered consistent with, and would not conflict with or obstruct, implementation of the AQMP if growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP. The demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) based on general plans for cities and counties in SCAB were used in the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) (SCAG 2016) to estimate future emissions in the 2016 AQMP (SCAQMD 2017a).

SCAQMD Rules

The proposed project would be subject to the rules and regulations of SCAQMD (2017b), which include the following:

- **Rule 401 – Visible Emissions:**[5] This rule establishes the limit for visible emissions from stationary sources.
- **Rule 402 – Nuisance:**[6] This rule prohibits the discharge of air pollutants from a facility that cause injury, detriment, nuisance, or annoyance to the public or damage to business or property.
- **Rule 403 – Fugitive Dust:**[7] This rule requires fugitive dust sources to implement best available control measures for all sources and prohibits all forms of visible particulate matter from crossing any property line. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust, and identifies measures to reduce fugitive dust. This includes soil treatment for exposed soil areas. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate.
- **Rule 431.2 – Sulfur Content of Liquid Fuels:**[8] The purpose of this rule is to limit the sulfur content in diesel and other liquid fuels for the purpose of reducing the formation of sulfur oxides (SO_x) and particulates during combustion and of enabling the use of add-on control devices for diesel-fueled internal combustion engines. The rule applies to all refiners, importers, and other fuel suppliers such as distributors, marketers, and retailers, as well as to users of diesel, low-sulfur diesel, and other liquid fuels for stationary-source applications in the SCAQMD. The rule also affects diesel fuel supplied for mobile sources.
- **Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines:**[9] This rule applies to stationary and portable engines rated at greater than 50 horsepower. The purpose of Rule 1110.2 is to reduce NO_x, VOC, and CO emissions from engines. Emergency engines, including those powering standby generators, are generally exempt from the emissions and monitoring requirements of this rule because they have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter.

5 Rule 401 Visible Emissions: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-401.pdf?sfvrsn=4.
6 Rule 402 Nuisance: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf?sfvrsn=4.
7 Rule 403 Fugitive Dust: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4.
8 Rule 431.2 Sulfur Content of Liquid Fuels: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-431-2.pdf?sfvrsn=4.
9 Rule 1110.2 Emissions from Gaseous and Liquid-Fueled Engines: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1110-2.pdf.

- **Rule 1113 – Architectural Coatings:**[10] This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

- **Rule 1166 – VOC Emissions from Decontamination of Soil:**[11] This rule requires that an approved mitigation plan be obtained from SCAQMD prior to commencing any excavation or grading of soil containing VOC material including gasoline, diesel, crude oil, lubricant, waste oil, adhesive paint, stain, solvent, resin, monomer, and/or any other material containing VOCs.

- **Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities:**[12] This rule specifies work practices to limit asbestos emissions from building demolition and renovation activities, including removal and associated disturbance of asbestos-containing material (ACM).

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated metropolitan planning organization for the Southern California region and is the largest metropolitan planning organization in the United States.

With respect to air quality planning and other regional issues, SCAG has prepared the *Final 2008 Regional Comprehensive Plan: Helping Communities Achieve a Sustainable Future* (2008 RCP) for the region (SCAG 2008). The 2008 RCP sets the policy context in which SCAG participates in and responds to the SCAQMD air quality plans and builds off the SCAQMD AQMP processes that are designed to meet health-based criteria pollutant standards in several ways (SCAG 2008). First, it complements AQMPs by providing guidance and incentives for public agencies to consider best practices that support the technology-based control measures in AQMPs. Second, the 2008 RCP emphasizes the need for local initiatives that can reduce the region's GHG emissions that contribute to climate change, an issue that is largely outside the focus of local attainment plans. Third, the 2008 RCP emphasizes the need for better coordination of land use and transportation planning, which heavily influences the emissions inventory from the transportation sectors of the economy. This also minimizes land use conflicts, such as residential development near freeways, industrial areas, or other sources of air pollution.

On April 7, 2016, SCAG's Regional Council adopted the 2016 RTP/SCS. The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2016 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The 2016 RTP/SCS was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, nonprofit organizations,

10 Rule 1113 Architectural Coatings: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf?sfvrsn=17.

11 Rule 1166 VOC Emissions from Decontamination of Soil: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1166.pdf?sfvrsn=4.

12 Rule 1403 Asbestos Emissions from Demolition/Renovation Activities: http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1403.pdf.

businesses, and local stakeholders within the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration and the Federal Transit Administration indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 Federal Transportation Improvement Program Consistency Amendment through Amendment 15-12 have been met (SCAG 2016).

As previously noted, SCAQMD's 2016 AQMP applies the updated SCAG growth forecasts assumed in the 2016 RTP/SCS.

City of Los Angeles General Plan

The General Plan Air Quality Element (City of Los Angeles 1992) provides policies regarding air quality, including the following:

Policy 1.3.1
Minimize particulate emissions from construction sites.

Policy 1.3.2
Minimize particulate emissions from unpaved roads and parking lots that are associated with vehicular traffic.

Policy 2.1.2
Facilitate and encourage the use of telecommunications (i.e., telecommuting), in both the public and private sectors, to reduce work trips.

Policy 2.2.1
Discourage single-occupant vehicle use through a variety of measures such as market incentive strategies, mode-shift incentives, trip reduction plans, and ridesharing subsidies.

Policy 2.2.2
Encourage multi-occupant vehicle travel and discourage single-occupant vehicle travel by instituting parking management policies.

Policy 2.2.3
Minimize the use of single-occupant vehicles associated with special events or in areas and times of high levels of pedestrian activities

Policy 3.2.1
Manage traffic congestion during peak hours.

Policy 4.1.2
Ensure that project level review and approval of land use development remain at the local level.

Policy 4.2.4
Require that air quality impacts be a consideration in the review and approval of all discretionary projects.

Policy 4.2.5
Emphasize trip reduction, alternative transit, and congestion management measures for discretionary projects.

Policy 5.1.3
Have the Department of Water and Power make improvements at its in-basin power plants to reduce air emissions.

Policy 5.3.1
Support the development and use of equipment powered by electric or low-emitting vehicles.

City of Santa Clarita General Plan

The following policies from the Conservation and Open space element pertaining to air quality may be applicable to the proposed project (City of Santa Clarita 2011):

Goal CO-7
Clean air to protect human health and support healthy ecosystems

Objective CO-7.1
Reduce air pollution from mobile sources

Policy CO-7.1.1
Through the mixed land use patterns and multi-modal circulation policies set forth in the land use and circulation elements, limit air pollutant emissions from transportation sources.

Policy CO-7.1.2
Support the use of alternatives fuel vehicles

Policy CO-7.1.3
Support alternative travel modes and new technologies, including infrastructure to support alternative fuel vehicle, as they become commercially available.

Objective CO-7.3
Coordinate with other agencies to plan for and implement programs for improving air quality in the SCAB.

Policy CO-7.3.1
Coordinate with local, regional, state and federal agencies to develop and implement regional air quality policies and programs.

County of Los Angeles General Plan 2035

The Los Angeles County General Plan was adopted by the Board of Supervisors on October 6, 2015. The following policies from the Air Quality Element may be applicable to the proposed project (County of Los Angeles 2015):

Policy AQ 1.2
Encourage the use of low or no VOC-emitting materials.

Policy AQ 1.3
Reduce particulate inorganic and biological emissions from construction, grading, excavation, and demolition to the maximum extent feasible.

Policy AQ 1.4
Work with local air quality management districts to publicize air quality warnings, and to track potential sources of airborne toxics from identified mobile and stationary sources.

Policy AQ 2.3
Support the conservation of natural resources and vegetation to reduce and mitigate air pollution impacts.

Policy AQ 2.4
Coordinate with different agencies to minimize fugitive dust from different sources, activities, and uses.

3.2.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to air quality are based on Appendix G of CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to air quality would occur if the proposed project would:

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

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

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

D. Expose sensitive receptors to substantial pollutant concentrations.

E. Create objectionable odors affecting a substantial number of people.

Pursuant to the State CEQA Guidelines (Section 15064.7), a lead agency may consider using, when available, the significance criteria established by the applicable air quality management district or air pollution control district when making determinations of significance. LADWP uses SCAQMD's thresholds to evaluate proposed development projects and assess the significance of quantifiable impacts. The potential air quality impacts of a project are, therefore,

evaluated according to the thresholds adopted by the SCAQMD in connection with its CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent SCAQMD guidance as discussed previously.

Threshold A: Consistency with Air Quality Management Plan. The evaluation of whether the proposed project would conflict with or obstruct implementation of the applicable air quality plan is based on the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993), Chapter 12, Section 12.2 (Consistency Criterion No. 1), which asks whether the proposed project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP. This issue is addressed in detail under Threshold 1 in Section 3.2.5. Consistency Criterion No. 2 in the SCAQMD CEQA Air Quality Handbook, Chapter 12, Section 12.3, asks whether the proposed project would exceed the assumptions in the AQMP or increments based on the year of proposed project buildout and phase, as discussed further in Section 3.2.5.

Threshold B: Violation of Air Quality Standard. Appendix G of the CEQA Guidelines indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to determine whether the proposed project would have a significant impact on air quality.

The SCAQMD has established Air Quality Significance Thresholds, as revised in March 2015, which set forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality under existing and cumulative conditions. The quantitative air quality analysis provided herein applies the SCAQMD thresholds identified in Table 3.2-4 to determine the potential for the proposed project to result in a significant impact under CEQA.

Table 3.2-4. South Coast Air Quality Management District Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	*Construction (pounds per day)*	*Operation (pounds per day)*
VOC	75	55
NO_x	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead[a]	3	3
TACs and Odor Thresholds		
TACs[b]	Maximum incremental cancer risk ≥10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic and acute hazard index ≥1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	

Table 3.2-4. South Coast Air Quality Management District Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds	
Ambient Air Quality Standards for Criteria Pollutants[c]	
NO_2 1-hour average NO_2 annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.030 ppm (state) and 0.0534 ppm (federal)
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)
PM_{10} 24-hour average PM_{10} annual average	SCAQMD is in nonattainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation) 1.0 μg/m³
$PM_{2.5}$ 24-hour average	SCAQMD is in nonattainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation)

Source: SCAQMD 2015.
Notes: SCAQMD = South Coast Air Quality Management District; VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; NO_2 = nitrogen dioxide; ppm = parts per million; μg/m³ = micrograms per cubic meter.
GHG emissions thresholds for industrial projects, as added in the March 2015 revision to the SCAQMD Air Quality Significance Thresholds, are not include included in Table 3.2-4 because they are addressed within the GHG emissions analysis (see Section 3.6 of this EIR).

[a] The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the proposed project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.
[b] TACs include carcinogens and noncarcinogens.
[c] Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.
[d] Ambient air quality threshold are based on SCAQMD Rule 403.

A project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for O_3, which is a nonattainment pollutant, if the proposed project's construction or operational emissions would exceed the SCAQMD VOC or NO_x thresholds shown in Table 3.2-4. These emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur). This approach is used because O_3 is not emitted directly (see the discussion of O_3 and its sources in Section 3.2.1). Additionally, the effects of an individual project's emissions of O_3 precursors (VOC and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods.

Threshold C: Cumulative Impacts on Air Quality. Regarding cumulative impacts (checklist question C) for nonattainment pollutants, if emissions exceed the thresholds shown in Table 3.2-4, the proposed project could have the potential to result in a cumulatively considerable net increase in these pollutants and, thus, could have a significant impact on ambient air quality.

Threshold D: Sensitive Receptors. The assessment of the proposed project's potential to expose sensitive receptors to substantial pollutant concentrations (threshold criterion D) includes a localized significance threshold (LST) analysis, as recommended by the SCAQMD, to evaluate the potential of localized air quality impacts to sensitive receptors in the immediate vicinity of the proposed project. An LST analysis was performed to evaluate potential localized impacts associated with construction activities. The maximum number of acres disturbed on the peak day was estimated using the "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (SCAQMD 2011), which provides estimated acres per 8-hour day for crawler tractors, graders, rubber tired dozers, and scrapers. Based on this fact sheet, the proposed project was shown to disturb a maximum of about 2.64 acres per day.[13] Therefore, the LST for a 2-acre site was utilized. (In this case, rounding down equates to a more conservative analysis.) The SCAQMD LST Methodology (2008) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for NO_2, CO, PM_{10}, and $PM_{2.5}$) without performing project-specific dispersion modeling.

The LST significance thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of a project that would not cause or contribute to an exceedance of the relevant ambient air quality standards, while the threshold for PM_{10} represents compliance with Rule 403 (Fugitive Dust). The LST significance threshold for $PM_{2.5}$ is intended to ensure that construction emissions do not contribute substantially to existing exceedances of the $PM_{2.5}$ ambient air quality standards. The allowable emission rates depend on the following parameters:

- Source receptor area (SRA) in which the project is located
- Size of the project site
- Distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals)

The project alignment crosses through two SRAs: 6 (West San Fernando Valley) and 13 (Santa Clarita Valley). Project work areas are adjacent to residences within both SRAs. SRA 6 has lower or equal emissions thresholds for all four pollutants when compared to the thresholds for SRA 13; therefore, the thresholds for SRA 6 were conservatively applied in this analysis for both areas.

As previously discussed in Section 3.2.1, the nearest sensitive-receptor land use (existing residences) is located approximately 35 feet from one of the project work areas. Based on the SCAQMD's LST Methodology, the LST receptor distance was assumed to be 82 feet (25 meters), which is the shortest distance provided by the SCAQMD lookup tables. (For receptors closer than 82 feet, the SCAQMD recommends use of the minimum distance provided in the LST Methodology, which is 82 feet.) The construction LST values from the SCAQMD lookup tables for SRA 6 for a 2-acre construction site and a receptor distance of 25 meters are shown in Table 3.2-5.

[13] On a typical day of construction, 2.64 acres of grading would not be expected to occur. The metric of "2 acres" does not necessarily mean that 2 acres of land would be graded but rather that the equipment fleet (and its running time) is equivalent to the amount of equipment that would be required to grade approximately 2 acres of land in a day.

Table 3.2-5. Localized Significance Thresholds for Source Receptor Area 6 (West San Fernando Valley)

Pollutant	Threshold (pounds per day)
NO_2	147
CO	644
PM_{10}	6
$PM_{2.5}$	4

Source: SCAQMD 2008.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
LST thresholds were determined based on the values for 2-acre site at a distance of 25 meters from the nearest sensitive receptor.

The assessment of the proposed project's potential to expose sensitive receptors to substantial pollutant concentrations (threshold criterion D) also includes an evaluation of CO hotspots, and an assessment of the potential health effects of criteria air pollutants.

Threshold E: Odors. The potential for the proposed project to result in an odor impact (threshold criterion E) is based on the proposed project's anticipated construction activity and land use type, and the potential for the proposed project to create an odor nuisance pursuant to SCAQMD Rule 402 (Nuisance).

3.2.4 Methodology

Emissions from proposed project construction were estimated using CalEEMod Version 2016.3.2. Emission factors for helicopters were obtained from Federal Office of Civil Aviation's Guidance on Determination of Helicopter Emissions (FOCA 2017).

It is assumed that construction of the proposed project would commence in late-2019[14] and would last approximately 4 years, ending in November 2023. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Switching Station Tie-ins and Upgrades: 50 months (September 2019-November 2023)
- Demolition (Removal of 115 kilovolt (kV) line): 45 months (March 2020–November 2023)
- Site Preparation: 45 months (March 2020–November 2023)
- Transmission Structure Installation and Conductor Stringing: 45 months (March 2020–November 2023)
- Site Rehabilitation: 45 Months (March 2020–November 2023)

[14] The analysis assumes a construction start date of September 2019, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

In practice, these activities would occur intermittently with periods of inactivity throughout the duration of construction (i.e., each phase would not occur continuously for 4 years). However, for the purposes of ensuring conservative analysis, the maximum construction intensity was assumed.

Detailed construction techniques for each phase are discussed in Section 2.7 of this EIR. For the analysis, it was generally assumed that heavy construction equipment would be operating at work areas along the alignment for 5 days per week (22 days per month), during proposed project construction. CalEEMod default trip length values were used for the distances for all construction-related trips. The construction equipment mix and vehicle trips used for estimating the proposed project-generated construction emissions are shown in Table 2-1 of this EIR.

3.2.5 Impact Analysis

Threshold A: Would the project conflict with or obstruct implementation of the applicable air quality plan?

As previously discussed, the proposed project site is located within the SCAB under the jurisdiction of the SCAQMD, which is the local agency responsible for administration and enforcement of air quality regulations for the area. The SCAQMD has established criteria for determining consistency with the AQMP in the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993). The criteria are as follows (SCAQMD 1993):

- **Consistency Criterion No. 1:** The project will not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay the timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- **Consistency Criterion No. 2:** The project will not exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Consistency Criterion No. 1

Threshold B evaluates the proposed project's potential to violate an air quality standard or contribute substantially to an existing or projected air quality violation. As discussed under threshold question B, the proposed project would exceed the SCAQMD's daily construction emissions threshold for NO_x, a precursor pollutant for O_3. As shown in Table 3.2-1, the SCAQMD is in nonattainment for O_3. Because the proposed project would result in an increase in the severity of an existing air quality violation, the project would conflict with Consistency Criterion No. 1.

Consistency Criterion No. 2

While striving to achieve the NAAQS for O_3 and $PM_{2.5}$ and the CAAQS for O_3, PM_{10}, and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in the SCAB. Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population and employment) is consistent with the underlying regional plans used to develop the AQMP.

The proposed project would be consistent with land use and zoning designations under the City of Los Angeles, City of Santa Clarita, and County of Los Angeles general plans, which were used to develop the assumptions in the 2016 AQMP. This is

because the proposed project involves improvements within existing switching stations and within an existing, designated transmission corridor that has been used for electricity transmission since the early 1900s. The proposed project would not result in a land use change that could conflict with existing land use policies or plans adopted by the agencies with jurisdiction over local land uses. Additionally, the proposed project would not directly or indirectly promote population growth in the region and would not include long-term operational employment (see Appendix A1 and Section 6.4 of this EIR for additional details on population growth and employment). Required maintenance activities would be conducted by current LADWP staff and would be consistent with current maintenance performed within the transmission corridor. Therefore, the proposed project would not exceed the assumptions of the 2016 AQMP. Accordingly, the proposed project would meet Consistency Criterion No. 2.

Summary

Implementation of the proposed project would not exceed the demographic growth forecasts used to develop the AQMP. However, the proposed project would increase the severity of existing air quality violations by exceeding SCAQMD's daily construction NO_x threshold and, therefore, would conflict with Consistency Criterion No. 1. Based on these considerations, impacts related to the proposed project's potential to conflict with or obstruct implementation of the applicable air quality plan would be **significant and unavoidable**.

Threshold B: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction

Construction of the proposed project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment and soil disturbance) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

As discussed in Section 3.2.4, criteria air pollutant emissions associated with temporary construction activity were quantified using CalEEMod. Construction emissions were calculated for the estimated worst-case day over the construction period associated with each phase and reported as the maximum daily emissions estimated during each year of construction (2019 through 2023). Construction schedule assumptions, including phase type, duration, and sequencing, are intended to represent a reasonable scenario based on the best information available. Default values provided in CalEEMod are used where detailed project-specific information is not available.

Implementation of the proposed project would generate air pollutant emissions from entrained dust, off-road equipment, and vehicle emissions. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The proposed project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. In compliance with Rule 403,

standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites two times per day depending on weather conditions. During construction, if any soils that are being excavated are determined to be VOC contaminated, the requirements set forth in SCAQMD Rule 1166 must be implemented. This rule requires implementation of an SCAQMD-approved plan for excavating or grading within soils containing VOC material to address and minimize VOC off-gassing. SCAQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities) would also be required during removal of the existing transmission line if it is determined that the transmission line used asbestos for insulation. This rule specifies that SCAQMD must be notified of demolition activity and sets forth requirements for handling asbestos safely and in a manner that minimizes its release to the environment.

Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), haul trucks, and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. Table 3.2-6 presents the estimated maximum daily construction emissions generated during construction of the proposed project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix C.

Table 3.2-6. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
2019	1.97	21.92	14.96	0.04	2.11	0.92
2020	35.06	407.07	98.73	0.17	17.97	6.52
2021	10.02	111.47	67.42	0.17	11.36	6.47
2022	8.77	96.52	64.64	0.17	11.36	6.47
2023	7.84	83.54	62.04	0.17	11.36	6.47
Maximum Daily Emissions	35.06	407.07[1]	98.73	0.17	17.97	6.52
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	No	Yes	No	No	No	No

Notes: VOC = volatile organic compound; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides; PM10 = coarse particulate matter; PM2.5 = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
See Appendix C for complete results. The values shown are the maximum summer or winter daily emissions results from CalEEMod. PM10 and PM2.5 emissions account for compliance with SCAQMD Rule 403 (Fugitive Dust).

1 Maximum daily NO_x emissions would occur during use of heavy-duty helicopters for installation/removal of transmission structures (up to 42 days of heavy-duty helicopter use are assumed for the project). For purposes of the air quality modeling, all 42 days were assumed to occur in 2020. In practice, some intermittent use may occur in 2021, 2022, or 2023; however, the total number of days is assumed not to exceed 42 for the entire duration of the project.

As shown in Table 3.2-6, daily construction emissions would not exceed the SCAQMD significance thresholds for VOCs, CO, SO_x, PM_{10}, or $PM_{2.5}$ during construction in all construction years. However, the construction emissions would exceed the threshold for NO_x in 2020 and 2021. It should be noted that the primary source of NO_x emissions in 2020 (the year with maximum daily emissions) would be from use of heavy-duty helicopters for transmission structure removal and installation. While construction-generated emissions would be temporary and would not represent a long-term source of criteria air pollutant emissions, impacts related to construction would be potentially significant, due to exceedance of the SCAQMD threshold for NO_x. Feasible mitigation for this impact is discussed in Sections 3.2.6 and

3.2.7; however, even with implementation of all feasible mitigation measures, the NO_x threshold would still be exceeded during construction. As such, impacts would be **significant and unavoidable**.

Operation

As discussed in in Section 2.0 of this EIR, operational activities would be conducted to ensure reliable service of the transmission line. Proposed maintenance activities for the proposed 230 kV transmission would be similar in scope and scale to those that are currently conducted for the existing 115 kV line. Therefore, the project's proposed operational activities would be similar to existing baseline conditions. As such, criteria pollutant emissions would not exceed existing baseline emissions. Therefore, **no impact** would occur.

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

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

In considering cumulative impacts from the proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SCAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. If a project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality. The basis for analyzing the proposed project's cumulatively considerable contribution is if the proposed project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact). Additionally, consistency with the 2016 AQMP, which addresses the cumulative emissions in the SCAB, is taken into account.

As discussed in Section 3.2.1, the SCAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$ and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction of the proposed project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. As indicated in Table 3.2-6, proposed project-generated construction emissions would not exceed the SCAQMD emission-based significance thresholds for VOC, CO, SO_2, PM_{10}, or $PM_{2.5}$. However the project would exceed the SCAQMD threshold for NO_x. The proposed project would not generate an increase in emissions during operation, as explained above.

There are other development projects near the project alignment that are being proposed or that are approved but not yet built. Cumulative localized impacts would potentially occur if proposed project construction were to occur

concurrently with construction for a nearby development project. Construction schedules for potential projects near the proposed project work areas are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative.[15] However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation. Criteria air pollutant emissions associated with construction activity of future proposed projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would also be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD.

Based on the project-generated construction emissions of NOx and its exceedance of SCAQMD significance thresholds for NOx, the project would result in a cumulatively considerable contribution to SCAB's nonattainment status for O_3, and impacts would be potentially significant. Feasible mitigation for this impact is discussed in Sections 3.2.6 and 3.2.7; however, even with implementation of all feasible mitigation measures, the NO_x threshold would still be exceeded during construction, resulting in a cumulatively considerable contribution to SCAB's nonattainment status for O_3. As such, impacts would be **significant and unavoidable**.

Threshold D: Would the project expose sensitive receptors to substantial pollutant concentrations?

Localized Significance Thresholds Analysis

As discussed in Section 3.2.1, sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The proposed project alignment is near residential and school buildings, the closest of which are residences in the community of Sylmar located approximately 35 feet from a proposed work area. To provide a conservative analysis, the minimum distance provided in the SCAQMD LST look up tables were utilized in this analysis.

An LST analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the proposed project. As indicated in the discussion of the thresholds of significance (Section 3.2.3), the SCAQMD recommends the evaluation of localized NO_2, CO, PM_{10}, and $PM_{2.5}$ emissions. The impacts were analyzed using methods consistent with those in the SCAQMD's *Final Localized Significance Threshold Methodology* (2009). According to the *Final Localized Significance Threshold Methodology*, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2008). Hauling of soils and construction materials associated with the proposed project construction are not expected to cause substantial air quality impacts to sensitive

[15] The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQ A's information disclosure requirements.

receptors along off-site roadways. Emissions from the trucks would be relatively brief in nature and would cease once the trucks pass through the main streets.

Construction activities associated with the proposed project would result in temporary sources of on-site fugitive dust and construction equipment emissions. Off-site emissions from vendor trucks, haul trucks, and worker vehicle trips are not included in the LST analysis, for the reasons described above. The maximum allowable daily emissions are presented in Table 3.2-7 and are compared to the maximum daily on-site construction emissions generated during the proposed project.

Table 3.2-7. Localized Significance Thresholds Analysis for Proposed Project Construction

Maximum On-Site Emissions	NO_2	CO	PM_{10}	$PM_{2.5}$
	Pounds per Day			
Construction Emissions	20.77	24.74	5.10	3.62
SCAQMD LST	*147*	*644*	*6*	*4*
LST Exceeded?	No	No	No	No

Source: SCAQMD 2008.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.
See Appendix C for detailed results.
Localized significance thresholds are shown for 2-acre work areas and a sensitive receptor distance of 25 meters (82 feet).
These estimates reflect control of fugitive dust required by Rule 403.

As shown in Table 3.2-7, construction activities would not generate emissions in excess of site-specific LSTs; therefore, site-specific, localized impacts during construction of the proposed project would be **less than significant**.

Health Impacts of Toxic Air Contaminants

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as TACs or HAPs. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal HAPs, and is adopting appropriate control measures for sources of these TACs. The greatest potential for TAC emissions during project construction would be diesel particulate emissions from heavy-duty equipment operations and heavy-duty trucks. However, compliance with the following state laws would help minimize the amount of diesel particulate emissions emitted during construction:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-Road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, Section 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to 5 minutes; electric auxiliary power units should be used whenever possible.

The closest sensitive receptors to project construction would be residents located along the alignment. As shown in Table 3.2-7, maximum daily particulate matter (PM_{10} or $PM_{2.5}$) emissions generated by construction equipment operation and from hauling of soil during grading (exhaust particulate matter, or DPM), combined with fugitive dust generated by equipment operation and vehicle travel, would be well below the SCAQMD significance thresholds. Moreover, construction of the proposed project would last no longer than approximately 5 weeks in one location, after which the construction activities would move to the next location along the 12-mile alignment. The proposed project would also not cause an increase in operational activities; as such, operational TAC emissions would not increase. Therefore, the impact would be **less than significant.**

Health Impacts of Carbon Monoxide

Mobile source impacts occur on two scales of motion. Regionally, proposed project-related travel would add to regional trip generation and increase the VMT within the local airshed and the SCAB during construction. Locally, proposed project generated traffic would be added to the roadway systems near the proposed project alignment. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. The proposed project's traffic impacts would be temporary and would not be a source of daily, long-term mobile-source emissions. Accordingly, proposed activities would not generate traffic that would result in the formation of CO hotspots. As explained in Section 3.8, construction traffic from the proposed project would not significantly degrade intersection level of service or volume-to-capacity ratios beyond current levels, due to the minimal and dispersed nature of project construction traffic. As such, the proposed project would not cause or exacerbate intersection congestion. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of traffic growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Maximum background CO levels in the proposed project vicinity, as shown in Table 3.2-2, are less than 7% and 12% of the 1-hour and 8-hour NAAQS and CAAQS and are expected to continuously improve due to reductions in motor vehicle emissions. Additionally, long-term operational maintenance trips required to service the proposed transmission line would be similar to those required for the existing transmission line. Based on these considerations, the proposed project would result in a **less than significant** impact to air quality with regard to potential CO hotspots.

Health Impacts of Other Criteria Air Pollutants

Construction of the proposed project would result in emissions that would not exceed the SCAQMD thresholds for the criteria air pollutants VOC, CO, SO_x, $PM_{10,}$ and $PM_{2.5}$. However, proposed project-generated NO_x emissions would result in an exceedance of the SCAQMD threshold as shown in Table 3.2-6. NO_x emissions would result from the use of motor vehicles and construction equipment.

VOCs and NO_x are precursors to O_3, for which the SCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function. The contribution

of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SCAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the NO_x and VOC emissions occur, because exceedances of O_3 standards tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Because construction of the project would exceed the SCAQMD threshold for NO_x, health impacts would be considered potentially significant. However, at the time of this writing, there are no proven, available modeling tools for CEQA purposes that would provide a reliable and meaningful analysis correlating increased concentrations of criteria air pollutants from an individual development project to specific health impacts. As such, this EIR provides available information about the potential health effects of air pollutants but does not quantify specific health impacts from the project, since no methods have been demonstrated to be effective for individual development projects at this time.

Construction of the proposed project would not exceed SCAQMD thresholds for PM_{10} or $PM_{2.5}$, would not contribute to exceedances of the NAAQS and CAAQS for particulate matter, and would not obstruct the SCAB from coming into attainment for these pollutants. The proposed project would also not result in substantial DPM emissions (which are a type of $PM_{2.5}$) during construction and therefore would not result in significant health effects related to DPM exposure. Additionally, the proposed project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Due to the project's minimal contribution of particulate matter during construction and operation, health impacts would be considered less than significant.

Construction of the proposed project would contribute to exceedances of the NAAQS and CAAQS for NO_2, which is a type of NO_x. Health impacts that result from NO_2 and NO_x include respiratory irritation, which could be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment, specifically the use of heavy duty helicopters used for transmission pole removal and installation. (As explained above under Threshold B, exceedances in air quality standards for NO_x are attributable to the use of off-road construction equipment and heavy-duty helicopters during certain construction phases.) However, off-road construction equipment, including helicopters, would be operating at various portions of the alignment and would not be concentrated in one portion of the site at any one time. In addition, existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards. As such, due to exceedances of standards for NO_x emissions, potential health impacts associated with NO_2 and NO_x would be considered potentially significant. However, at the time of this writing, there are no proven, available modeling tools for CEQA purposes that would provide a reliable and meaningful analysis correlating increased concentrations of criteria air pollutants from an individual development project to specific health impacts. As such, this EIR provides available information about the potential health effects of air pollutants but does not quantify specific health impacts from the project, since no methods have been demonstrated to be effective for individual development projects at this time.

CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots were discussed previously and are determined to be a less than significant impact. Thus, the proposed project's CO emissions would not contribute to significant health effects associated with this pollutant.

In summary, construction of the proposed project would not result in exceedances of the SCAQMD significance thresholds for any criteria pollutant, with the exception of NO_x. Therefore, health impacts associated with NO_x in the form of NO_2 and O_3 are considered potentially significant. The major source of NO_x emissions during construction would be the use of heavy-duty helicopters for transmission structure removal and installation. This activity is anticipated to occur for approximately 42 days over the course of the 4-year construction period and would occur for a maximum of two days per structure location. As such, emissions would not be concentrated at any one work area. The NO_x emissions in excess of air quality standards would, in practice, occur infrequently throughout construction and would be spread out throughout a large area, thereby reducing the potential health effects for individual receptors. Feasible mitigation for this impact is discussed in Sections 3.2.6 and 3.2.7; however, even with implementation of all feasible mitigation measures, the NO_x threshold would still be exceeded during construction. Therefore, impacts would be **significant and unavoidable**.

Threshold E: Would the project create objectionable odors affecting a substantial number of people?

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and can cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the proposed project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment. Such odors would disperse rapidly from the proposed project work areas and would generally occur at magnitudes that would not affect substantial numbers of people. Additionally, construction activities would only occur at any one location for a maximum of about 5 weeks. Therefore, impacts associated with odors during construction would be **less than significant**.

Land uses and industrial operations associated with long-term, operational odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993).The proposed project would involve replacement of an existing transmission line. Operation of transmission lines are not typically associated with odor complaints, and transmission lines do not typically emit odors. As such, the proposed project would not create any new sources of odor during operation. Therefore, proposed project operations would result in **no impacts** relative to odors.

3.2.6 Mitigation Measure(s)

The following mitigation measure would reduce potentially significant impacts to air quality.

MM-AQ-1

Use of Tier 3 Equipment. The Los Angeles Department of Water and Power (LADWP) and/or its construction contractor shall comply with the following measures during construction:

- Prior to the start of construction activities, LADWP shall ensure that all 75 horsepower or greater diesel-powered equipment are powered with CARB certified Tier 3 engines, except where LADWP establishes that Tier 3 equipment is not available. When feasible, Tier 4 equipment shall be considered.
- In cases where LADWP is unable to secure a piece of equipment that meets the Tier 3 requirement, LADWP may upgrade another piece of equipment to compensate (i.e., a piece of Tier 3 equipment would be replaced by a Tier 4 piece).
- Engine Tier requirements in accordance with this measure shall be incorporated on all construction plans.

3.2.7 Level of Significance After Mitigation

Construction of the proposed project would result in a potentially significant impact prior to mitigation. With implementation of MM-AQ-1, the emissions of NO_X would be reduced compared to the unmitigated scenario. Table 3.2-8 shows the results of the emissions analysis after implementation of MM-AQ-1 for the proposed project. (The detailed emissions assumptions and model outputs from CalEEMod are provided in Appendix C of this EIR.)

Table 3.2-8. Estimated Mitigated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
2019	0.94	14.70	16.96	0.04	2.11	0.92
2020	28.28	360.39	111.05	0.17	17.97	6.52
2021	3.89	72.28	81.08	0.17	11.36	6.47
2022	3.82	71.20	80.49	0.17	11.36	6.47
2023	3.70	68.72	79.81	0.17	11.35	6.46
Maximum Daily Emissions	28.28	360.39	111.05	0.17	17.97	6.52
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	No	Yes [1]	No	No	No	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
See Appendix C for complete results. The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output, which accounts for compliance with SCAQMD Rule 403 (Fugitive Dust) and incorporation of MM-AQ-1.

[1] Mitigated NO_x impacts would fall below the threshold for all construction days when heavy-duty helicopters are not used. As such, the exceedance would occur for approximately 42 days throughout the 4-year construction period.

The mitigated results shown in Table 3.2-8 demonstrate that implementation of MM-AQ-1 would reduce NO_x emissions and associated air quality impacts. However, after mitigation, NO_x emission would still exceed the SCAQMD construction daily threshold. Therefore, impacts would be **significant and unavoidable**.

3.2.8 References Cited

13 CCR 2449–2449.3 and Appendix A. General Requirements for In-Use Off-Road Diesel-Fueled Fleets.

13 CCR 2025. In-Use On-Road Diesel-Fueled Vehicles.

17 CCR 93000. Substances Identified as Toxic Air Contaminants. In Subchapter 7, Toxic Air Contaminants.

CAPCOA. 2017. *California Emissions Estimator Model (CalEEMod) User's Guide Version 2016.3.2*. Prepared by BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts. November 2017. Accessed November 2017. http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4.

CARB (California Air Resources Board). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. ARB, Stationary Source Division, Mobile Source Control Division. October 2000. Accessed October 26, 2016. https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf.

CARB. 2005. *On-Road Heavy-Duty Diesel Engine Reduced Emission Standards*. January 6, 2005. Accessed December 2016. https://www.arb.ca.gov/msprog/onroadhd/reducstd.htm.

CARB. 2008. *Off-Road Compression-Ignition (Diesel) Engines and Equipment*. September 8, 2008. Accessed December 2016. https://www.arb.ca.gov/msprog/offroad/orcomp/regulations.htm.

CARB. 2011. *Regulation for In-Use Off-Road Diesel-Fueled Fleets*. December 2011. Accessed December 2016. https://www.arb.ca.gov/msprog/ordiesel/documents/finalregorder-dec2011.pdf.

CARB. 2014. *Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles*. January 2014. Accessed December 2016. https://www.arb.ca.gov/regact/2014/truckbus14/tbfrooal.pdf.

CARB. 2016a. "Glossary of Air Pollution Terms." Accessed October 26, 2016. http://www.arb.ca.gov/html/gloss.htm.

CARB. 2016b. "Overview: Diesel Exhaust and Health." April 12, 2016. Accessed December 2016. https://www.arb.ca.gov/research/diesel/diesel-health.htm.

CARB. 2016c. "Ambient Air Quality Standards." May 4, 2016. Accessed December 2016. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

CARB. 2016d. "Area Designation Maps/State and National." Last updated May 5, 2016. Accessed December 2016. http://www.arb.ca.gov/desig/adm/adm.htm.

CARB. 2018. "iADAM: Air Quality Data Statistics." Accessed March 2018. http://www.arb.ca.gov/adam/topfour/topfour1.php.

City of Los Angeles. 1992. *General Plan Air Quality Element*. November 24. Accessed August 2018. https://planning.lacity.org/cwd/gnlpln/aqltyelt.pdf.

City of Santa Clarita. 2011. "Conservation and Open Space Element" in City of Santa Clarita General Plan. June 2011. Accessed May 1, 2018. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/SantaClaritaGP.html.

County of Los Angeles. 2015. Los Angeles County General Plan 2035. Adopted October 6, 2015. Accessed November 29, 2018. http://planning.lacounty.gov/generalplan/generalplan.

EPA (U.S. Environmental Protection Agency). 2009. "Integrated Science Assessment for Particulate Matter." U.S. EPA, EPA/600/R-08/139F, 2009.

EPA. 2013. "Integrated Science Assessment of Ozone and Related Photochemical Oxidants." U.S. EPA, EPA/600R-10/076F, 2013.

EPA. 2016a. "Criteria Air Pollutants." Last updated October 19, 2016. Accessed October 26, 2016. https://www.epa.gov/criteria-air-pollutants.

EPA. 2016b. "Integrated Science Assessment for Oxides of Nitrogen-Health Criteria (2016 Final Report)." U.S. EPA, EPA/600/R-15/068, 2016.

EPA. 2016c. "EPA Region 9 Air Quality Maps and Geographic Information." Last updated April 27, 2016. Accessed December 2016. http://www.epa.gov/region9/air/maps/.

EPA. 2018. "AirData: Access to Air Pollution Data." Last updated December 5, 2017. http://www.epa.gov/airdata/ad_rep_mon.html.

FOCA (Federal Office of Civil Aviation) 2017. *Helicopter Emissions* Table. July, 27th, 2017. https://www.bazl.admin.ch/bazl/en/home/specialists/regulations-and-guidelines/environment/pollutant-emissions/aircraft-engine-emissions/guidance-on-the-determination-of-helicopter-emissions.html.

SCAG (Southern California Association of Governments). 2008. *Final 2008 Regional Comprehensive Plan: Helping Communities Achieve a Sustainable Future.* Adopted October 2, 2008. Accessed October 26, 2016. https://www.scag.ca.gov/Documents/f2008RCP_Complete.pdf.

SCAG. 2016. *Final 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy.* Adopted April 2016. Accessed October 26, 2016. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

SCAQMD (South Coast Air Quality Management District). 1993. *CEQA Air Quality Handbook*. December 2016. http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.

SCAQMD. 2008. *Final Localized Significance Threshold Methodology*. June 2003; revised July 2008. Accessed September 2018. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf.

SCAQMD. 2011. "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds." Accessed October 26, 2016. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2.

SCAQMD. 2013. *Final 2012 Air Quality Management Plan*. February 2013. Accessed October 26, 2016. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2012-air-quality-management-plan/final-2012-aqmp-(february-2013)/main-document-final-2012.pdf.

SCAQMD. 2015. "SCAQMD Air Quality Significance Thresholds." Based on the 1993 SCAQMD CEQA Handbook. Revised March 2015. Accessed October 26, 2016. http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf.

SCAQMD. 2017a. *Final 2016 Air Quality Management Plan.*

SCAQMD. 2017b. "SCAQMD Modeling Guidance for AERMOD." Accessed April 2018. http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/modeling-guidance.

INTENTIONALLY LEFT BLANK

3.3 Biological Resources

This section describes the biological resources present in the project area; discusses applicable federal, state, and regional regulations pertaining to biological resources; and evaluates the potential effects on biological resources associated with development of the proposed project.

Comments received in response to the Notice of Preparation (see Appendix A) included concerns regarding potential direct and indirect impacts on biological resources. The Santa Monica Mountains Conservancy expressed specific concerns that the project would cause habitat loss and edge effects and that the project would induce and/or accommodate urbanization in the greater Los Angeles metropolitan area, which may result in unavoidable significant adverse ecological impacts. The Santa Monica Mountains Conservancy also stated that the project would traverse several ecologically significant habitat communities and public lands and recommended that LADWP provide funding for conservation easements to offset the potential direct, indirect, and growth-inducing effects of the project. The California Department of Fish and Wildlife (CDFW) expressed concerns regarding the potential effects of the project on burrowing owl, least Bell's vireo, passerine birds, sensitive plant species, and streams. In their letter, CDFW described potential impacts and provided recommended mitigation measures.

The potential for the proposed project to induce growth is discussed in Section 6.4 of this EIR. Potential effects related to habitat communities, burrowing owl, least Bell's vireo, passerine birds, sensitive plant species, and streams are addressed in this section.

Information contained in this section is based on the Biological Resources Technical Report prepared by Dudek in February 2019, and included as Appendix D. As part of the Biological Resources Technical Report, various focused special-status biological survey efforts of the project area were conducted between April 2017 and January 2019. Other documentation used in this analysis included Warm Springs Mountain, Green Valley, Newhall, Mint Canyon, Oat Mountain, San Fernando, Canoga Park, and Van Nuys USGS 7.5-minute quadrangles (USGS 2018a) and the County geographic information system (GIS) data portal (County of Los Angeles 2019). Additionally, a database query was conducted to identify special-status biological resources present or potentially present within the study area using the USDA Natural Resource Conservation Service's Websoil Survey (USDA SSURGO 2018), California Natural Diversity Database (CNDDB) (CDFW 2018a), CNPS *Online Inventory of Rare and Endangered Vascular Plants* (CNPS 2018), USFWS species occurrence data (USFWS 2018a), and USFWS Information for Planning and Conservation System (USFWS 2018b). For the jurisdictional delineation, aerial maps from Bing (2018); the USFWS National Wetlands Inventory (NWI) (USFWS 2018c); the USGS National Hydrography Dataset (USGS 2018b); the State List of Hydric Soils (USDA 2018); and historical aerials and topographic maps (Google Earth 2019; Historic Aerials Online 2018) were reviewed. Other sources consulted are listed in Section 3.3.8, References Cited.

3.3.1 Existing Conditions

This section describes the existing conditions in the project area and also identifies the resources that could be affected by the proposed project.

The project site is located within a linear corridor in northwestern Los Angeles County (County) and generally extends from Haskell Canyon to the community of Sylmar, located south of the City of Santa Clarita As such, the linear area in which the proposed and existing lines are located will be referred to herein as the "project alignment." A 500-foot buffer from the edge of the project alignment and helicopter laydown areas (totaling approximately 1,982 acres) was assessed during the general habitat assessment and vegetation mapping effort. The 500-foot buffer from the project alignment and helicopter laydown areas are referred to as the "study area" herein.

Climate

The proposed project is located within the Transverse Range and is situated approximately 20 miles from the Pacific Ocean with portions located within the Angeles National Forest. The Newhall Community of the City of Santa Clarita has a Mediterranean climate with cool, wet winters and warm, dry summers. July and August are the average warmest month with an average high temperature of 92°F and December and January are the coolest months on average with a low of 40°F (WRCC 2019). Rainfall occurs primarily between October and March, with the maximum average precipitation occurring in January. According to the Western Regional Climate Center (WRCC 2019), the mean annual rainfall for the region is 18.19 approximate inches of rain per year.

Soils

Soil mapping is from the U.S. Department of Agriculture (USDA) Soil Survey Geographic Database (SSURGO) (2018). Soils within the study area are presented in Table 3.3-1.

Table 3.3.1. Soils within the Study Area

Soil Mapping Unit
Badland
Balcom silty clay loam, 30% to 50% slopes
Calcixerollic Xerochrepts-Calleguas family-Modesto family, moderately deep complex, 30% to 60% slopes
Capistrano-Urban land complex, 0% to 2% slopes
Capistrano-Urban land complex, 2% to 9% slopes
Castaic-Balcom silty clay loams, 15% to 30% slopes
Castaic-Balcom silty clay loams, 30% to 50% slopes, eroded
Chualar-Urban land complex, 2% to 9% slopes
Cortina cobbly sandy loam, 2% to 9% slopes
Cortina sandy loam, 0% to 2% slopes
Cortina sandy loam, 2% to 9% slopes
Hanford family, 3% to 25% slopes
Hanford sandy loam, 0% to 2% slopes
Hanford sandy loam, 2% to 9% slopes
Metz loamy sand, 0% to 2% slopes
Metz loamy sand, 2% to 9% slopes
Millsholm loam, 30% to 50% slopes

Table 3.3.1. Soils within the Study Area

Soil Mapping Unit
Millsholm rocky loam, 30% to 50% slopes, eroded
Ojai loam, 15% to 30% slopes
Ojai loam, 2% to 9% slopes
Ojai loam, 30% to 50% slopes
Ojai loam, 9% to 15% slopes
Riverwash
Rock outcrop-Friant complex, 50% to 75% slopes
Sandy alluvial land
Saugus loam, 15% to 30% slopes
Saugus loam, 30% to 50% slopes
Saugus loam, 30% to 50% slopes, eroded
Soper gravelly sandy loam, 15% to 30% slopes
Sorrento loam, 2% to 5% slopes
Trigo family-Calcixerollic Xerochrepts-Vista family complex, 30% to 70% slopes
Vista coarse sandy loam, 30% to 50% slopes
Xerorthents-Urban land-Saugus complex, 15% to 30% slopes
Yolo loam, 0% to 2% slopes
Yolo loam, 2% to 9% slopes

Source: USDA SSURGO 2018

Terrain

The project alignment falls within the northwestern portion of the County and generally straddles the San Gabriel Mountains, the Santa Clara River Valley, and the Sierra Pelona Mountains. The southern terminus of the alignment is located within the San Fernando Valley. The alignment then crosses the Elsmere, Whitney, and Placerita Canyons, extending through the San Gabriel Mountains and then descending into the Santa Clara River Valley, where it crosses neighborhoods, undeveloped hilly areas, and commercial areas within the City of Santa Clarita. The alignment then crosses the Santa Clara River and then ascends through hillside neighborhoods before ascending north through an undeveloped, hilly area within Haskell Canyon. The alignment terminates just south and outside of the Angeles National Forest boundary. Elevations along the alignment range from approximately 1,255 feet amsl at the Sylmar Switching Station along the southwestern portion of the project alignment to approximately 2,320 feet amsl in the hillside regions of the project alignment.

Land Uses

The project alignment is located within an established transmission corridor that has been used for electricity transmission since the early 1900s. The corridor is an LADWP right-of-way, consisting of LADWP-owned land and private property. The land uses surrounding this transmission corridor range from industrial areas to open space.

Watersheds and Hydrology

The proposed project is located across several Hydrologic Areas (HA): Bouquet Canyon, Headwaters Santa Clara River, and Upper Santa Clara River of the Santa Clara-Calleguas Hydrologic Unit (HU); and the Upper Los Angeles River HA of the Los Angeles River HU. The Santa Clara River is the main hydrologic feature within the survey area. The Santa Clara River originates in the San Gabriel Mountains and drains 1,200 square miles before it flows into the Pacific Ocean in Ventura County (RWQCB 2014). The majority of the Santa Clara River is intermittent. Other significant hydrologic features in the vicinity are Haskell Canyon Creek, which occurs in the northern portion of the project and flows south into Bouquet Canyon Creek, which also bisects the project site near Bouquet Canyon Road and then flows west and southwest into the Santa Clara River. The Los Angeles Aqueduct traverses portions of the project site, primarily below ground. The USGS topographic quadrangles, NHD, and NWI depict unnamed streams throughout portions of the project site.

Vegetation Community and Land Cover Mapping

A total of 62 vegetation communities and land cover types occur within the study area (i.e., a 500-foot width from the project alignment and helicopter laydown areas) based on general physiognomy and species composition. The study area consists of 54 upland vegetation communities dominated by grassland, scrub, chaparral, riparian, woodlands, one wetland vegetation community (cattail marsh alliance), and 8 land covers (basin, concrete channel, open water, unvegetated channel, unvegetated channel/disturbed habitat, disturbed habitat, parks and ornamental plantings, and urban/developed). Table 3.3-2 provides a summary of acreages for each vegetation community and land cover type identified within the study area.

Table 3.3-2. Vegetation Communities and Land Covers within the Study Area

General Physiognomic Location	General Habitat	Vegetation Community or Land Cover Type[1]	Alliance	Association	Total Acres
Scrub and Chaparral					
Scrub and Chaparral	Coastal Scrub	Black sage scrub	*Salvia mellifera*	(NA)	0.71
		Black sage-brittle bush	*Salvia mellifera*	*Salvia mellifera-Encelia farinosa*	3.96
		California brittle bush scrub[2]	*Encelia californica*	*Encelia californica*	2.07
		California buckwheat scrub	*Eriogonum fasciculatum*	(NA)	22.66
		California buckwheat-brittle bush	*Eriogonum fasciculatum*	*Eriogonum fasciculatum-Encelia farinosa*	2.16
		California sagebrush scrub	*Artemisia californica*	(NA)	128.15
		California sagebrush-black sage	*Artemisia californica-Salvia mellifera*	(NA)	60.43

Table 3.3-2. Vegetation Communities and Land Covers within the Study Area

General Physiognomic Location	General Habitat	Vegetation Community or Land Cover Type[1]	Alliance	Association	Total Acres
		California sagebrush-laurel sumac	*Artemisia californica-Malosma laurina*	(NA)	4.33
		California sagebrush-purple sage	*Artemisia californica*	*Artemisia californica-Salvia leucophylla*	8.46
		California sagebrush-California buckwheat scrub	*Artemisia californica-Eriogonum fasciculatum*	(NA)	10.21
		Deer weed scrub	*Lotus scoparius*	(NA)	1.22
		Purple sage scrub	*Salvia leucophylla*	(NA)	0.89
		Purple sage-California sagebrush	*Salvia leucophylla*	*Salvia leucophylla-Artemisia californica*	7.80
		Scale broom scrub[2]	*Lepidospartum squamatum*	(NA)	3.88
	Great Basin Scrub	Big sagebrush alliance	*Artemisia tridentata*	(NA)	24..29
	Sonoran and Mojavean Desert Scrub	Brittle bush scrub	*Encelia farinosa*	(NA)	40.74
		Disturbed brittle bush scrub	*Encelia farinosa*	(NA)	1.07
	Undifferentiated Chaparral Scrub	Chamise chaparral	*Adenostoma fasciculatum*	(NA)	186.18
		Chamise/annual grass-forb	*Adenostoma fasciculatum*	*Adenostoma fasciculatum*/annual grass-forb	19.48
		Chamise-black sage chaparral	*Adenostoma fasciculatum-Salvia mellifera*	(NA)	30.87
		Chamise-California buckwheat	*Adenostoma fasciculatum*	*Adenostoma fasciculatum-Eriogonum fasciculatum*	0.76
		Chamise-California sagebrush scrub	*Adenostoma fasciculatum-Artemesia californica*	*Adenostoma fasciculatum-Artemesia californica*	23.11
		Chamise-purple sage[2]	*Adenostoma fasciculatum-Salvia apiana*	*Adenostoma fasciculatum-Salvia leucophylla*	1.32
		Hairy leaf ceanothus chaparral[2]	*Ceanothus oliganthus*	*Ceanothus oliganthus*	5.62
		Hariy leaf ceanothus-California sagebrush[2]	*Ceanothus oliganthus*	*Ceanothus oliganthus-Artemesia californica*	2.49
		Hoary leaf ceanothus chaparral	*Ceanothus crassifolius*	(NA)	45.49

Table 3.3-2. Vegetation Communities and Land Covers within the Study Area

General Physiognomic Location	General Habitat	Vegetation Community or Land Cover Type[1]	Alliance	Association	Total Acres
		Hoary leaf ceanothus-chamise	*Ceanothus crassifolius*	*Ceanothus crassifolius-Adenostoma fasciculatum*	35.95
		Hoary leaf ceanothus-chamise-black sage	*Ceanothus crassifolius*	*Ceanothus crassifolius-Adenostoma fasciculatum-Salvia mellifera*	3.76
		Holly leaf cherry chaparral[2]	*Prunus ilicifolia* ssp. *ilicifolia*	*Prunus ilicifolia* ssp. *ilicifolia*	16.67
		Scrub oak chaparral	*Quercus berberidifolia*	(NA)	20.62
		Scrub oak-chamise	*Quercus berberidifolia-Adenostoma fasciculatum*	(NA)	14.88
		Sugarbush Chaparral	*Rhus Ovata*	(NA)	13.65
		Thick leaf yerba santa scrub[2]	*Eriodictyon crassifolium*	(NA)	3.13
				Scrub and Chaparral Total	*747.01*
Grass and Herb Dominated Communities					
Grass and Herb Dominated Communities	Meadows and Seeps not dominated by grasses	Bush mallow scrub	*Malacothamnus fasciculatus*	(NA)	5.89
		Bush mallow-black sage	*Malacothamnus fasciculatus*	*Malacothamnus fasciculatus-Salvia mellifera*	1.04
		Laurel sumac scrub	*Malosma laurina*	(NA)	28.82
		Laurel sumac-California sagebrush	*Malosma laurina*	*Malosma laurina-Artemisia californica*	1.82
	Non-Native Grassland	Mediterranean California naturalized annual and perennial grassland	(NA)	(NA)	348.74
		Upland mustards	(NA)	(NA)	8.97
				Grass and Herb Dominated Communities Total	*395.28*

Table 3.3-2. Vegetation Communities and Land Covers within the Study Area

General Physiognomic Location	General Habitat	Vegetation Community or Land Cover Type[1]	Alliance	Association	Total Acres
Broad Leafed Upland Tree					
Broad Leafed Upland Tree Dominated	Eucalyptus Naturalized Forest	Eucalyptus groves	*Eucalyptus (globulus, camaldulensis)*	(NA)	2.25
		Pepper tree or myoporum groves	*Schinus (molle, terebinthifolius)-Myoporum laetum*	(NA)	4.57
	Oak Woodlands and Forests	Coast live oak woodland[2]	*Quercus agrifolia*	(NA)	88.00
		Coast live oak/hairy leaf ceanothus[2]	*Quercus agrifolia*	*Quercus agrifolia/Ceanothus oliganthus*	7.19
		Coast live oak-California walnut[2]	*Quercus agrifolia*	*Quercus agrifolia-Juglans californica*	3.32
				Broad Leafed Upland Tree Dominated Total	*105.33*
Riparian and Bottomland Habitat					
Riparian and Bottomland Habitat	Low to High Elevation Riparian Scrub	Mulefat thickets[2]	*Baccharis salicifolia*	(NA)	17.64
		Blue elderberry[2]	*Sambucus nigra*	(NA)	0.33
	Riparian Forest and Woodland	Black willow thickets[2]	*Salix gooddingii*	(NA)	1.80
		disturbed Fremont cottonwood-coast live oak[2]	*Populus fremontii*	*Populus fremontii-Quercus agrifolia*	1.56
		Fremont cottonwood forest[2]	*Populus fremontii*	(NA)	0.42
		Fremont cottonwood/mulefat[2]	*Populus fremontii*	*Populus fremontii/Baccharis salicifolia*	7.81
		Fremont cottonwood-coast live oak[2]	*Populus fremontii*	*Populus fremontii-Quercus agrifolia*	0.46
		Red willow thickets[2]	*Salix laevigata*	(NA)	4.26
		Sandbar willow thickets[2]	*Salix exigua*	(NA)	0.82
				Riparian and Bottomland Habitat Total	*35.11*
Bog and Marsh					
Bog and Marsh	Marsh	Cattail marshes[2]	*Typha (angustifolia, domingensis, latifolia)*	(NA)	0.42
				Bog and Marsh Total	*0.42*

Table 3.3-2. Vegetation Communities and Land Covers within the Study Area

General Physiognomic Location	General Habitat	Vegetation Community or Land Cover Type[1]	Alliance	Association	Total Acres
Waterways					
Waterways	Waterways	Basin	(NA)	(NA)	1.22
		Concrete Channel[2]	(NA)	(NA)	10.09
		Open Water[2]	(NA)	(NA)	0.08
		Unvegetated Channel[2]	(NA)	(NA)	14.03
		Unvegetated Channel/Disturbed Habitat[2]	(NA)	(NA)	0.18
				Waterways Total	*25.60*
Disturbed and Developed					
Disturbed and Developed	Disturbed and Developed	Disturbed Habitat	(NA)	(NA)	183.31
		Parks and ornamental plantings	(NA)	(NA)	16.44
		Urban/Developed	(NA)	(NA)	473.55
				Disturbed and Developed Total	*673.31*
				Total[3]	1,982.06

Notes: (NA) = not applicable (i.e., not mapped at this level of detail or not described by CDFW 2018e).

1 CDFW 2018e.

2 Considered special status by CDFW (CDFW 2018e), City of Los Angeles, City of Santa Clarita, County of Los Angeles, or are riparian habitats.

3 May not total due to rounding.

Floral Diversity

A total of 341 plant species were observed during the general and focused surveys conducted from 2017 through 2019. Of the 341 species observed, 211 (62%) are plant species native to California and 130 (38%) are non-native plant species, in total representing 78 families. The cumulative list of plant species observed during surveys conducted within the study area and focused survey efforts is provided in Appendix D to this Draft EIR.

Special-Status Plant Species

Special-status plant species reported in the USGS 7.5-minute Warm Springs Mountain, Green Valley, Newhall, Mint Canyon, Oat Mountain, San Fernando, Canoga Park and Van Nuys topographic quadrangles (CNPS and CNDDB occurrences), as well as plant species recognized as locally important within County of Los Angles Significant Ecological Areas (County of Los Angeles 2006) and the City of Los Angeles (City of Los Angeles 2006b) were analyzed based on information gathered during the literature review and site visits, including known range, habitat associations, and elevation. Special-status plants that have a low potential to occur or are not expected to occur within the proposed project due to lack of suitable habitat are listed in Appendix D; however, because no significant direct, indirect, or cumulative impacts are expected, these species are not discussed further. Five non-listed

special-status plant species have been observed within the special-status plant survey area are presented in Table 3.3-3. There are no special-status plant species with a moderate or high potential to occur within the survey area.

Table 3.3-3. Special-Status Plant Species Detected within the Survey Area

Scientific Name	Common Name	Status (Federal/State/CRPR/ County/City of LA)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Calochortus clavatus var. *gracilis*	slender mariposa lily	None/None/1B.2/LA County/None	Chaparral, coastal scrub, valley and foothill grassland/perennial bulbiferous herb/Mar–June/1,050–3,281	Present. This species was observed during focused plant surveys conducted in May 2018. Populations were identified within the northern portion of survey area north of Copper Hill Drive, within the central portion of the survey area south of Golden Valley Road and north of Sierra Highway, and a few populations located south of SR-14. Suitable habitat for this species occurs within the study area.
Calochortus plummerae	Plummer's mariposa lily	None/None/4.2/LA County/City of LA	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland; granitic, rocky/perennial bulbiferous herb/May–July/328–5,577	Present. This species was observed during focused plant surveys conducted in May 2018. Populations were identified within the central portion of the survey area south of Golden Valley Road and north of Sierra Highway. Suitable habitat for this species occurs within the study area.
Calystegia peirsonii	Peirson's morning-glory	None/None/4.2/LA County/City of LA	Chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill	Present. This species was observed during focused plant surveys conducted in May 2018. Populations were identified within the

Scientific Name	Common Name	Status (Federal/State/CRPR/ County/City of LA)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			grassland/perennial rhizomatous herb/Apr–June/98–4,921	central portion of the survey area south of Golden Valley Road and North of Sierra Highway, and a few populations located south of SR-14. Suitable habitat for this species occurs within the study area.
Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2/LA County/None	Chaparral, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–May/66–3,133	Present. This species was observed during focused plant surveys conducted in May 2018. One individual was identified within the central portion of the survey area south of Golden Valley Road and North of Mad Road. Suitable habitat for this species occurs within the study area.
Juglans californica	Southern California black walnut	None/None/4.2/LA County/City of LA	Chaparral, cismontane woodland, coastal scrub; alluvial/ perennial deciduous tree/Mar–Aug/164–2,953	Present. This species was observed during focused plant surveys conducted in August 2017 and May 2018. Populations were identified mainly within the southern portion of the survey area south of Sierra Highway, and a few scattered populations located north of Sierra Highway. Suitable habitat for this species occurs within the study area.

CRPR = California Rare Plant Rank; LA = Los Angeles; SR = State Route.
Status Legend:
CRPR 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere.
CRPR 3 = Plants About Which More Information is Needed - A Review List.

CRPR 4 = Plants of Limited Distribution - A Watch List.
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat).
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat).
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).
SEA = Sensitive species occurring or potentially occurring within a Significant Ecological Area (SEA) (County of Los Angeles 2006).
S = Sensitive within the City of Los Angeles (City of Los Angeles 2006b).

As shown in Table 3.3-3, no state or federally listed plant species were detected during general and focused surveys conducted for the special-status plant survey area in 2017 and 2018. Five non-listed special-status plant species were observed within the survey area during focused surveys conducted in August 2017 and May 2018: slender mariposa lily (Calochortus clavatus var. gracilis), Plummer's mariposa lily (Calochortus plummerae), Peirson's morning-glory (Calystegia peirsonii), Palmer's grapplinghook (Harpagonella palmeri), and California walnut. These species are discussed in further detail below.

Slender Mariposa Lily (*Calochortus clavatus* var. *gracilis*)

Slender mariposa lily is a CRPR 1B.2, as well as a locally-designated sensitive species within County Significant Ecological Areas (SEAs). Slender mariposa lily is a perennial bulbiferous herb, endemic to California, and is found in chaparral, coastal scrub, and valley and foothill grasslands (CNPS 2018). This species' blooming period is from March to June. Slender mariposa lily occurs between 1,050 and 3,281 feet amsl.

This species was observed on steep hillsides within non-native grasslands and coastal sage scrub in the northern and central portions of the survey area. Six populations were observed north of Copper Hill Drive with populations consisting of one to three individuals. Five populations were observed south of Golden Valley Road and north of Sierra Highway with populations consisting of five to 100 individuals. Three populations were observed south of SR-14 with populations consisting of one to 60 individuals.

Plummer's Mariposa Lily (*Calochortus plummerae*)

Plummer's mariposa lily is a CRPR 4.2, as well as a locally-designated sensitive species within County SEAs and the City of Los Angeles. Plummer's mariposa lily is a perennial bulbiferous herb, endemic to California, and is found in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grasslands (CNPS 2018). This species' blooming period is from May to July. Plummer's mariposa lily occurs between 328 and 5,577 feet amsl.

This species was observed on steep hillsides within chaparral habitat in the central portion of the special-status plant survey area. Three populations were observed between 280 and 420 feet south of Golden Valley Road with populations consisting of three to eighteen individuals. One individual was observed approximately 960 feet south of Mad Road.

Peirson's Morning-Glory (*Calystegia peirsonii*)

Peirson's morning-glory is a CRPR 4.2, as well as a locally-designated sensitive species within County SEAs and the City of Los Angeles. Peirson's morning-glory is a perennial rhizomatous herb, endemic to California, and is found in chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and

foothill grasslands (CNPS 2018). This species' blooming period is from April to June. Peirson's morning-glory occurs between 98 and 4,921 feet amsl.

This species was observed within various habitat types (i.e., non-native grassland, upland mustard, coastal sage scrub, chaparral, oak woodland) in the central and southern portions of the survey area. One population was observed north of Santa Clara River, with the population consisting of three individuals. One population was observed south of Centre Point Parkway, with the population consisting of greater than 50 individuals. Seven populations were observed south of Golden Valley Road and north of Sierra Highway, with populations consisting of one to 30 individuals. Five populations were observed south of Sierra Highway, with populations consisting of one to 50 individuals.

Palmer's Grapplinghook (*Harpagonella palmeri*)

Palmer's grapplinghook is a CRPR 4.2, as well as a locally-designated sensitive species within County SEAs. Palmer's grapplinghook is an annual herb, known from California, Arizona, Baja California, and Sonora and is found in chaparral, coastal scrub, and valley and foothill grasslands (CNPS 2018). This species' blooming period is from March to May. Palmer's grapplinghook occurs between 66 and 3,133 feet amsl.

This species was observed within chaparral in the central portion of the survey area. One individual was observed approximately 175 feet south of Golden Valley Road.

Southern California Black Walnut (*Juglans californica*)

Southern California black walnut is a CRPR 4.2 plant. This species is also considered a protected tree by the City of Los Angeles, as well as a locally-designated sensitive species within County SEAs and the City of Los Angeles. California walnut is a native perennial deciduous tree endemic to California and can be found in chaparral, cismontane woodland, coastal scrub, and riparian woodlands in alluvial environments (CNPS 2018). This species' blooming period from March through August. California walnut grove is also recognized as a sensitive vegetation community by CDFW and the City of Los Angeles. Southern California black walnut occurs at elevations between 164 and 2,953 feet amsl.

This species was observed mainly within the southern portion of the survey area, with a few scattered populations located north of Sierra Highway. One individual observed within the northern portion of the survey area north of Copper Hill Drive. Two populations were observed within the central portion of the survey area, with populations consisting of one to two individuals. Thirty-nine populations were observed south of Sierra Highway, with populations consisting of one to 55 individuals.

Wildlife Diversity

The study area supports habitat for a diverse number of upland, woodland, and riparian wildlife species. With the exception of the disturbed and developed lands, which are regularly maintained, the grassland, shrubland, woodland upland communities, and the riparian vegetation associated with the study area provide a diversity of suitable habitat for wildlife species. A total of 123 wildlife taxa were recorded within the study area during surveys conducted from 2017 through 2019. The survey area provides suitable habitat for invertebrates, amphibians, reptiles, birds, and mammals.

The cumulative list of wildlife species observed during surveys conducted within the study area and focused survey efforts is provided in Appendix D to this Draft EIR.

Special-Status Wildlife Species

Based on suitable habitat mapped within the study area, various focused special-status biological survey efforts (i.e., focused special-status plants; arroyo toad (*Anaxyrus californicus*; ARTO); California red-legged frog (*Rana aurora*; CRF); coastal California gnatcatcher (*Polioptila californica californica*; CAGN); southwestern willow flycatcher (*Empidonax traillii extimus*; SWFL), least Bell's vireo (*Vireo bellii pusillus*; LBVI), and western spadefoot toad (*Spea hammondii*; WESP); burrowing owl (*Athene cunicularia*) habitat assessment; and jurisdictional delineation were conducted within suitable habitat identified within the proposed project footprint, including a suitable buffer from the proposed project footprint. (Figure 3.3-1, Survey Areas).

Table 3.3-4 includes a list of all special-status wildlife species detected or with a moderate to high potential to occur within the survey area.

Table 3.3-4. Special-Status Wildlife Species Detected or with Moderate to High Potential to Occur within the Survey Area

Common Name	Scientific Name	Status (Federal/State/ County/City of LA)	Habitat	Potential to Occur
Amphibians				
western spadefoot	*Spea hammondii*	None/SSC/County of LA/City of LA	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	Moderate potential to occur. An egg cluster for this species was identified within some remaining shallow ponds greater than 500 feet from the proposed project during the focused arroyo toad survey conducted in 2018. Although this species was not observed within the 500-foot study area and minimal suitable breeding habitat for this species occurs within the survey area, suitable upland habitat occurs within the study area.
Reptiles				
Blainville's horned lizard	*Phrynosoma blainvillii*	None/SSC/County of LA/City of LA	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Moderate potential to occur. There is suitable habitat (i.e., open sandy areas within coastal scrub, chaparral, riparian, and grassland habitats) present within the study area. This species was not observed during numerous surveys conducted between 2017 and 2019; however, there are known occurrences for this species within 5 miles of the project alignment (CDFW 2018a).

Table 3.3-4. Special-Status Wildlife Species Detected or with Moderate to High Potential to Occur within the Survey Area

Common Name	Scientific Name	Status (Federal/State/ County/City of LA)	Habitat	Potential to Occur
California glossy snake	*Arizona elegans occidentalis*	None/SSC/None/ None	Commonly occurs in desert regions throughout Southern California. Prefers open sandy areas with scattered brush. Also found in rocky areas.	Present. This species was observed within the Santa Clara River during focused arroyo toad surveys conducted in 2018. There is suitable open habitat with sandy soils and this species has known occurrences within 5 miles of the project (CDFW 2018a).
California legless lizard	*Anniella sp.*	None/SSC/None/ None	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and sandy or loose, loamy soils; moisture is essential	Moderate potential to occur. There is suitable chaparral and oak woodlands and sandy soils within the study area. This species was not observed during numerous surveys conducted between 2017 and 2019; however, there are known occurrences for this species within 5 miles of the project (CDFW 2018a).
San Diegan tiger whiptail	*Aspidoscelis tigris stejnegeri*	None/SSC/County of LA/None	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Present. This species was observed within the southern portion of the survey area during surveys conducted in 2018. There are suitable open chaparral and riparian habitats throughout the study area. This species has known occurrences within 5 miles of the project (CDFW 2018a).
Birds				
American peregrine falcon	*Falco peregrinus anatum* (nesting)	FDL/SDL,FP/ County of LA/ City of LA	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	Present. This species was observed within the southern portion of the study area during surveys conducted in 2018. No nests were discovered during surveys, however there are cliffs and buildings suitable for nesting within the study area.
Burrowing owl	*Athene cunicularia* (burrowing sites/ wintering sites)	None/SSC/County of LA/City of LA	Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas	Moderate potential to occur. Suitable habitat present and suitable burrows were observed during 2017 and 2018 field surveys. Although a focused breeding-season survey was not conducted for this species, individuals and/or sign were not detected during numerous field surveys conducted

Table 3.3-4. Special-Status Wildlife Species Detected or with Moderate to High Potential to Occur within the Survey Area

Common Name	Scientific Name	Status (Federal/State/ County/City of LA)	Habitat	Potential to Occur
				between 2017 and 2019. This species has known occurrences within 5 miles of the project area (CDFW 2018a).
grasshopper sparrow	*Ammodramus savannarum* (nesting)	None/SSC/None/ None	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	Moderate potential to occur. Although no individuals or nests were detected during surveys, there is suitable non-native grassland habitat within the project area. This species has known occurrences within 5 miles of the project area (CDFW 2018a).
loggerhead shrike	*Lanius ludovicianus* (nesting)	None/SSC/County of LA/City of LA	Nests and forages in open habitats with scattered shrubs, trees, or other perches	Present with moderate potential to nest. This species was detected within the northern portion of the study area during surveys conducted between 2017 and 2019. Although no active nests were detected during surveys, there is suitable nesting habitat located within the study area. This species has known occurrences within 5 miles of the project (CDFW 2018a).
olive-sided flycatcher	*Contopus cooperi* (nesting)	None/SSC/None/ None	Nests in mixed-conifer, montane hardwood–conifer, Douglas-fir, redwood, red fir, and lodgepole pine habitats; usually close to water	Present but not expected to nest. This species was detected within the northern portion of the study area during the 2018 field surveys; however, this species is unlikely to nest within the study area due to lack of suitable vegetation.
white-tailed kite	*Elanus leucurus* (nesting)	None/FP/County of LA/City of LA	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Present with moderate potential to nest. This species was observed foraging within the northern portion of the survey area during 2018 field surveys. Although no active nests were detected during surveys, suitable nesting vegetation is present within the study area. This species has known occurrences within 5 miles of the project (CDFW 2018a).
willow flycatcher	*Empidonax traillii* (nesting)	None/SE/County of LA/City of LA	Nests in wet meadow and montane willow riparian	Present but not expected to nest. This species was detected within the southern portion of the study area during the 2018 field surveys; however, this species is not expected to nest within the study area as riparian habitat within the study area

Table 3.3-4. Special-Status Wildlife Species Detected or with Moderate to High Potential to Occur within the Survey Area

Common Name	Scientific Name	Status (Federal/State/ County/City of LA)	Habitat	Potential to Occur
				is too minimal to provide suitable nesting habitat for this species. Additionally, this species was not observed during focused surveys for the southwestern sub-species (*Empidonax traillii* ssp. *extimus*), and is likely a migrant individual.
yellow-breasted chat	*Icteria virens* (nesting)	None/SSC/County of LA/City of LA	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Present but not expected to nest. This species was detected within the northern portion of the study area during the 2018 field surveys; however this species is not expected to nest within the study area, as riparian habitat within the study area is too minimal to provide suitable nesting habitat for this species.
yellow warbler	*Setophaga petechia* (nesting)	None/SSC/County of LA/City of LA	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Present with moderate potential to nest. This species was detected within the northern portion of the survey area, north of Copper Hill Drive, during 2018 field surveys. Suitable nesting vegetation is present within the study area.
Mammals				
pallid bat	*Antrozous pallidus*	None/SSC/County of LA/City of LA	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	Moderate potential to roost and forage. There are rocky outcrops and cliffs with crevices as well as trees and man-made structures (i.e., bridges) suitable for roosting within the study area. Suitable foraging habitat also occurs within the study area.
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	None/SSC/County of LA/City of LA	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	Present. This species was observed within the Santa Clara River during 2018 field surveys. Suitable habitat (i.e., open areas, grassland, disturbed areas, and coastal scrub habitats) is present within the study area. This species has known occurrences within 5 miles of the project (CDFW 2018a).

Table 3.3-4. Special-Status Wildlife Species Detected or with Moderate to High Potential to Occur within the Survey Area

Common Name	Scientific Name	Status (Federal/State/ County/City of LA)	Habitat	Potential to Occur
San Diego desert woodrat	*Neotoma lepida intermedia*	None/SSC/County of LA/City of LA	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	High potential to occur. Potential middens were observed within the northern and central portions of the study area, north of Sierra Highway, and there is suitable habitat (i.e., coastal scrub and chaparral) present throughout the study area. In addition, this species has known occurrences within 5 miles of the project (CDFW 2018a).
southern grasshopper mouse	*Onychomys torridus ramona*	None/SSC/County of LA/City of LA	Grassland and sparse coastal scrub	Moderate potential to occur. There is suitable grassland and coastal scrub habitat present within the study area.
spotted bat	*Euderma maculatum*	None/SSC/County of LA/None	Foothills, mountains, desert regions of Southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	High potential to roost and forage. There are rocky outcrops and cliffs with crevices suitable for roosting within the study area. Suitable foraging habitat also occurs within the study area. This species has known occurrences within 5 miles of the project (CDFW 2018a).
western mastiff bat	*Eumops perotis californicus*	None/SSC/County of LA/City of LA	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	High potential to roost and forage. There are rocky outcrops and cliffs with crevices suitable for roosting within the study area. Suitable foraging habitat also occurs within the study area. This species has known occurrences within 5 miles of the project (CDFW 2018a).
Invertebrates				
vernal pool fairy shrimp	*Branchinecta lynchi*	FT/None/County of LA/None	Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats	Moderate potential to occur. Suitable vernal pools detected approximately 235 feet north of Santa Clara River within the study area. This species has known occurrences within 5 miles of the project (CDFW 2018a; USFWS 2018a).

LA = Los Angeles; FE: Federally Endangered; FT = Federally Threatened; FDL = Federally De-Listed; SSC = CDFW Species of Special Concern; FP = CDFW Fully Protected Species; SE = State Endangered; ST = State Threatened; SDL = State De-Listed; PST = Proposed State Threatened; SEA = Sensitive species occurring or potentially occurring within a Significant Ecological Area (SEA) (County of Los Angeles 2006); S = Sensitive within the City of Los Angeles (City of Los Angeles 2006b).

As shown on Table 3.3-4, no state and/or federally listed wildlife species were detected during general and focused surveys conducted between 2017 and 2019 throughout the study area. Two non-listed CDFW Fully Protected species were detected during the focused field surveys conducted in 2018: American peregrine falcon and white-tailed kite. Seven non-listed CDFW Species of Special Concern were detected within the study area during general and focused surveys: California glossy snake, loggerhead shrike (*Lanius ludovicianus*), olive-sided flycatcher (*Contopus cooperi*), San Diegan tiger whiptail, San Diego black-tailed jackrabbit, yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*). Eleven other special-status species were determined to have at least a moderate potential to occur within the study area: vernal pool fairy shrimp (*Branchinecta lynchi*), WESP, Blainville's horned lizard (*Phrynosoma blainvillii*), California legless lizard (*Anniella* sp.), burrowing owl, grasshopper sparrow (*Ammodramus savannarum*), pallid bat (*Antrozous pallidus*), San Diego desert woodrat (*Neotoma lepida intermedia*), southern grasshopper mouse (*Onychomys torridus ramona*), spotted bat (*Euderma maculatum*), and western mastiff bat (*Eumops perotis californicus*).

The results of the focused assessment conducted are presented below:

Burrowing Owl Habitat Assessment Survey Results

Burrowing owl is a CDFW SSC, as well as a locally-designated sensitive species within County SEAs and the City of Los Angeles. With a relatively wide-ranging distribution throughout the west, burrowing owls are considered to be habitat generalists (Lantz et al. 2004). In California, this small owl generally inhabits open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats (Zeiner et al. 1990). Preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils (Haug et al. 1993).

The presence of burrows is the most essential component of burrowing owl habitat as they are required for nesting, roosting, cover, and caching prey (Coulombe 1971; Martin 1973; Green and Anthony 1989; Haug et al. 1993). In California, western burrowing owls most commonly live in burrows created by California ground squirrels (*Spermophilus beecheyi*). Burrowing owls may occur in human-altered landscapes such as agricultural areas, ruderal grassy fields, vacant lots, and pastures if the vegetation structure is suitable (i.e., open and sparse), useable burrows are available, and foraging habitat occurs in close proximity (Gervais et al. 2008). Debris piles, riprap, culverts, and pipes can be used for nesting and roosting.

The burrowing owl survey area supports suitable habitat for burrowing owl and numerous suitable burrows occur throughout the project alignment. Although a focused breeding-season survey was not conducted for this species, individuals and/or sign were not detected during abundant field surveys conducted between 2017 and 2019. Nonetheless, numerous suitable burrows for this species were observed within suitable grasslands and open areas within the survey area, and this species is known to occur within 5 miles of the project (CDFW 2018a). Thus, burrowing owl has a moderate potential to occur in flat areas within grasslands, chamise/annual grass-forb, disturbed habitat, upland mustards, unvegetated channel, and unvegetated channel/disturbed habitats located throughout the study area.

Focused Least Bell's Vireo and Southwestern Willow Flycatcher Surveys

The LBVI and SWFL are both state- and federally-listed endangered species (SE, FE), as well as locally-designated sensitive species within the City of Los Angeles. Both species are closely associated with riparian habitats: LBVI prefer to nest in riparian scrub habitat with early to mid-successional riparian vegetation (Kus 2002), whereas SWFL prefer to nest within contiguous riparian forest habitat that is at least 30 feet wide with slow-moving water sources or saturated soils present (Sogge et al. 2010).

Focused surveys for LBVI and SWFL were initiated on May 17, 2018. Surveys for SWFL were completed on July 10, 2018, and focused surveys for LBVI were completed on July 31, 2018. Approximately 37 acres of suitable LBVI and SWFL habitat were surveyed during the 2018 focused survey effort for these species. No LBVI or SWFL were observed within the LBVI and SWFL focused survey area during focused surveys for these species. Although no federally-listed SWFL were observed within the study area, one state-listed SWFL was detected within Fremont cottonwood-mulefat habitat during a focused CAGN survey pass conducted on May 17, 2018; however, this species was not observed during any other surveys conducted within the focused survey effort. Thus, it was determined to be a migrant species, since it did not remain within the focused survey area during the remainder of the survey effort. After conducting focused surveys for these species, updated project designs include additional work areas that may have adjacent habitat suitable to support LBVI and SWFL. Areas not included during the focused survey effort are addressed separately and are based on the presence of suitable LBVI and SWFL habitat within and adjacent to the proposed additional work areas.

Focused Coastal California Gnatcatcher Breeding Survey

The CAGN is a federally-listed threatened (FT) species, a CDFW SSC, and a locally-designated sensitive species within the City of Los Angeles. It is closely associated with coastal sage scrub habitat and typically occurs below 950 feet elevation and on slopes less than 40% (Atwood and Bolsinger 1992), but CAGN have been observed at elevations greater than 2,000 feet (Unitt 2004).

Focused surveys for CAGN were conducted between May 7 and June 15 in 2018. Approximately 373 acres of suitable CAGN habitat were surveyed during the 2018 focused surveys for this species. No CAGN (i.e., individuals and/or nests) were detected within the CAGN survey area during the focused survey effort conducted for this species during the 2018 breeding season. After conducting focused surveys for CAGN, updated project designs include additional work areas that may have adjacent habitat suitable to support this species. Areas not included during the focused survey effort are addressed separately and are based on the presence of suitable CAGN habitat within and adjacent to the proposed additional work areas.

Focused Arroyo Toad Survey

The ARTO is a federally-listed endangered species, a CDFW SSC, and a locally-designated sensitive species within the City of Los Angeles. This species is restricted to rivers that have shallow, gravelly pools or back water areas adjacent to sandy terraces for breeding (Nafis 2016). Breeding typically occurs from late-March to mid-June and eggs are deposited in shallow

pools with little emergent vegetation (Nafis 2016). After the breeding season, ARTO may move 1.5 kilometers or more, over any terrain, but primarily travel along water courses (Nafis 2016).

Focused ARTO surveys were conducted between April 26 and June 14 of 2018. All suitable breeding habitat within the study area were included within the focused surveys for this species. No ARTO or egg clusters were observed within the ARTO survey area during focused surveys for this species.

Focused Western Spadefoot Toad Survey

WESP is a CDFW SSC, as well as a locally-designated sensitive species within County SEAs and the City of Los Angeles. This primarily terrestrial toad spends most of its life in underground refugia and emerges after seasonal rains to breed in vernal pools and other ephemeral water features (Nafis 2016). This species generally inhabits open areas within a wide variety of habitats (e.g., mixed woodlands, grasslands, coastal scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains) with sandy or gravelly soils (Nafis 2016).

Focused surveys for WESP were conducted between April 26 and July 31, 2018. No WESP toads or egg clusters were observed within the WESP survey area; however, a WESP egg cluster was observed within a temporary, shallow pond outside of the 500-foot WESP survey area during the May 29, 2018 survey pass conducted for the ARTO focused survey. The WESP observation is located approximately 560 feet east of the project alignment (outside of the 500-foot study area), and minimal suitable breeding habitat for this species was identified within the WESP survey area. Nevertheless, suitable upland habitat (i.e., woodlands, grasslands, coastal scrub, chaparral, sandy washes, and river floodplains) is present within the study area (i.e., WESP survey area) in close proximity to the WESP egg cluster observation. Therefore, WESP has a moderate potential to occur in woodlands, grasslands, coastal scrub, chaparral, sandy washes, river floodplains in the vicinity of the Santa Clara River and its tributaries within the study area.

Focused California Red-Legged Frog Surveys

CRF is federally listed as threatened, a CDFW SSC, and a locally-designated sensitive species within the City of Los Angeles. CRF can survive in a variety of habitat types, including various aquatic, riparian, and upland habitats, and requires perennially-available surface water present (Storer 1925; Calef 1973; Jennings et al. 1993).

During the habitat assessment and focused survey for CRF was conducted on August 8, 2017, it was concluded that only two areas contained any evidence of water and only supported small ponds, within disturbed and isolated habitats. Therefore, it was determined that minimal aquatic habitat within the survey area is unlikely to support this species during the non-breeding season. None of the features provide suitable breeding habitat for CRF due to their lack of inundation, lack of aquatic vegetation, and/or shallow depth. Additionally, these features do not provide suitable summer refugia due to a lack of sustained inundation. Although these features may provide temporary shelter for migrating frogs, the majority of the features are greater than 1.6 km (1 mile) from known CRF occurrences. As such, CRF are not likely to occur within the study area.

Critical Habitat

The project alignment passes through USFWS Designated Critical Habitat for CAGN, located approximately 1.1 miles north of the project's southern terminus (USFWS 2018a;).

Several other USFWS-designated critical habitats occur within 5 miles of the study area, LBVI, SWFL, CRF, ARTO, Santa Ana sucker, and spreading navarretia. Of these, the closest USFWS-designated critical habitat is for CRF, located approximately 1.7 miles north/northwest of the study area. The remaining species are approximately 3 to 5 miles from the survey area. However, the study area and adjacent areas do provide suitable habitat for all species listed above (USFWS 2018a).

Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for dispersal or migration of animals and dispersal of plants (e.g., via wildlife vectors). Wildlife corridors contribute to population viability by assuring continual exchange of genes between populations, which helps maintain genetic diversity; providing access to adjacent habitat areas representing additional territory for foraging and mating; allowing for a greater carrying capacity; and providing routes for colonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes (i.e., the rescue effect).

Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. They serve as connections between habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage is a potential route for gene flow and long-term dispersal. Habitat linkages may serve both as habitat and avenues of gene flow for small animals such as reptiles, amphibians, and rodents. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as stepping stones for dispersal and movement (especially for birds and flying insects). Wildlife corridors and habitat linkages provide avenues for dispersal or migration of animals that also contribute to population viability in several ways, including (1) ensuring continual exchange of genes between populations to aid in maintaining genetic diversity, (2) providing habitat for some species, (3) providing access to adjacent habitat areas representing additional territory for foraging and mating, (4) allowing for a greater carrying capacity, and (5) providing routes for colonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes.

The approximate 12-mile long north-south project alignment traverses areas identified as important linkages for wildlife movement by the City of Santa Clarita, unincorporated County, and South Coast Missing Linkages Project (SCML). Although the project alignment also traverses the City of Los Angeles along its southern extent, it does not reside within any designated wildlife corridor linkages within the City of Los Angeles.

Several key wildlife movement corridors, generally located in undisturbed canyons and ravine stream habitat areas, have been identified within the City of Santa Clarita. Important wildlife movement areas identified by the Santa Monica Mountains Conservancy (SMMC) and the Mountain Recreation and Conservation Authority (MRCA) throughout the

Santa Clarita Valley include Elsmere Canyon, Towsley Canyon, Weldon/Bee Canyon, crossings along SR-14 near Whitney Canyon, and crossings between Canyon Country and Sulphur Springs (City of Santa Clarita 2011). The Whitney Canyon Movement Route and the highway underpass known as the Los Pinetos undercrossing have been identified as providing important linkage corridors within the mountainous areas along SR-14 between Newhall Avenue and Sand Canyon Road. These corridors are important because they link significant coastal sage scrub, oak woodland and riparian woodland and scrub habitats (City of Santa Clarita 2011). Additionally, the SCML has developed a wildlife corridor linkage design for the San Gabriel-Castaic Connection, which provides for a wildlife corridor that connects the two sections of the Angeles National Forest within the City of Santa Clarita. The San Gabriel-Castaic Connection linkage design incorporates several branches of wildlife corridor to accommodate diverse species and ecosystem functions, including a northwest branch (which is dominated by coastal sage scrub and chaparral and encompasses portions of Bee, Spring, Tapia, Tick, and Mint Canyons), the eastern branch connects a series of desert scrub and juniper habitats, and the third branch follows the Santa Clara River and Soledad Canyon (which provides large stepping-stones of habitat for semi-aquatic species) (Penrod et al. 2004). The proposed project alignment traverses areas known to provide important wildlife linkages through the Santa Clarita Valley, including Elsmere Canyon, Whitney Canyon, Placerita Canyon, and the Santa Clara River.

The portion of the Santa Clara River that passes through the City of Santa Clarita is within the Santa Clara River SEA and is linked to the river basin along its entirely length, consisting of a dry, ephemeral channel that supports seasonal runoff flows. The Santa Clara River is dominated by stands of alluvial sage scrub formations, riparian woodland, and southern riparian scrub (County of Los Angeles 2015b). The continued genetic isolation of the unarmored three-spined stickleback population in the upper reaches of the Santa Clara River rely on these dry zones within the river (County 2012). Additionally, the Santa Clara River and tributary drainages provide an important wildlife movement zone that supports shelter, foraging, and resident habitat for aquatic and terrestrial wildlife species through the County. The project alignment (along its more northern portion) spans over the Santa Clara River within the designated Santa Clara River SEA in the City of Santa Clarita.

The more southern portion of the proposed project alignment traverses the portion of the Santa Clara River SEA within unincorporated Los Angeles County and City of Santa Clarita. This portion of the Santa Clara River SEA is an important regional habitat linkage and east–west wildlife movement corridor for the larger high-mobility species such as mule deer, cougar, and bobcat. Both mule deer and bobcat were observed within the proposed project. The riparian habitats in the proposed project (e.g., mulefat, Fremont cottonwood, black willow thickets etc.), may serve as foraging or resting habitat for migratory birds and other species traveling through the area. Furthermore, the proposed project supports natural vegetation communities dominated by woodland, chaparral, grasslands, and coastal scrub habitats, which support localized wildlife movement through numerous canyons within the proposed project. The proposed project also provides core habitat for smaller mammals, birds, reptiles, and amphibians in the area.

Jurisdictional Waters

A formal jurisdictional delineation within the 1,012-acre jurisdictional delineation survey area was conducted on August 22-24, 2017 and January 21-23 and January 30, 2019. The results of the jurisdictional delineation are shown in Figures 11-1 through 11-28 of Appendix D. A total of 33 soil samples were taken throughout the survey area. The

12-mile project alignment traverses the southern Angeles National Forest and northern San Gabriel Mountains as well as Haskell Canyon, Bouquet Canyon, and Placerita Canyon. The Santa Clara River is the largest water feature in the project vicinity and bisects the project alignment at the northern end. Many of the drainages mapped within the survey area drain into the Santa Clara River through a series of tributaries. Within the southern portion of the alignment, the two primary hydrologic features are Bull Creek, which ultimately discharges into the Los Angeles River, and Van Norman Reservoir, portions of which outlet into Bull Creek.

A portion of Haskell Canyon Creek was mapped in the northern portion of the survey area as an unvegetated channel; Haskell Canyon Creek is channelized into a wide concrete-lined channel just north of Copper Hill Drive. Haskell Canyon Creek then flows south and off site into Bouquet Canyon Creek. Within the project alignment, Bouquet Canyon Creek is wide concrete-lined channel which flows south and off site into the Santa Clara River. The drainage mapped north of Golden Valley Road and east of Newhall Ranch Road flows south into the Santa Clara River.

A portion of the Santa Clara River floodplain is located inside of the survey area and there are two low flow channels and adjacent non-wetland mulefat areas that are connected to the floodplain. Several ephemeral unnamed channels are mapped in the project alignment that flow directly or indirectly into the Santa Clara River. There are three small depressional features mapped near some existing towers just north of the Santa Clara River. These features are mapped as potential vernal pools based on a lack of vegetation in the depressions compared to the surrounding land and water present in some of these during the site visits. They are located in an area that has been modified by infrastructure and may not be naturally-occurring vernal pools. However, during rare plant surveys both short woollyheads (*Psilocarphus brevissimus* var. *brevissimus*) and toad rush (*Juncus bufonius*) were observed in these depressions.

The topography and hydrology in the southern project alignment have been significantly altered with oil and gas drilling near Placerita Canyon and Sierra Highway. These changes over the last 50+ years have permanently altered the hydrology; however, based on the field visit and review of current and historical aerial and topographic maps, these features apparently connect to a traditional navigable water (TNW) or tributary to a TNW. The ACOE will determine if these features are waters of the U.S. through a preliminary jurisdictional determination.

Based on the topographic maps (USGS 2018a) and NHD data (USGS 2018b), a portion of the central part of the alignment indirectly flows into the Newhall Creek, which empties into Placerita Creek to the northwest.

The drainages to the southern portion of the alignment (shown on Figure 11-23 in Appendix D) have been historically altered as a result of the I-5 and I-210 corridor, as well as adjacent roads and industrial and commercial development, which have changed the surface hydrology to the point where connectivity with a TNW is questionable. However, topography and stormwater infrastructure indicate that connectivity with Bull Creek is present via structures under Sierra Highway and I-5.

The drainages within the southern portion of the alignment (shown on Figures 11-21, 11-22 and 11-24 in Appendix D) flow south through unnamed tributaries toward the area previously the Cascades Golf Course.

The installation and subsequent removal of the Cascades Golf Course, as well as commercial, residential, and utility development near the alignment on Silver Oaks Drive, north of the I-5 and I-210 intersection, resulted in the installation of culverts, re-direction of channels, and creation of berms where drainages terminate. These historical disturbances within Grapevine Canyon have resulted in the alteration of the hydrologic processes, including the separation of features that were likely connected to Bull Creek in the past. These alterations, although substantial, have not eliminated the formation and persistence of wetland indicators that meet the definition of wetland and non-wetland waters of the U.S.; however, surface connectivity with a TNW is questionable and not readily apparent. Stormwater infrastructure constructed as part of I-210 and the industrial and commercial developments is presumed to be the primary water conveyance mechanism in the vicinity of these features and is expected to transport flows originating from the feature to the Van Norman Reservoir Complex.

There are two areas of mulefat thickets and red willow thickets west of Silver Oaks Drive that are mapped as 3-parameter wetlands that may be regulated by the ACOE (to be determined through a preliminary jurisdictional determination). The remaining riparian areas in this area did not meet the 3-parameter wetland criteria and are mapped as riparian habitat under CDFW (shown on Figures 11-25 and 11-26 in Appendix D). The drainage shown on the southern end of the alignment (shown on Figure 11-27 in Appendix D) appears to drain adjacent runoff south into the Van Norman Reservoir Complex.

The basin located south of San Fernando Road appears to be regularly maintained and was dominated by bare ground or upland grasses and forbs during the site visit. This basin is assumed to connect to the Van Norman Reservoir Complex due to the presence of an outlet structure and proximity of the Reservoir; therefore, the majority of the basin is a non-wetland waters of the U.S. (shown on Figure 11-28 in Appendix D). A portion of the basin supports cattail marsh and meets the criteria of a wetland waters of the U.S. based on hydrophytic vegetation, hydric soils, and hydrology indicators.

Where riparian vegetation occurs adjacent to a drainage, Dudek mapped the areas as riparian habitat subject to regulation by CDFW. Some features had riparian vegetation within the drainage; however, the soil sampling results concluded these did not meet the 3-parameter wetland criteria. In these circumstances, the feature was mapped as a non-wetland water (unvegetated stream channel) under ACOE and/or RWQCB jurisdiction and riparian habitat under CDFW jurisdiction.

Approximately 36.56 acres of waters of the U.S. and/or state occur within the survey area. Table 3.3-5 below provides a summary of the wetland and non-wetland waters of the U.S. and state mapped within the survey area.

Table 3.3-5. Jurisdictional Features Within the Jurisdictional Delineation Study Area

Potential Jurisdiction	ACOE Class	RWQCB Class	CDFW Class	Acres	Linear Feet
ACOE/RWQCB/ CDFW	Non-wetland Water - Ephemeral	Non-wetland Water - Ephemeral	Non-wetland Water - Ephemeral	16.65	26,468
	Non-wetland Water - Intermittent	Non-wetland Water - Intermittent	Non-wetland Water - Intermittent	3.51	4,798

Table 3.3-5. Jurisdictional Features Within the Jurisdictional Delineation Study Area

Potential Jurisdiction	ACOE Class	RWQCB Class	CDFW Class	Acres	Linear Feet
	Non-wetland Water - Ephemeral	Non-wetland Water - Ephemeral	Riparian Area	8.62	4,685
	Wetland	Wetland	Riparian Area	0.95	N/A
	Potential Vernal Pool	Potential Vernal Pool	Potential Vernal Pool	0.07	N/A
			Subtotal ACOE/RWQCB/CDFW	*29.80*	*35,951*
CDFW	N/A	N/A	Riparian habitat	6.78	N/A
			Total Jurisdictional Features[1]	*36.58*	*35,951*

Notes: ACOE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife.

1 May not total due to rounding.

Table 3.3-6 shows the summary of the riparian habitat by vegetation community.

Table 3.3-6. Wetland or Riparian Habitat Within the Jurisdictional Delineation Study Area

Vegetation Community	Potential Jurisdiction(s)	
	ACOE/RWQCB/CDFW	*CDFW Only*
Black willow thickets	—	1.29
Cattail marshes	0.02	—
Coast live oak woodland	—	0.72
Fremont cottonwood forest	—	0.41
Fremont cottonwood/mulefat	—	4.29
Fremont cottonwood-coast live oak (including disturbed)	—	0.84
Mulefat thickets	0.45	8.66
Red willow thickets	0.65	2.74
Sandbar willow thickets	—	0.48
Total	1.12	19.46

ACOE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife.

County of Los Angeles Oak Tree Ordinance

CLAOTO prohibits the cutting, destroying, removing, relocating, inflicting damage on, or encroaching into the protected zone (canopy dripline plus 5 feet or 15 feet from trunk, whichever is greater) of any tree of the oak tree genus (*Quercus*) without first obtaining a permit. The prohibitions apply to any act causing or tending to cause injury to the root system or other parts of a tree including burning, application of toxic substances, operation of equipment or machinery, or by paving, changing the natural grade, trenching or excavating within the protected zone of an oak tree. CLAOTO generally applies to trees that are 8 inches or more in diameter (measured at 4.5 feet above the mean natural grade), or any tree that has been provided as a replacement tree (unless an oak tree permit is first obtained).

A tree inventory survey was not conducted for the proposed project; however, oak trees that meet the size criteria for protection under the CLAOTO were observed throughout the segment of the proposed project within unincorporated Los Angeles County during surveys conducted from 2017 through 2019. A tree inventory survey would be required in order to document oak trees protected under this ordinance within the County.

City of Los Angeles Protected Trees

The City of Los Angeles Protected Tree Ordinance, as modified by Ordinance 177404, provides guidelines for the preservation of native Southern California tree species measuring 4 inches or more in cumulative diameter at 4.5 feet above the ground from the base of the tree (City of Los Angeles 2006a). Trees protected under this ordinance include all oak trees indigenous to California (excluding scrub oak), Southern California black walnut, California sycamore, and California bay.

A tree inventory survey was not conducted within the proposed project; however, trees protected under this ordinance were observed throughout the southern segment of the proposed project within the City of Los Angeles during surveys conducted from 2017 through 2019. A tree inventory survey would be required in order to document trees protected under this ordinance within the City of Los Angeles.

City of Santa Clarita Tree Ordinance

The City of Santa Clarita approved Oak Tree Ordinance No. 89-10 as a means of regulating impacts and to preserve all *Quercus* species within the City limits. Per the Santa Clarita Oak Tree Preservation Section 17.51.040, impacts such as pruning, encroaching cutting, relocating or removal of any *Quercus* species without prior approval through an oak tree permit (17.23.170) will not be allowed (City of Santa Clarita 1989).

A tree inventory survey was not conducted for the proposed project; however, oak trees were observed throughout the segment of the proposed project within the City of Santa Clarita during surveys conducted between 2017 and 2019. A tree inventory survey would be required in order to document trees protected under this ordinance within the City of Santa Clarita.

3.3.2 Relevant Plans, Policies, and Ordinances

Federal

The following federal regulations pertaining to biological resources would apply to the proposed project.

Federal Endangered Species Act

The federal Endangered Species Act (FESA) of 1973 (16 USC 1531 et seq.), as amended, is administered by the U.S. Fish and Wildlife Service (USFWS) for most plant and animal species, and by the National Oceanic and Atmospheric Administration National Marine Fisheries Service for certain marine species. FESA is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend, and to provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. FESA defines an endangered species as "any species that is in danger of extinction

throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under FESA, it is unlawful to take any listed species; "take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

FESA allows for the issuance of incidental take permits for listed species under Section 7, which is generally available for projects that also require other federal agency permits or other approvals, and under Section 10, which provides for the approval of habitat conservation plans on private property without any other federal agency involvement. Upon development of a habitat conservation plan, USFWS can issue incidental take permits for listed species.

Section 404 of the Clean Water Act

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredged and/or fill material into waters of the United States. The term "wetlands" (a subset of waters) is defined in 33 Code of Federal Regulations 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." In the absence of wetlands, the limits of ACOE jurisdiction in non-tidal waters, such as intermittent streams, extend to the ordinary high water mark, as defined in 33 Code of Federal Regulations 328.3(e). Pursuant to Section 10 of the Rivers and Harbors Act of 1899, ACOE regulates any potential obstruction or alteration of any navigable water of the United States.

Section 401 of the Clean Water Act

Section 401 of the Clean Water Act (CWA) requires that any applicant for a federal permit for activities that involve a discharge to waters of the United States shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal CWA. Therefore, in California, before the ACOE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification or waiver from the Regional Water Quality Control Board (RWQCB).

Under CWA Section 401, RWQCB regulates at the state level all activities that are regulated at the federal level by ACOE.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was originally passed in 1918 as four bilateral treaties, or conventions, for the protection of a shared migratory bird resource. The primary motivation for the international negotiations was to stop the "indiscriminate slaughter" of migratory birds by market hunters and others (16 USC 703–712). Each of the treaties protects selected species of birds and provides for closed and open seasons for hunting game birds. The MBTA protects more than 800 species. Two species of eagles that are native to the United States—bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*)—were granted additional protection within the United States under the Bald and Golden Eagle Protection Act (16 USC 668–668d) to prevent these species from becoming extinct.

State

The following state regulations pertaining to biological resources would apply to the proposed project.

California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA), which prohibits the take of plant and animal species designated by the Fish and Game Commission as endangered or threatened in California. Under CESA Section 86, "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species, or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

CESA defines an endangered species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." CESA defines a threatened species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the Commission as rare on or before January 1, 1985, is a threatened species." A candidate species is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the Commission has published a notice of proposed regulation to add the species to either list." CESA does not list invertebrate species.

California Fish and Game Code Sections 3503, 3511, 3513, 3801, 4700, 5050, and 5515

Section 2081(b) and (c) of the California Fish and Game Code authorizes take of endangered, threatened, or candidate species if take is incidental to otherwise lawful activity and if specific criteria are met. These provisions also require CDFW to coordinate consultations with USFWS for actions involving federally listed species that are also state-listed species. In certain circumstances, Section 2080.1 of CESA allows CDFW to adopt a federal incidental take statement or a 10(a) permit as its own, based on its findings that the federal permit adequately protects the species and is consistent with state law. A Section 2081(b) permit may not authorize the take of "fully protected" species or "specified birds" (California Fish and Game Code Sections 3505, 3511, 4700, 5050, 5515, and 5517). If a project is planned in an area where a fully protected species or a specified bird occurs, an applicant must design the project to avoid take.

Lake and Streambed Alteration Agreement

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. A

Streambed Alteration Agreement is required for impacts to jurisdictional wetlands in accordance with Section 1602 of the California Fish and Game Code.

Porter-Cologne Water Quality Control Act

RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state" (California Water Code, Section 13260(a)), pursuant to provisions of the state Porter-Cologne Act. "Waters of the state" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050(e)).

Under the Porter-Cologne Act, RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into waters of the state, that are not regulated by ACOE due to a lack of connectivity with a navigable water body.

CEQA

CEQA requires identification of a project's potentially significant impacts on biological resources and ways that such impacts can be avoided, minimized, or mitigated. CEQA also provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts.

Special-Status Plants and Wildlife

The CEQA Guidelines define endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15380[b][1]). A rare animal or plant is defined in CEQA Guidelines Section 15380(b)(2) as a species that, although not currently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing as defined further in CEQA Guidelines Section 15380(c).

Species are considered sensitive if they are (1) listed or proposed for listing by state or federal agencies as threatened or endangered; (2) plant species with a California Rare Plant Rank (CRPR) (formerly California Native Plant Society (CNPS) List) 1 through 4 (CNPS 2018); (3) considered rare, endangered, or threatened by the California Natural Diversity Database (CDFW 2018a-d); or (4) locally designated or recognized by the City of Santa Clarita, the County, and/or the City of Los Angeles. Although plant species with CRPR 3 or 4 may, but generally do not, qualify for protection under this provision. Species with CRPR 3 and 4 are those that require more information to determine status and plants of limited distribution. Thus, only CRPR 3 and 4 plant species that were also locally designated or recognized by the City of Santa Clarita, the County, and/or the City of Los Angeles were analyzed further.

Some mammals and birds are protected by the state as fully protected species, as described in California Fish and Game Code Sections 4700 and 3511, respectively. Fully protected species may not be taken or possessed without a permit

from the California Fish and Game Commission, and no permit is available for the incidental take of a fully protected species. Species considered state candidates for listing as threatened or endangered are subject to the taking prohibitions and provisions under CESA as if the species were listed.

Special-Status Vegetation Communities

Section IV, Appendix G (Environmental Checklist Form) of the CEQA Guidelines (14 CCR 15000 et seq.) requires an evaluation of impacts to "any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game[1] or the U.S. Fish and Wildlife Service."

Local

The following local/regional regulations pertaining to biological resources would apply to the proposed project.

County of Los Angeles General Plan

The County General Plan 2035 (General Plan) was adopted in 2015 and provides the policy framework for growth through the year 2035 for approximately 2,650 square miles of unincorporated portions of the County (County of Los Angeles 2015). The County General Plan Conservation and Natural Resources Element (Chapter 9) guides the long-term conservation of natural resources and preservation of available open space areas. Section III of Chapter 9 describes the goals and policies for biological resources occurring within unincorporated County land. The main types of biological resources in the unincorporated areas are: regional habitat linkages; forests; coastal zone; riparian habitats, streambeds and wetlands; woodlands; chaparral; desert shrubland; alpine habitats; Significant Ecological Areas (SEAs); and Coastal Resource Areas (CRAs). The General Plan works to protect and enhance these resources, and ensure that the legacy of the unique biotic diversity is passed on to future generations.

The County General Plan Conservation and Natural Resources Element of the General Plan provides goals and policies regarding biological resources, including the following:

Goal: Protection of Biological Resources

Policy C/NR 3.1
Conserve and enhance the ecological function of diverse natural habitats and biological resources.

Policy C/NR 3.2
Create and administer innovative County programs incentivizing the permanent dedication of SEAs and other important biological resources as open space areas.

[1] Effective January 1, 2013, the California Department of Fish and Game changed its name to the California Department of Fish and Wildlife. The original name is retained in quoted text.

Policy C/NR 3.3
Restore upland communities and significant riparian resources, such as degraded streams, rivers, and wetlands to maintain ecological function—acknowledging the importance of incrementally restoring ecosystem values when complete restoration is not feasible.

Policy C/NR 3.4
Conserve and sustainably manage forests and woodlands.

Policy C/NR 3.5
Ensure compatibility of development in the National Forests in conjunction with the U.S. Forest Service Land and Resource Management Plan.

Policy C/NR 3.6
Assist state and federal agencies and other agencies, as appropriate, with the preservation of special status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs.

Policy C/NR 3.7
Participate in inter-jurisdictional collaborative strategies that protect biological resources.

Goal: Site Sensitive Design

Policy C/NR 3.8
Discourage development in areas with identified significant biological resources, such as SEAs.

Goal: Woodland Preservation

Policy C/NR 4.1
Preserve and restore oak woodlands and other native woodlands that area conserved in perpetuity with a goal of no net loss of existing woodlands.

County of Los Angeles Significant Ecological Areas

As part of the Conservation and Open Space and Land Use elements of the General Plan, the County has identified and adopted policies since 1970 for the establishment of Significant Ecological Areas (SEAs). These SEAs contain irreplaceable biological resources (i.e., important lands or water areas with valuable plant and animal communities). Thus, SEAs were developed to maintain biological diversity by establishing natural biological parameters (key species, habitat types, and linkages) and recommended management practices. The final boundaries and categories for the 21 SEAs (and 9 Coastal Resource Areas) were established in 2015 with the County Board of Supervisors approval of the General Plan 2035.

Each SEA is sized to support sustainable populations of its component species, and includes undisturbed or lightly disturbed habitat, along with linkages and corridors that promote species movement. Some SEAs are located entirely

or partially outside of the County's jurisdiction in cities, along the coastline, or within National Forest land. SEAs located within unincorporated County areas are administered through County General Plan goals, policies, and implementation programs and by the SEA Conditional Use Permit Ordinance. Although SEAs are located in areas throughout the County, they tend to be concentrated in and around the Angeles National Forest, the Mojave Desert, and the Santa Monica Mountains.

The SEA overlay along with the SEA conditional use permit process are referred to as the SEA Program, which allows the County to implement its biotic resource goals through land use regulations and biological resource assessments. The objective of the SEA Program is to conserve genetic and physical diversity by designating biological resource areas that are capable of sustaining themselves into the future. However, SEAs are not wilderness preserves. Much of the land in SEAs is privately held, used for public recreation, or abuts developed areas. The SEA Program balances resource preservation with other critical public needs.

The proposed project traverses the Santa Clara River SEA (SEA 23) within unincorporated Los Angeles County and City of Santa Clarita jurisdiction. SEA 23 represents the last major unchanneled river in the County and was designated primarily due to the threat of loss of suitable habitat for the federally and state-listed as endangered unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*). Although the majority of the proposed project alignment occurs within incorporated Cities (i.e., the City of Santa Clarita and the City of Los Angeles), outside of the County's jurisdiction, a central portion of the proposed project alignment traverses the Santa Clara River Significant Ecological Area in unincorporated Los Angeles County. The City of Santa Clarita Area wide General Plan and the City of Los Angeles General Plan provide language regarding SEAs to ensure consistency with the overall County Plan.

County of Los Angeles Oak Tree Ordinance

The County of Los Angeles Oak Tree Ordinance (CLAOTO) was established to recognize oak trees as significant historical, aesthetic, and ecological resources within the County. The goal of the ordinance is to create favorable conditions for the preservation and propagation of this unique and threatened plant heritage. By making this part of the development process, healthy oak trees will be preserved and maintained. CLAOTO applies to all unincorporated areas of the County.

Under CLAOTO, a person shall not cut into, destroy, remove, relocate, inflict damage on, or encroach into the protected zone of any tree of the oak tree genus that is 8 inches or more in diameter, 4.5 feet above mean natural grade, or in the case of oaks with multiple trunks, a combined diameter of 12 inches or more of the two largest trunks, without first obtaining a permit.

Additionally, the Los Angeles County Oak Tree Ordinance defines the "Protected Zone" of a tree as, "that area within the dripline of an oak tree and extending therefrom to a point at least five feet outside the dripline, or 15 feet from the trunks of a tree, whichever distance is greater" (Title 22.56.2060). For the purposes of determining tree impacts, trees that have protected zones that have been encroached upon would also be considered impacted.

City of Los Angeles General Plan

The Conservation and Open Space Elements of the City of Los Angeles General Plan addresses the protection of natural resources within the City's limits, including water and hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. These elements were provided to comply with California law. Goals listed in the plan include a City that preserves, protects and enhances its existing natural and related resources, as well as goals to insure preservation and conservation of sufficient open space.

City of Los Angeles Protected Tree Ordinance

The City of Los Angeles Protected Tree Ordinance, as modified by Ordinance 177404, provides guidelines for the preservation of native Southern California tree species, including all native oak trees, as well as other trees protected within the City of Los Angeles, measuring 4 inches or more in cumulative diameter at 4.5 feet above the ground from the base of the tree (City of Los Angeles 2006a). Trees protected under this ordinance include all oak trees indigenous to California (excluding scrub oak (*Quercus dumosa*)), Southern California black walnut (*Juglans californica* var. *californica*), California sycamore (*Platanus racemosa*), and California bay (*Umbellularia californica*).

City of Santa Clarita General Plan

The Conservation and Open Space Element of the City of Santa Clarita General Plan addresses the protection of natural resources within the City's limits, including water and hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. These elements were provided to comply with California law. The plan provides goals that focus on the conservation of biological resources and ecosystems, including sensitive habitats and species, and preservation of open space.

City of Santa Clarita Significant Ecological Area Designations

The City of Santa Clarita recognizes the Santa Clarita SEA within the City limits. The biological and ecological function of the Santa Clarita SEA is linked to the river basin for its entire length. Thus, the biogeographic limits of the SEA extend downstream through Los Angeles and Ventura Counties to its confluence with the Pacific Ocean at its downstream extent and the river basin encompasses significant tributary drainages (i.e., Piru Creek, Sespe Creek, Santa Paula Creek, and Wheeler Creek). The Santa Clara River and its tributary creeks are recognized as the single most important natural feature to facilitate wildlife movement through the County. The segment of the Santa Clara River that passes through the City of Santa Clarita is a dry channel except during seasonal runoff flows, which is essential to the continued genetic isolation of the unarmored three-spine stickleback population in the upper reaches of the river. The river also supports relatively intact stands of alluvial sage scrub, riparian woodland, and southern riparian scrub habitats, providing a continuum of aquatic and terrestrial movement opportunities, shelter, forage, and resident habitat from Ventura to the Antelope Valley. The drainage connects both districts of the Angeles National Forest and links together two large public resource preserves (Vasquez Rocks and Placerita County Natural Areas).

City of Santa Clarita Oak Tree Ordinance

The City of Santa Clarita approved Oak Tree Ordinance No. 89-10 as a means of regulating impacts and to preserve all *Quercus* species within the City limits. Per the Santa Clarita Oak Tree Preservation Section 17.51.040, impacts such as pruning, encroaching cutting, relocating or removal of any *Quercus* species without prior approval through an oak tree permit (17.23.170) will not be allowed (City of Santa Clarita 1989).

3.3.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to biological resources are based on Appendix G of the CEQA Guidelines. Through the analysis in the Initial Study (see Appendix A), it was determined that the proposed project would not conflict with the provisions of an adopted habitat conservation plan or natural community conservation plan (i.e., Threshold F). As such, this issue is not further analyzed in the EIR. Based on the remaining thresholds, implementation of the proposed project would have a significant impact related to biological resources if it would:

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

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

C. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

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

3.3.4 Methodology

The project setting was developed by reviewing available information on biological resources in the project vicinity to evaluate the environmental setting of the project alignment and identify potential special-status biological resources that may be found on the site. In addition to the literature review, several biological surveys were conducted between April 2017 and January 2019, including general plant and wildlife surveys, vegetation mapping, burrowing owl habitat assessment, focused special-status plant surveys, a formal jurisdictional delineation, and a habitat assessment and focused surveys for CRF, as well as focused wildlife surveys for ARTO, WESP, CAGN, LBVI, and SWFL.

Description of Impacts

Section 3.3.5, Impacts Analysis, assesses the potential for permanent, temporary, direct, and indirect impacts, as defined below, to special-status biological resources within the proposed project.

> **Permanent Impacts** result in the permanent long-term loss of a biological resource.
>
> **Temporary Impacts** refer to areas impacted by project activities that would be restored to existing conditions after the project activity is complete.
>
> **Direct Impacts** are the alteration, disturbance, or destruction of biological resources that would result from project-related activities. Direct impacts can include temporary impacts, such as the disturbance or removal of vegetation that returns to pre-activity conditions, or permanent impacts which could result, for example, from removal of vegetation for installation of new transmission structures.
>
> **Indirect Impacts** are reasonably foreseeable effects caused by project implementation on biological resources outside of the area of direct impact (usually the limits of work areas). Indirect impacts may include increased human activity, decreased water quality and altered hydrology, soil compaction, elevated noise and dust levels, and the introduction of invasive wildlife or plant species. Temporary indirect impacts are usually directly related to maintenance activities and may include temporary increases in noise or dust, whereas permanent indirect impacts could result from long-term effects to surrounding habitat such as the introduction of invasive species.

Impacts described above can be short-term related to construction activities or long-term due to operation of the project.

Construction-Related Impacts

Construction-Related (Short-Term Temporary) Direct Impacts: Construction-related direct impacts to biological resources would occur from grading activities related to removal of existing structures and all stringing pad/laydown yards. These areas would be restored back to the original state during the site rehabilitation phase; thus, would be considered temporary impacts. Additional temporary direct impacts could result from unintentional clearing, trampling, or grading outside of the proposed work areas.

Construction-Related (Short-Term Temporary) Indirect Impacts: For the proposed project, the construction-related (short-term temporary) impacts would primarily be indirect and include temporary effects that are immediately related to construction, such as the generation of construction-related dust or noise.

Operations-Related Impacts

Operations-Related (Long-Term Permanent) Direct Impacts: Operations-related (long-term) direct impacts are permanent impacts that result in the direct loss of biological resources due to a project (e.g., the permanent loss of wildlife habitat or the permanent loss of or harm to individual special-status plant and wildlife species from operations and maintenance). Permanent ground-disturbing activities would occur from the installation of new structures and

conductors for the new 230 kV line and vegetation removal for clearance of new access roads. Helicopter laydown areas would be partially restored; however, agreements with the landowner may affect the extent to which restoration occurs. As such, helicopter laydown areas are conservatively considered permanent impacts for the purposes of this analysis.

Operations-Related (Long-Term Permanent) Indirect Impacts: Operations-related (long-term permanent) indirect impacts could result from the proximity to biological resources after construction. Operations-related (long-term permanent) indirect impacts from the proposed project would be related to regular inspections and maintenance. Inspections and maintenance activities would be minimal and would be similar to those that occur under existing conditions. Inspections would be conducted several times annually by both ground and air patrol and maintenance would be performed as needed. Maintenance includes emergency maintenance activities to repair or replace any damage equipment or infrastructure, vegetation management such as routine tree trimming, clearance of flammable vegetation and vegetation adjacent to access roads and access road maintenance. No permanent workers would be required to operate or maintain the proposed project. There would be no change from the existing conditions with respect to long-term maintenance of the project site, given the proposed project would involve demolishing the existing 115 kV within the project alignment and constructing an approximately 12-mile segment of 230 kV line and associated transmission structures generally adjacent to the existing 115 kV line. As such, there would be no long-term permanent indirect impacts from the project, and these are not discussed further.

3.3.5 Impact Analysis

Threshold A: Would the project 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?

Special-Status Plant Species

As previously described in Section 3.3.1, Existing Conditions, five non-listed special-status species were observed within the focused special-status survey area. Direct and indirect impacts to special-status plant species is described below.

Direct Impacts

Focused special-status plant surveys were conducted in 2017 and 2018 to capture late-blooming and early-blooming plants with potential to occur within the focused special-status plant survey area. The proposed project would result in direct impacts to three non-listed plant species: slender mariposa lily, Peirson's morning-glory, and California walnut. Due to seasonal variability and climate fluctuations, it is impossible to predict the absolute number of individuals of slender mariposa lily and Peirson's morning-glory that would be lost as a result of the proposed project. Therefore, impacts are based on occupied habitat for each of these species that would be affected by project implementation. Permanent and temporary impacts would result from construction activities as summarized in Table 3.3-7, and depicted in Figures 12-1 through 12-38 in Appendix D.

Table 3.3-7. Potential Ground-Disturbing Impacts to Occupied Habitat for Non-Listed Plant Species from the Proposed Project

Species	CRPR	Occupied Habitat (Acres)	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Slender mariposa lily	1B.2	0.64	0.01	0.01
Peirson's morning-glory	4.2	0.37	0.02	0.26
California walnut	4.2	2.85	0.10	—
	Total*	3.88	0.13	0.27

Notes: CRPR = California Rare Plant Rank.
* Acreage may not total due to rounding.

Slender Mariposa Lily

Overall, special-status plant surveys resulted in the detection of 130 slender mariposa lily individuals occupying 0.64 acre within the special-status plant survey area, of which 0.02 acre would be permanently and temporarily impacted as a result of the proposed project. Specifically, the proposed project would permanently impact 0.01 acre, or 1.5% of the occupied habitat for this species and temporarily impact 0.01 acre, or 1.5% of occupied habitat for this species. Although this species is moderately threatened in California (CRPR 1B.2) and a County sensitive, this impact would be adverse, but not significant. The loss of slender mariposa lily individuals is not considered a significant impact for the following reasons: a very small amount of impacts to occupied habitat (0.02 acre) resulting from the proposed project and the scattered geographic range throughout Ventura and Los Angeles Counties. Therefore, this impact would not reduce regional populations of the species to below self-sustaining numbers and impacts to slender mariposa lily would be **less-than-significant**.

Peirson's Morning-Glory

Overall, special-status plant surveys resulted in the detection of 30 slender mariposa lily individuals occupying 0.37 acre within the special-status plant survey area, of which 0.28 acre would be permanently and temporarily impacted as a result of the proposed project. Specifically, the proposed project would permanently impact 0.02 acre, or 5.4% of the occupied habitat for this species and temporarily impact 0.26 acre, or 70.3% of the occupied habitat for this species. CRPR 4 plants are not considered Rare from a statewide perspective; are not defined as Rare, Threatened, or Endangered pursuant to the California Endangered Species Act; and are not eligible for state listing as Threatened or Endangered. Therefore, this impact would be adverse, but not significant. The loss of Peirson's morning-glory individuals is not considered a significant impact for the following reasons: the species has a scattered distribution in the County throughout the Transverse Range (i.e., San Bernardino Mountains and San Gabriel Mountains), and as discussed, CRPR 4 plants are not considered Rare from a statewide perspective. As such, this impact would not reduce regional populations of the species to below self-sustaining numbers and impacts to Peirson's morning-glory would be **less-than-significant**.

Southern California Black Walnut

Overall, special-status plant surveys resulted in the detection of 32 Southern California black walnut individuals occupying 2.85 acres within the special-status plant survey area, of which 0.10 acre would be permanently impacted as a result of the proposed project. Specifically, the proposed project would permanently impact 3.5% of the occupied habitat for this species and no temporary impacts to occupied habitat for this species are proposed to occur. This impact would be adverse, but not significant. The loss of Southern California black walnut individuals is not considered a significant impact for the following reasons: the species has a scattered distribution throughout Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura Counties, and CRPR 4 plants are not considered Rare from a statewide perspective; are not defined as Rare, Threatened, or Endangered pursuant to the California Endangered Species Act; and are not eligible for state listing as Threatened or Endangered. Furthermore, the impact would not reduce regional populations of the species to below self-sustaining numbers. However, this species is also protected under the City of Los Angeles Protected Tree Ordinance, as modified by Ordinance 177404; therefore, the proposed project is required to comply with the ordinance for this project and impacts would be mitigated. Impacts to Southern California black walnut would be **less-than-significant**.

Areas Outside of Focused Surveys

Additional work areas were identified after the initiation of focused survey efforts, which occur within potentially suitable habitats for special-status plants. Since these additional work areas occur outside of the focused special-status plant survey area, they were not incorporated within the 2017 (late-blooming) and 2018 (early-blooming) focused special-status plant survey effort. The majority of these additional work areas occur along the outer fringes of the special-status focused plant survey area; thus, are directly adjacent to areas where focused plant surveys occurred in 2017 and 2018. Nevertheless, direct temporary and/or permanent impacts associated with these additional work areas could impact special-status plant species, if present, to these areas. If special-status plants occur within these additional work areas not encompassed in the focused special-status plant survey effort, impacts could be significant. Table 3.3-8 represents the additional work areas not surveyed for special-status plants during the focused special-status plant survey effort conducted in 2018. Project implementation of MM-BIO-1 will reduce potential impacts to special-status plants to a level of less-than-significant through implementation of pre-construction focused special-status plant surveys, avoidance and minimization measures, and mitigation with performance criteria, if applicable. Potential direct impacts to special-status plant species, if present, would be **less than significant with mitigation incorporated**.

Table 3.3-8. Additional Work Areas Requiring Special-Status Plant Surveys

Additional Work Area Location	City Jurisdiction	Vegetation Community	Permanent Impact (acres)	Temporary Impact (acres)
Laydown Area 3-2	Santa Clarita	Non-native grassland and disturbed land	--	0.03
Castaic Lake Water Agency 1 Helicopter Laydown Area	Santa Clarita	Chamise chaparral, non-native grassland, and disturbed land	5.17	--

Table 3.3-8. Additional Work Areas Requiring Special-Status Plant Surveys

Additional Work Area Location	City Jurisdiction	Vegetation Community	Permanent Impact (acres)	Temporary Impact (acres)
Castaic Lake Water Agency 2 Helicopter Laydown Area	Santa Clarita	Non-native grassland and disturbed land	1.22	--
Santa Clarita Watershed Recreation Conservation Area Helicopter Laydown Area	Santa Clarita	California sagebrush-California buckwheat scrub and non-native grassland	1.32	--
Cascades Development Helicopter Laydown Area	Los Angeles	Brittle bush scrub and disturbed land	2.36	--
Metropolitan Water District Helicopter Laydown Area	Los Angeles	California sagebrush-laurel sumac, non-native grassland, and disturbed land	1.52	--
Stringing Pad 12-3	Los Angeles	Disturbed land	--	0.56
Pole 12-3	Los Angeles	Disturbed Land	0.11	--
Pole 249-2B-1	Los Angeles	Disturbed Land	0.59	--

Indirect Impacts

Potential short-term indirect impacts to suitable habitat outside of the focused special-status plant survey area and special-status plants detected in the survey area would primarily result from construction activities and could include impacts related to or resulting from the generation of fugitive dust, as a result of human trampling of vegetation outside the work areas, colonization of non-native or invasive plants, changes in hydrology resulting from construction, including sedimentation and erosion, introduction of chemical pollutants, and damage from inadvertent fires during construction. Potential short-term or temporary indirect impacts to special-status plants are considered potentially significant.

Implementation of MM-BIO-2 will reduce potential impacts to a less-than-significant level through environmental training, biological monitoring, verification of the stormwater pollution prevention plan (SWPPP), and general monitoring of the BMPs. Additionally, prior to commencement of any ground-disturbing activities, temporary construction fencing would be installed to identify the limits of grading/disturbance, which would reduce potential human trampling outside of the construction limits and minimize the potential spread of non-native weeds or invasive plants. MM-BIO-3 requires implementation of stormwater best management practices and MM-BIO-4 requires a fire management plan which identifies fire prevention procedures during construction. Implementation of these measures would minimize impacts from generation of fugitive dust, fire hazard, and chemical pollutants. Potential indirect impacts to special-status plant species would be **less than significant with mitigation incorporated**.

Special-Status Wildlife Species

As previously shown in Table 3.3-4, nine non-listed special-status wildlife species were detected in the study area (shown on Figures 12-1 through 12-38 of Appendix D). In addition, 11 special-status species were determined to have at least a moderate potential to occur within the study area. None of these species were observed during surveys conducted between 2017 through 2019; however, suitable habitat for these species occurs within the study area. Direct and indirect impacts to special-status plant species is described below.

Direct Impacts

Special-Status Amphibians and Reptiles

Five special-status amphibian and reptile species were observed or have a moderate potential to occur in the grassland, coastal scrub, chaparral, sandy washes, riparian, and/or woodland habitats throughout the study area: WESP (foraging and overwintering habitat), California glossy snake, San Diegan tiger whiptail, Blainville's horned lizard, and California legless lizard. Based on the identification of WESP egg clusters approximately 60 feet outside of the study area, and presence of suitable foraging and overwintering habitat, WESP (SSC, County SEA, City of Los Angeles) is the only special-status amphibian with a moderate potential to forage and overwinter within the project study area. Two non-listed special-status reptile species were detected within the 500-foot buffer area during surveys conducted for the project: California glossy snake (SSC), San Diegan tiger whiptail (SSC, County SEA). In addition, two non-listed special-status reptile species were not recorded within the 500-foot buffer, but have a moderate potential to occur due to presence of suitable habitat and/or documented occurrences within the vicinity of the proposed project: Blainville's horned lizard (SSC, County SEA, City of Los Angeles) and California legless lizard (SSC).

If these special-status amphibians and/or reptiles occur within the proposed project, project-related direct impacts that cause the greater population of any of these species to drop below self-sustaining levels would be considered significant. These species are vulnerable to mortality or injury if struck by moving vehicles or equipment if present on site during construction. These species are also vulnerable to mortality or injury during vegetation and grading activities because they tend to be cryptic, slow moving, and below ground or under rocks or debris during cooler periods. Although vegetation and ground-disturbing activities associated with construction have the potential to directly impact suitable habitat for these species, direct impacts to potentially suitable habitat would not be significant given the minimal impacts to suitable habitat proposed to be impacted compared with similar habitats proposed to remain in adjacent areas. The existing 115 kV line would be removed in order to construct the upgraded 230 kV line within the existing LADWP transmission line corridor, and impacted areas associated with the removal of the 115 kV line would be restored post-construction. As such, overall direct impacts to habitat potentially suitable to special-status amphibians and/or reptiles would not be significant. Project implementation of MM-BIO-2 will reduce potential direct impacts to special-status amphibians and/or reptiles to a less-than-significant level through pre-construction surveys, avoidance, and potential relocation. Potential direct impacts to special-status amphibians and/or reptiles would be **less than significant with mitigation incorporated**.

Special-Status Birds

One listed bird species was detected and may occasionally use the riparian habitat within the study area as stop-over habitat during migration): willow flycatcher (Empidonax traillii; SE, County SEA, City of LA). However, given the limited riparian habitat present (which lacks dense riparian vegetation required for nesting) within the study area, the negative results of focused surveys conducted for SWFL within 2018, as well as the lack of perennially available water sources, willow flycatcher (i.e., the southwestern sub-species) is not expected to nest within the study area. Similarly, two non-listed special-status bird species have a moderate potential to migrate through the site; however, are not likely to nest or forage within the study area due to a lack of suitable nesting habitat; olive-sided flycatcher (SSC) and yellow-breasted chat (SSC, County SEA, City of Los Angeles).

Six non-listed special-status bird species were also detected within the 500-foot study area during surveys conducted for the project: American peregrine falcon (CDFW FP), loggerhead shrike (CDFW SSC), olive-sided flycatcher (CDFW SSC), white-tailed kite (CDFW FP), yellow-breasted chat (CDFW SSC), and yellow warbler (CDFW SSC). Additionally, two non-listed special-status bird species not detected within general and focused surveys conducted for the project have a moderate potential to nest, forage, and/or winter within the study area due to presence of suitable habitat and/or documented occurrences within the vicinity of the proposed project: grasshopper sparrow (CDFW SSC) and burrowing owl (CDFW SSC). These species have the potential to occur within disturbed land, grassland, coastal scrub, chaparral, riparian, woodland, and/or eucalyptus stands present throughout the study area. Thus, direct impacts may occur to habitats suitable to support special-status birds detected or with moderate potential to occur within the study area.

Focused surveys for CAGN (FT, CDFW SSC, City of Los Angeles, LBVI (FE, SE, City of Los Angeles), and SWFL (FE, SE, City of Los Angeles) conducted in 2018 were negative for these species and are discussed further below.

Nesting Birds

Direct permanent and temporary impacts may occur to special-status birds (i.e., American peregrine falcon, grasshopper sparrow, loggerhead shrike, yellow warbler, and/or burrowing owl) present or with moderate potential to nest within disturbed land, grassland, coastal scrub, chaparral, riparian, woodland, and/or eucalyptus stands within the study area. Additionally, trees, shrubs and grassland habitat within the proposed project provides suitable nesting habitat for bird species protected under the Migratory Bird Treaty Act (MBTA; 16 USC 703-712) and California Fish and Game Code Sections 3503.5, 3503, and 3513. Construction activities (i.e., helicopter use) conducted during the general nesting bird season (February 1 through August 31) could disrupt breeding activities. Trimming, pruning, and/or removal of trees and shrubs, as well as grassland, may occur as a result of construction of the project and result in loss of suitable habitat. Construction activities could also result in the direct take of a bird (i.e., individuals, active nests, eggs, or young). These impacts would be considered significant under CEQA. Impacts to special-status nesting birds and nesting birds protected under the MBTA and California Fish and Game Code would be less than significant with implementation of MM-BIO-5, which requires nesting bird surveys within 300 feet (500 feet for raptors) of the proposed impact areas and if active nests are found, the biologist shall establish buffers and/or implement monitoring to avoid impacting avian nesting success. Potential direct impacts to protected nesting birds would be **less than significant with mitigation incorporated**.

Migrating Birds

Direct impacts to suitable bird foraging habitat proposed to be impacted (totaling approximately 70 acres) compared with similar habitats proposed to remain in adjacent areas (totaling approximately 1,400 acres within the remaining study area) would be minimal as it would be spread out over the entire 12-mile project alignment. The existing 115 kV line would be removed in order to construct the upgraded 230 kV line within the existing LADWP transmission line corridor, and impacted areas associated with the removal of the 115 kV line would be restored post-construction. Additionally, the upgraded 230 kV line is proposed to construct primarily monopole structures, which have a smaller footprint and would result in less overall ground impacts compared with the existing 115 kV line, which is comprised of lattice structures. Construction would occur in phases along the transmission line, which would minimize the construction length within each segment. As such, direct impacts to suitable foraging and migratory habitat due to construction would be minimal overall. Open space areas surrounding the project site allow for continued foraging habitat for special-status avian species with the potential to occur in the area; thus, loss of foraging habitat for American peregrine falcon, grasshopper sparrow, loggerhead shrike, white-tailed kite, yellow warbler, and burrowing owl would not be significant and does not require mitigation.

Additionally, any impacts to suitable riparian habitat that could support migrating riparian bird species (i.e., willow flycatcher, olive-sided flycatcher, and/or yellow breasted chat) is associated with jurisdictional water features that will be mitigated through habitat preservation and/or creation (MM-BIO-9) as determined during the permitting process, further reducing permanent direct impacts to special-status migrating birds (see Threshold C for further details). As such, permanent direct impacts to special-status riparian habitat that could support riparian bird species would be **less than significant**.

Burrowing Owl

Burrowing owls were not recorded during surveys conducted between 2017 and 2019; however, suitable habitat occurs within the proposed project. Focused surveys were not conducted for the entire study area; thus, absent the recommended mitigation measures, potential construction-related direct impacts to burrowing owl could result from unintentional clearing, trampling, or grading outside of the construction zone. Short-term direct impacts related to unintentional loss of habitat would be significant absent mitigation. This impact would be reduced through implementation of MM-BIO-2, which requires temporary construction fencing established around the limits of disturbance to avoid impacts outside of these areas.

Additionally, ground disturbances could potentially result in destruction of burrowing owl dens, destruction of nests, eggs, and young, and entombment of adults. Burrowing owl is an SSC that has experienced declines in California and loss of individuals and destruction of nests and/or burrowing owl is considered a significant impact. Mitigation measure MM-BIO-6 (burrowing owl pre-construction surveys and avoidance/relocation plan) would result in identification of any burrowing owls within areas potentially impacted by the project, establishment of appropriate buffers, and avoidance of impacts to burrowing owl. Potential direct impacts to burrowing owl would be **less than significant with mitigation incorporated**.

Least Bell's Vireo and Southwestern Willow Flycatcher

Focused surveys for LBVI and SWFL were negative; therefore, this species is considered to have low potential to occur in suitable habitat within the study area. However, a minimal amount of potentially suitable riparian habitat for LBVI and/or SWFL was not surveyed in 2018 due to additional work areas being added following the initiation of LBVI and SWFL focused survey efforts. These areas are mostly concentrated in the south-central and southern portions of the alignment and are generally adjacent to previously-surveyed habitat. There are no permanent impacts proposed to these areas and temporary impacts may occur within approximately 0.03 acres of potentially suitable habitat; thus, no significant impacts to LBVI or SWFL are expected. Furthermore, mitigation measure MM-BIO-5 requires nesting bird surveys be conducted within suitable habitat to support special-status birds and/or protected birds prior to construction activities, which would further reduce any unanticipated impacts to LBVI and/or SWFL. As such, potential direct impacts to LBVI and/or SWFL would be **less than significant with mitigation incorporated**.

Coastal California Gnatcatcher

Focused surveys for CAGN were negative; therefore, this species is considered to have low potential to occur in suitable habitat within the study area. However, there are potentially suitable coastal sage scrub habitats that were not surveyed in 2018 due to additional work areas being added following the initiation of focused CAGN survey efforts. Most of these areas are along the outer fringes of the survey area and are adjacent to the areas surveyed in 2018. However, there are small temporary and permanent impacts to these areas, particularly in the helicopter laydown areas. Table 3.3-9 represents the additional work areas not surveyed for CAGN during the focused CAGN survey effort conducted in 2018.

Table 3.3-9. Additional Work Areas Requiring CAGN Focused Surveys

Additional Work Area Location	City/County Jurisdiction	Vegetation Community	Permanent Impact (acres)	Temporary Impact (acres)
Santa Clarita Watershed Recreation Conservation Area Helicopter Laydown Area	Santa Clarita	California sagebrush-California buckwheat scrub	0.06	--
Pole 2-2	Santa Clarita	California sagebrush scrub	0.05	--
Pole 5-3 and 5-4	Santa Clarita	Big sagebrush	0.05	--
Structure Removal Location	Santa Clarita	Non-native grassland and disturbed land	--	0.04
Metropolitan Water District Helicopter Laydown Area	Los Angeles	California sagebrush-laurel sumac	0.01	--
Cascades Development Helicopter Laydown Area	Los Angeles	Brittle bush scrub	0.19	--

If CAGN occurs within these impacted un-surveyed areas, impacts would be significant. As such, MM-BIO-7 requires focused CAGN surveys be conducted within additional work areas with suitable habitat to support CAGN (not previously surveyed during the 2018 CAGN focused survey effort) prior to construction, as well as avoidance, minimization, and mitigation measures (i.e., agency consultation, environmental training, vegetation removal constraints, delineating work areas, biological monitoring, and compensatory mitigation) if CAGN is identified. Additionally, MM-BIO-5 requires noise levels to not exceed 60 A-weighted decibels equivalent continuous sound level (dBA Leq) or preconstruction ambient noise levels, whichever is greater, within 500 feet of occupied CAGN habitat during the nesting season. Potential direct impacts to CAGN would be **less than significant with mitigation incorporated**.

Special-Status Mammals

One non-listed special-status mammal (San Diego black-tailed jackrabbit; SSC, County SEA, City of Los Angeles) was detected within the study area during surveys conducted for the proposed project. In addition, five non-listed special-status mammal species were not recorded within the study area, but have a moderate potential to occur due to presence of suitable habitat and/or documented occurrences within the vicinity of the proposed project: pallid bat (SSC, County SEA, City of Los Angeles), San Diego desert woodrat (SSC, County SEA, City of Los Angeles), southern grasshopper mouse (SSC, County SEA, City of Los Angeles), spotted bat (SSC, County SEA), and western mastiff bat (SSC, County SEA, City of Los Angeles). All six of these mammal species are designated as CDFW SSC, and may also have local designations.

Direct impacts may occur to potential habitat for special-status mammals known to occur and with moderate potential to occur in suitable habitat within the study area. Trimming, pruning, and/or removal of trees and shrubs, as well as grassland, may occur as a result of construction of the project and result in loss of suitable habitat. Permanent impacts to potentially suitable habitat for these species totals approximately 85 acres but is spread out over the entire 12-mile project alignment, and approximately 1,420 acres would remain within the surrounding study area. The proposed project would remove the existing 115 kV line in order to construct the upgraded 230 kV line within the existing LADWP transmission line corridor, and impacted areas associated with the removal of the 115 kV line would be restored post-construction. Additionally, the upgraded 230 kV line is proposed to construct primarily monopole structures, which have a smaller footprint and would result in less overall ground impacts compared with the existing 115 kV line, which is comprised of lattice structures. As a result, direct impacts to potentially suitable habitat for special-status mammals detected or with potential to occur in the study area are not considered significant.

Terrestrial mammal species (i.e., black-tailed jackrabbit, San Diego desert woodrat, and southern grasshopper mouse) are vulnerable to mortality or injury if struck by moving vehicles or equipment if present on site during construction. Construction activities have the potential to directly impact a small number of individuals of these species, including mortality and injury of individuals in burrows. Any individuals that are flushed from burrows by construction activities would also be highly vulnerable to stress and predation; however, potential woodrat middens identified on-site are not proposed to be impacted by the proposed project. Because the vast majority of suitable habitats for mammals in the study area and adjacent vicinity would not be affected by the project, direct impacts to a few individuals of these species would have small impacts on the

local populations. Additionally, project implementation of MM-BIO-2 will reduce potential direct impacts to special-status terrestrial mammals to a less-than-significant level through pre-construction surveys, avoidance, flushing species, and covering or providing escape routes within excavated areas. Potential direct impacts to special-status terrestrial mammals would be less than significant with implementation of MM-BIO-2.

The pallid bat, spotted bat, and western mastiff bat have a moderate to high potential to roost in rocky outcrops, crevices, cliffs, trees or man-made structures (i.e., bridges) and forage at night (particularly over water or adjacent to washes) within the study area. The pallid bat, spotted bat, and/or western mastiff bat could potentially roost within the grassland, washes, chaparral, coastal scrub, and woodland habitats present on site; thus, roosting activities could be disrupted. Direct permanent impacts to special-status bat roosts would be less than significant with mitigation. Potential direct impacts to special-status bat roosts would be less than significant with the implementation of MM BIO-8, which requires a pre-construction survey for potential active bat roosts, seasonal restrictions to avoid impacts to maternal bat roosts, and methods for safe eviction or flushing bats from non-breeding bat roosts, if present. Construction activities would generally occur during daylight hours, with minimal nighttime construction proposed primarily along major crossings (i.e., roadways, freeways, and railroad crossings). Additionally, any nighttime lighting would be directed toward work areas away from natural areas; thus, would have negligible impacts to occasional bats foraging within the study area. In addition, biological monitoring will be conducted during all ground-disturbing and vegetation-clearing activities, which will help avoid and minimize impacts to individuals. Therefore, impacts to special-status foraging bat are considered minimal and would not be a significant impact. Potential direct impacts to special-status bats would be less than significant with implementation of MM-BIO-8.

Potential direct impacts to special-status mammals would be **less than significant with mitigation incorporated**.

Special-Status Invertebrates

One federally-listed special-status invertebrate species has potential to occur on site: vernal pool fairy shrimp. Although this species was not recorded within the proposed project and/or surrounding 500-foot buffer, focused surveys for this species were not conducted during the 2017 through 2019 survey efforts. This species has a moderate potential to occur within the study area due to the presence of suitable habitat and/or documented occurrences within the vicinity of the proposed project. Vernal pool features occur north of the Santa Clara River, approximately 80 feet north (and north of an existing dirt road) and 140 feet northeast of an existing lattice structure proposed for removal, and 110 feet southeast of a new structure and work area. Existing access roads occur within the vicinity of these structures. Additionally, another vernal pool occurs approximately 200 feet east of a work location south of SR-14. No direct impacts to vernal pools or ephemeral basins are proposed to occur; therefore, direct impacts to suitable habitat for vernal pool fairy shrimp would be **less than significant**.

Indirect Impacts

Potential short-term indirect impacts to special-status wildlife includes fugitive dust, chemical pollutants (including herbicides), increased human activity, and non-native animal species. As such, indirect impacts are considered potentially significant. These indirect impacts would be less than significant with mitigation measure MM-BIO-2, which would

require environmental training, biological monitoring, flushing mobile species from disturbance areas, verification of the SWPPP, and general monitoring of the BMPs. Additionally, MM-BIO-2 requires temporary construction fencing around the limits of disturbance to avoid unintentional impacts outside of the footprint.

Noise generated by construction activities, including vegetation removal, grading, and helicopter use, that are conducted during the avian breeding season (February 1 through August 31), could result in indirect impacts to nesting birds. Noise related to these activities has the potential to disrupt reproductive and feeding activities. Under the MBTA and California Fish and Game Code Sections 3503.5, 3503, and 3513, indirect impacts to individual special-status and native birds, active nests, or the young of nesting special-status and native bird species would be considered significant, absent mitigation. MM-BIO-5 has specific requirements for working near active nests and requires noise monitoring within 500 feet of nesting raptors and/or CAGN (if present).

Potential indirect impacts to special-status wildlife species would be **less than significant with mitigation incorporated**.

Threshold B: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Direct Impacts

Special-status (or sensitive) vegetation communities in the study area include California brittle bush scrub, scale broom scrub, chamise-purple sage, hairy leaf ceanothus chaparral, hairy leaf ceanothus-California sagebrush, holly leaf cherry chaparral, thick leaf yerba santa scrub, coast live oak woodland, coast live oak/hairy leaf ceanothus, coast live oak-California walnut, blue elderberry scrub, mulefat thickets, black willow thickets, disturbed Fremont cottonwood forest, Fremont cottonwood forest, Fremont cottonwood/mulefat, Fremont cottonwood-coast live oak, red willow thickets, sandbar willow thickets, and cattail marshes. Concrete channel, open water, unvegetated channel, and unvegetated channel/disturbed habitat are jurisdictional under regulatory agencies; therefore, these land cover types are included as sensitive and are discussed further under Threshold C.

There are no proposed impacts to chamise-purple sage, hairy leaf ceanothus-California sagebrush, coast live oak-California walnut, blue elderberry, Fremont cottonwood-coast live oak (i.e., disturbed forms), red willow thickets, sandbar willow thickets, cattail marshes, open water or unvegetated channel/disturbed habitat; therefore, these communities are not further addressed.

Table 3.3-10 summarizes permanent and temporary impacts to special-status vegetation communities from the proposed project.

Table 3.3-10. Proposed Project Impacts to Special-Status Vegetation Communities and Land Covers

General Physiognomic Location	General Habitat	Vegetation Community or Land Cover Type	Permanent Impact (acres)	Temporary Impacts (acres)	Total (acres)	Acres Remaining After Permanent Impacts (Study Area)
Scrub and Chaparral	Coastal Scrub	California brittle bush scrub	0.07	0.11	0.18	2.00
		Scale broom scrub	0.01	—	0.01	3.87
	Undifferentiated Chaparral Scrub	Chamise-purple sage	—	—	—	1.32
		Hairy leaf ceanothus chaparral	—	<0.01	<0.01	5.62
		Hairy leaf ceanothus-California sagebrush	—	—	—	2.49
		Holly leaf cherry chaparral	—	0.05	0.05	16.67
		Thick leaf yerba santa scrub	—	0.07	0.07	3.13
		Scrub and Chaparral Total	*0.08*	*0.24*	*0.32*	*35.10*
Broad Leafed Upland Tree Dominated	Oak Woodlands and Forests	Coast live oak woodland	0.97	1.38	2.35	87.03
		Coast live oak/hairy leaf ceanothus	—	0.26	0.26	7.19
		Coast live oak-California walnut	—	—	—	3.32
		Broad Leafed Upland Tree Dominated Total	*0.97*	*1.64*	*2.61*	*97.54*
Riparian and Bottomland Habitat	Low to High Elevation Riparian Scrub	Blue elderberry[1]	—	—	—	0.33
		Mulefat thickets[1]	0.44	2.91	3.34	17.20
	Riparian Forest and Woodland	Black willow thickets	—	<0.01	<0.01	1.80
		Disturbed Fremont cottonwood-coast live oak	—	—	—	1.56
		Fremont cottonwood forest	<0.01	0.12	0.12	0.42
		Fremont cottonwood/mulefat	0.65	<0.01	0.65	7.16
		Fremont cottonwood-coast live oak	—	—	—	0.46
		Red willow thickets	—	—	—	4.26
		Sandbar willow thickets	—	—	—	0.82
		Riparian and Bottomland Habitat Total	*1.09*	*3.03*	*4.12*	*34.01*

Table 3.3-10. Proposed Project Impacts to Special-Status Vegetation Communities and Land Covers

General Physiognomic Location	General Habitat	Vegetation Community or Land Cover Type	Permanent Impact (acres)	Temporary Impacts (acres)	Total (acres)	Acres Remaining After Permanent Impacts (Study Area)
Bog and Marsh	Marsh	Cattail Marshes	—	—	—	0.42
		Bog and Marsh Total	—	—	—	*0.42*
Waterways	Waterways	Concrete Channel	0.01	0.02	0.03	10.08
		Open Water	—	—	—	0.08
		Unvegetated Channel	0.18	0.09	0.27	13.85
		Unvegetated Channel/Disturbed Habitat	—	—	—	0.18
		Waterways Total	0.19	0.11	0.30	*24.19*
		Total[1]	2.32	5.02	7.34	191.26

Note:
[1] Acreage may not total due to rounding.

As shown on Table 3.3-10, temporary direct impacts totaling approximately 5.02 acres are proposed to occur within 12 special-status vegetation communities and land covers within the study area, including California brittle bush scrub, hairy leaf ceanothus chaparral, holly leaf cherry chaparral, think leaf yerba santa scrub, coast live oak woodland, coast live oak/hairy leaf ceanothus, mulefat thickets, black willow thickets, Fremont cottonwood forest, Fremont cottonwood/mulefat, concrete channel, and unvegetated channel. Temporary impacts will be restored following the completion of construction activities, therefore, temporary impacts to special-status species would be **less than significant.**

Table 3.3.-10 also shows the proposed project will result in permanent direct impacts to approximately 2.32 acres, or approximately 1.2%, of special-status vegetation communities and land covers documented within the study area. Given permanent direct impacts to special-status vegetation communities and land covers are proposed to be minimal and spread out over a large area, permanent direct impacts would be less than significant. Additionally, 1.27 acres of the proposed 2.31 acres of permanent direct impacts are vegetation communities and land covers associated within jurisdictional water features regulated by ACOE, RWQCB and/or CDFW; thus, requiring mitigation. Special-status vegetation communities and land covers associated with jurisdictional water features will be mitigated through habitat preservation and/or creation (MM-BIO-9) as determined during the permitting processes with the ACOE, RWQCB, and CDFW, further reducing permanent direct impacts to special-status vegetation communities and land cover (further discussed in Threshold C). As such, permanent direct impacts to special-status vegetation communities and land covers would be **less than significant.**

Indirect Impacts

Potential short-term indirect impacts to special-status vegetation communities and land covers within the study area would be the same as those described for special-status plants, and would primarily result from construction activities including impacts related to or resulting from the generation of fugitive dust, as a result of human trampling of vegetation outside the work areas, colonization of non-native or invasive plants, changes in hydrology resulting from construction, including sedimentation and erosion, introduction of chemical pollutants, and damage from inadvertent fires during construction. Potential short-term or temporary indirect impacts to special-status vegetation communities are considered potentially significant.

Project implementation of MM-BIO-2 will reduce potential impacts to a less-than-significant level through environmental training, biological monitoring, verification of the SWPPP, and general monitoring of the BMPs. Additionally, prior to commencement of any ground-disturbing activities, temporary construction fencing would be installed to identify the limits of grading/disturbance, which would reduce potential human trampling outside of the construction limits and minimize the potential spread of non-native weeds or invasive plants. MM-BIO-3 requires implementation of BMPs and MM-BIO-4 requires a fire management plan which identifies fire prevention procedures during construction. Implementation of these measures would minimize impacts from generation of fugitive dust, fire hazard, and chemical pollutants. Potential indirect impacts to special-status vegetation communities and land covers would be **less than significant with mitigation incorporated.**

Threshold C: Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Direct Impacts

The project would result in impacts to wetland and non-wetland waters of the United States as defined by Section 404 of the Clean Water Act as well as streambeds regulated under California Fish and Game Code. Table 3.3-11 summarizes the temporary and permanent direct impacts to these resources, which is also illustrated in Figures 12-1 through 12-38 in Appendix D.

Table 3.3-11. Jurisdictional Features

Potential Jurisdiction	ACOE Class	RWQCB Class	CDFW Class	Temporary Impacts		Permanent Impacts	
				Acres	*LF*	*Acres*	*LF*
ACOE/RWQCB /CDFW	Non-wetland Water - Ephemeral	Non-wetland Water - Ephemeral	Non-wetland Water - Ephemeral	0.11	561	0.19	458
	Non-wetland Water - Intermittent	Non-wetland Water - Intermittent	Non-wetland Water - Intermittent	—	—	—	—

Table 3.3-11. Jurisdictional Features

Potential Jurisdiction	ACOE Class	RWQCB Class	CDFW Class	Temporary Impacts		Permanent Impacts	
				Acres	*LF*	*Acres*	*LF*
	Non-wetland Water - Ephemeral	Non-wetland Water - Ephemeral	Riparian Area	2.80	241	0.02	44
	Wetland	Wetland	Riparian Area	0.22	N/A	<0.00	N/A
	Potential Vernal Pool	Potential Vernal Pool	Potential Vernal Pool	—	—	—	—
Subtotal waters of the United States				*3.14*	802	*0.21*	502
CDFW	N/A	N/A	Riparian habitat	<0.00	N/A	1.06	N/A
Subtotal additional Streambed				<0.00	N/A	1.06	N/A
Total Jurisdictional Features[1]				3.14	802	1.27	502

ACOE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife; LF = linear feet; N/A = .not applicable

Note:

[1] Acreage may not total due to rounding.

Temporary direct impacts would occur to jurisdictional waters as a result of construction activities such as laydown areas, stringing pads, temporary access routes, and temporary work pads. These activities would be conducted in a manner to avoid jurisdictional waters to the maximum extent practicable; however, in an effort to disclose the maximum potential for impacts the largest extent of potential temporary impacts was calculated based on the conceptual design. As shown on Table 3.3-11, temporary direct impacts would total approximately 3.14 acres of waters of the United States, including 0.22 acre of wetland waters of the United States and temporary impacts would be restored following the completion of construction activities as described under site rehabilitation of the project description (see Chapter 2 of this EIR). Site rehabilitation would include salvaging, stockpiling and re-applying the top 6 inches of topsoil; revegetating with native species, and recontouring to natural grade; therefore, temporary impacts to jurisdictional waters would be less than significant. Nevertheless, permits would be required from the resource agencies for temporary impacts to jurisdictional waters as further described below.

Permanent impacts would occur to approximately 0.21 acre of non-wetland waters of the United States and 1.06 acre of additional streambed under the jurisdiction of CDFW as shown in Table 3.3-11. Permanent impacts to 1.27 acres of jurisdictional waters would be a significant impact absent mitigation. With implementation of mitigation measure MM-BIO-9 (habitat preservation and/or creation) and the requirements of federal and state agency permit requirements, permanent impacts to jurisdictional waters would be less than significant. Potential direct impacts to jurisdictional waters would be **less than significant with mitigation incorporated.**

Prior to impacts occurring to jurisdictional waters (including waters of the United States, waters of the State, and jurisdictional streambed), LADWP would be required to obtain the following: a permit under Section 404 of the Clean Water Act ("404 permit") from the ACOE, a Water Quality Certification pursuant to section 401 of the Clean Water Act from the RWQCB, and a Streambed Alteration Agreement from CDFW pursuant to California Fish and Game

Code. To compensate for impacts to jurisdictional waters, LADWP may purchase mitigation bank or in lieu fee credits, including establishment, re-establishment, enhancement, or rehabilitation. Alternatively, a suitable mitigation site could be selected and approved by the Resource Agencies during the permitting process with preparation and approval of a Habitat Mitigation and Monitoring Program through permittee-responsible mitigation. Either of these options would result in no net loss of jurisdictional aquatic resources. A functional assessment, such as the California Rapid Assessment Method (CRAM), of the jurisdictional areas proposed to be impacted and preserved at the mitigation site may be required by the Resource Agencies. The purpose of the functional assessment is to evaluate the existing functions and services within the jurisdictional drainages and ensure that the functions and values of the jurisdictional areas lost are replaced at the mitigation site. The precise mitigation ratio would depend on the functions and values of the mitigation site and any restoration activities that may be conducted to further increase the functions and values of the mitigation site; however, at a minimum the mitigation ratio would ensure a no net loss of aquatic resources as required by the Resource Agencies.

Indirect Impacts

Potential short-term indirect impacts to jurisdictional waters in the survey area would be the same as those described for special-status plants and primarily result from construction activities and could include impacts related to or resulting from the generation of fugitive dust, as a result of human trampling of vegetation outside the work areas, colonization of non-native or invasive plants, changes in hydrology resulting from construction, including sedimentation and erosion, introduction of chemical pollutants, and damage from inadvertent fires during construction. As such, potential short-term or temporary indirect impacts to jurisdictional waters are considered potentially significant.

Project implementation of MM-BIO-2 will reduce potential impacts to a less-than-significant level through environmental training, biological monitoring, regular communication with contractor regarding designated work areas, and weekly inspection of fencing to minimize potential for erosion. Additionally, prior to commencement of any ground-disturbing activities, temporary construction fencing would be installed to identify the limits of grading/disturbance, which would reduce potential human trampling outside of the construction limits and minimize the potential spread of non-native weeds or invasive plants. MM-BIO-3 requires implementation of BMPs to reduce spread of invasive plants, reduce direct and indirect impacts to jurisdictional waters, and reduce potential for chemical pollution to jurisdictional features, and MM-BIO-4 requires a fire management plan which identifies fire prevention procedures during construction. Implementation of these measures would minimize impacts from generation of fugitive dust, fire hazard, and chemical pollutants. Additionally, federal and state agency permits may identify additional provisions to protect against indirect impacts. Potential indirect impacts to jurisdictional resources would be **less than significant with mitigation incorporated**.

Threshold D: Would the project 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?

As previously discussed in Section 3.3.1, Existing Conditions, the proposed project traverses the Santa Clara River SEA, an important regional habitat linkage and east–west wildlife movement corridor. The riparian habitats in the proposed

project may serve as foraging or resting habitat for migratory birds, bats, semi-aquatic, and other species traveling through the area. Furthermore, the proposed project supports natural vegetation communities, which supports localized wildlife movement through numerous canyons and ravine stream habitats that intercept the project alignment (i.e., Elsmere Canyon, Whitney Canyon, Placerita Canyon, and the Santa Clara River). The proposed project also provides core habitat for smaller mammals, birds, reptiles, and amphibians in the area.

Project impacts to wildlife landscape habitat linkages are considered significant if they (1) 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 (2) impede the use of native wildlife nursery sites. Generally, impacts to habitat linkages and wildlife corridors can cause habitat fragmentation and isolation, thereby disrupting genetic exchange and reducing biological diversity.

The Santa Clara River SEA is a critical regional east–west habitat linkage and wildlife corridor. Although the majority of the proposed project would avoid the Santa Clara River, permanent impacts (i.e., new transmission structures) are proposed to occur to the designated Santa Clara River SEA within the City of Santa Clarita, and the San Gabriel-Castaic Connection wildlife corridor linkage design where it encompasses the Santa Clara River. These impacts would not directly impact wildlife movement through the area, since they will be minimal (concentrated to the southern portion of the Santa Clara SEA), work is proposed to occur primarily during daylight hours when most wildlife movement is not anticipated to occur, and the area will remain unfenced post-construction.

In addition, the proposed north-south project alignment traverses Elsmere Canyon to Whitney and Placerita Canyons within a designated SEA within unincorporated Los Angeles County and City of Santa Clarita, which have also been identified as important wildlife corridors through the Santa Clarita Valley by the SMMC and MRCA. Impacts to these important wildlife linkages and overall wildlife movement in the area would be minimal since the proposed 230 kV line would occur within the existing LADWP corridor, which currently supports an existing 115 kV line proposed for removal. Thus, the overall impacts to important linkages, would remain unchanged by the project post-construction. Additionally, the proposed project would result in minimal impacts associated with structure locations, which would remain unfenced and open to native surrounding habitats in the surrounding area. As such, overall impacts to existing wildlife movement would be negligible.

During construction, wildlife may be deterred from the construction area due to increased human presence, loud noises, and physical disruptions of habitat. However, construction will be temporary at any location throughout the alignment, and wildlife would be able to use temporary construction areas freely after work crews are gone. Since the proposed project is linear, typical construction methods would not impede wildlife movement over a large area at any one time. Additionally, the majority of construction activities are proposed to occur during daylight hours when most wildlife are not moving. Nighttime lighting would only be used when necessary, and, as required by MM-BIO-2, lighting would be shielded towards the project activity and away from surrounding natural areas. Although indirect impacts due to short-term noise from construction could disrupt species use in the adjacent habitat during the day, most wildlife species are active at night; and thus, would be minimally impacted by the proposed project activities. Additionally, the project would result in removal of existing lattice structures, which would be restored with native vegetation following construction; thus, indirect impacts due to loss of habitat would not be significant. As such, short-term impacts to movement of native wildlife species and from impediments to use of native

wildlife nursery sites would be less than significant. Potential direct and indirect impacts to native wildlife nursery sites and/or wildlife movement would be **less than significant with mitigation incorporated**.

Threshold E: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

County of Los Angeles General Plan

A central to southern portion of the alignment traverses unincorporated County land. The County General Plan Conservation and Natural Resources Element establishes goals and policies for biological resources occurring within unincorporated County land (County of Los Angeles 2015). The project is consistent with the County General Plan biological resource policies. Table 3.3-12 includes the goals and policies related to the conservation of biological resources and describe how the project is consistent with the general plan.

Table 3.3-12. Los Angeles County General Plan Goals and Policies

Protection of Biological Resources Goals and Objectives	Consistency	Analysis
Policy C/NR 3.1: Conserve and enhance the ecological function of diverse natural habitats and biological resources.	Yes, with mitigation.	Areas of temporary impact would be restored as described in Appendix D; MM-BIO-9 would provide habitat preservation and/or creation.
Policy C/NR 3.2: Create and administer innovative County programs incentivizing the permanent dedication of SEAs and other important biological resources as open space areas	N/A	No land would be dedicated as part of the proposed project.
Policy C/NR 3.3: Restore upland communities and significant riparian resources, such as degraded streams, rivers, and wetlands to maintain ecological function—acknowledging the importance of incrementally restoring ecosystem values when complete restoration is not feasible	Yes, with mitigation.	Areas of temporary impact would be restored as described in Appendix D; MM-BIO-9 would provide habitat preservation and/or creation.
Policy C/NR 3.4: Conserve and sustainably manage forests and woodlands.	Yes, with mitigation.	MM-BIO-9 would provide habitat preservation and/or creation.
Policy C/NR 3.5: Ensure compatibility of development in the National Forests in conjunction with the U.S. Forest Service Land and Resource Management Plan.	N/A	No development would occur in a National Forest as part of the project.
Policy C/NR 3.6: Assist state and federal agencies and other agencies, as appropriate, with the preservation of special status species and their associated habitat and wildlife movement corridors through the	N/A	While MM-BIO-9 would provide habitat preservation and/or creation, no administration of the SEAs and other programs would be

Table 3.3-12. Los Angeles County General Plan Goals and Policies

Protection of Biological Resources Goals and Objectives	Consistency	Analysis
administration of the SEAs and other programs.		conducted as part of the proposed project.
Policy C/NR 3.7: Participate in inter-jurisdictional collaborative strategies that protect biological resources	Yes, with mitigation.	LADWP would be required to obtain Federal and State Agency Permits and comply with the provisions of the permits.
Site Sensitive Design		
Policy C/NR 3.8: Discourage development in areas with identified significant biological resources, such as SEAs.	N/A	Although development would occur within significant biological resource areas such as SEAs as part of the project, impacts to these areas would be minimal and would replace existing structure locations within an existing LADWP transmission corridor.
Woodland Preservation		
Policy C/NR 4.1: Preserve and restore oak woodlands and other native woodlands that area conserved in perpetuity with a goal of no net loss of existing woodlands.	Yes, with mitigation.	MM-BIO-10 would provide a protected tree inventory, report, and mitigation.

SEA = significant ecological area.

Impacts to biological resources goals and objectives provided within the County General Plan would be less than significant or mitigated to a less-than-significant level. The project would comply with requirements of the County General Plan biological resource goals and policies through the implementation of the recommended mitigation measures. Therefore, the project would not conflict with the County General Plan. Impacts would be **less than significant with mitigation incorporated**.

County of Los Angeles Oak Tree Ordinance

CLAOTO requires that all potential impacts to oak trees regulated by this ordinance be preceded by an application to the County that includes a detailed oak tree report. Mitigation for impacts to oak trees is usually required as a condition of an Oak Tree Permit issued by the County. Implementation of MM-BIO-10 would require a protected tree inventory to be completed prior to construction and potential permit application submittal for impacted trees prior to construction. Therefore, the project would not conflict with local policies or ordinances protecting biological resources. Impacts would be **less than significant with mitigation incorporated**.

City of Los Angeles General Plan

The Conservation and Open Space Elements of the City of Los Angeles General Plan addresses the protection of natural resources within the City of Los Angeles' limits, including water and hydraulic force, forests, soils, rivers and

other waters, harbors, fisheries, wildlife, minerals, and other natural resources. These elements were provided to comply with California law. Goals listed in the plan include a City that preserves, protects and enhances its existing natural and related resources, as well as goals to insure preservation and conservation of sufficient open space. Table 3.3-13 includes the objectives and policies related to the conservation of biological resources and describe how the project is consistent with the general plan.

Table 3.3-13. City of Los Angeles General Plan Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Conservation Element		
Endangered Species *Objective: Protect and promote the restoration, to the greatest extent practical, of sensitive plant and animal species and their habitats.*		
Policy 1: Continue to require evaluation, avoidance, and minimization of potential significant impacts, as well as mitigation of unavoidable significant impacts on sensitive animal and plant species and their habitats and habitat corridors relative to land development activities.	Yes	The proposed project is analyzed in accordance with CEQA, including evaluation, avoidance, and minimization of potential significant impacts. The proposed project would provide mitigation of unavoidable significant impacts on sensitive animal and plant species and their habitats and habitat corridors with MM-BIO-1 through MM-BIO-9.
Policy 2: Continue to administer City of LA-owned and managed properties so as to protect and/or enhance the survival of sensitive plant or animal species to the greatest practical extent.	Yes, with mitigation	MM-BIO-1, MM-BIO-2, and MM-BIO-5 through MM-BIO 9 would protect sensitive plant or animal species within City of LA-owned and managed properties.
Policy 3: Continue to support legislation that encourages and facilitates protection of endangered, threatened, sensitive, and rare species and their habitats and habitat corridors.	N/A	The proposed project does not offer legislation for the City of LA government to consider.
Section 8. Erosion *Objective: Protect coastline and watershed from erosion and inappropriate sedimentation that may or has resulted from human actions.*		
Policy 1: Support legislation and efforts to secure and retain federal funding for Pacific coast beach protection and renourishment programs.	N/A	The proposed project does not offer legislation for the City of LA government to consider. In addition, the proposed project site does not overlap with Pacific coast beaches.
Policy 2: Continue to prevent or reduce erosion that will damage the watershed or beaches or will result in harmful sedimentation that might damage beaches or natural areas.	Yes, with mitigation	MM-BIO-3 would prevent or reduce erosion.
Section 10. Forest *Objective: Retain the forests as primary watershed, open space and recreational resources for the region.*		
Policy 1: Continue to support the preservation and protection of Angeles Forest and Santa Clarita Woodlands.	N/A	The proposed project would not occur within the Angeles National Forest or Santa Clarita Woodlands.

Table 3.3-13. City of Los Angeles General Plan Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Section 12. Habitats *Objective: Preserve, protect, restore and enhance natural plant and wildlife diversity, habitats, corridors and linkages so as to enable the healthy propagation and survival of native species, especially those species that are endangered, sensitive, threatened or species of special concern.*		
Policy 1: Continue to identify significant habitat areas, corridors and buffers and to take measures to protect, enhance and/or restore them.	N/A	The proposed project would not directly affect significant habitat areas, corridors, or buffers within the City of LA.
Policy 2: Continue to protect, restore and/or enhance habitat areas, linkages and corridor segments, to the greatest extent practical, within City of LA-owned or managed sites.	Yes, with mitigation	The proposed project would not directly affect habitat linkages and corridor segments within City of LA-owned or managed sites. Areas temporarily impact would be restored as described in Appendix D; MM-BIO-9 would provide habitat preservation and/or creation.
Policy 3: Continue to work cooperatively with other agencies and entities in protecting local habitats and endangered, threatened, sensitive and rare species.	Yes, with mitigation	The proposed project, with mitigation, would provide protection of local habitats and endangered, threatened, sensitive, and rare species in accordance with USFWS and CDFW regulations. MM-BIO-1 would provide focused surveys and avoidance and minimization measure for special-status plants; MM-BIO-5 would provide nesting bird surveys and nest monitoring, including survey and nest monitoring for special-status bird species; MM-BIO-6 would provide burrowing owl surveys and avoidance/relocation; and MM-BIO-7 would provide coastal California gnatcatcher surveys. Areas of temporary impact within local habitats would be restored as described in Appendix D; MM-BIO-9 would provide habitat preservation and/or creation.
Policy 4: Continue to support legislation that encourages and facilitates protection of local native plant and animal habitats.	N/A	The proposed project does not offer legislation for the City of LA government to consider.
Section 13. Habitats and Scenic Areas Outside of the City *Objective: Protect important natural habitats and scenic sites outside the City of LA which are owned by the City of LA or are impacted by City of LA facilities.*		
Policy 1: Continue striving to meet the City of LA's water, power and other needs while at the same time striving to be a good steward of natural resources and minimizing impacts on the environment.	Yes, with mitigation	The proposed project involves replacement of a 12-mile segment of transmission line that would increase transmission of renewable energy supplies into the LA Basin. MM-BIO-1 through MM-BIO-10 would minimize impacts on the environment. In addition, areas temporarily impacted would be restored as described in Appendix D.

Table 3.3-13. City of Los Angeles General Plan Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Policy 2: Continue striving to meet legal mandates to avoid, mitigate or abate potential significant impacts associated with City of LA facilities that are located outside of the City of LA's borders.	Yes, with mitigation	The proposed project, with mitigation, would avoid, mitigate or abate potential significant impacts associated with City of LA facilities located outside of the City of LA's borders. MM-BIO-1 through MM-BIO-10 would minimize impacts on the environment associated with City of LA facilities. In addition, areas temporarily impacted within City of LA facilities would be restored as described in Appendix D.
Section 15. Land Form and Scenic Vistas *Objective: Protect and reinforce natural and scenic vistas as irreplaceable resources and for the aesthetic enjoyment of present and future generations.*		
Policy 1: Continue to encourage and/or require property owners to develop their properties in a manner that will, to the greatest extent practical, retain significant existing land forms (e.g., ridgelines, bluffs, unique geological features) and unique scenic features (historic, ocean, mountains, unique natural features) and/or make possible public view or other access to unique features or scenic views.	N/A	The proposed project does not involve the development of significant existing land forms and unique scenic features and/or limit public view or other access to unique features or scenic views.
Open Space and Conservation Element		
Resource Conservation and Management *Objective 6.1: Protect the City of LA's natural settings from the encroachment of urban development, allowing for the development, use, management, and maintenance of each component of the City of LA's natural resources to contribute to the sustainability of the region.*		
Policy 6.1.1: Consider appropriate methodologies to protect significant remaining open spaces for resource protection and mitigation of environmental hazards, such as flooding, in and on the periphery of the City of LA, such as the use of tax incentives for landowners to preserve their lands, development rights exchanges in the local area, participation in land banking, public acquisition, land exchanges, and Williamson Act contracts.	N/A	The proposed project does not occur within privately owned open space areas.
Policy 6.1.2: Coordinate City of LA operations and development policies for the protection and conservation of open space resources by:		
a. Encouraging City of LA departments to take the lead in utilizing water re-use technology, including graywater and reclaimed water for public landscape maintenance purposes and such other purposes as may be feasible;	N/A	The proposed project does not involve development of water utilities or infrastructure.

Table 3.3-13. City of Los Angeles General Plan Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
b. Preserving habitat linkages, where feasible, to provide wildlife corridors and to protect natural animal ranges; and	Yes, with mitigation	The proposed project would not directly affect habitat linkages or wildlife corridors. Areas of temporary impact to natural animal habitat and ranges would be restored as described in Appendix D, and MM-BIO-9 would provide habitat preservation and/or creation.
c. Preserving natural viewsheds, whenever possible, in hillside and coastal areas.	Yes	The proposed project would involve building structures within an already existing transmission alignment; thus, there would be no change to the natural viewsheds within the City of LA's open spaces.
Policy 6.1.3: Reassess the environmental importance of the County of Los Angeles designated Significant Ecological Areas (SEAs) that occur within the City of Los Angeles and evaluate the appropriateness of the inclusion of other areas that may exhibit equivalent environmental value.	N/A	The proposed project does not overlap with SEAs within the City of LA.
Policy 6.1.4: Conserve, and manage the undeveloped portions of the City LA's watersheds, where feasible, as open spaces which protect, conserve, and enhance natural resources.	Yes, with mitigation	The proposed project does not involve development of undeveloped portions of the City LA's watersheds. Areas temporarily impacted would be restored as described in Appendix D, and MM-BIO-9 would provide habitat preservation and/or creation, as applicable.
Policy 6.1.5: Provide for an on-site evaluation of sites located outside of targeted growth areas, as specified in amendments to the community plans, for the identification of sensitive habitats, sensitive species, and an analysis of wildlife movement, with specific emphasis on the evaluation of areas identified on the Biological Resource Maps contained in the Framework Element's Technical Background Report and Environmental Impact Report.	Yes	The proposed project occurs in areas outside of targeted growth areas and includes an evaluation of sensitive habitats and species, as well as an analysis of wildlife movement in accordance with CEQA.
Policy 6.1.6: Consider preservation of private land open space to the maximum extent feasible. In areas where open space values determine the character of the community, development should occur with special consideration of these characteristics.	N/A	The proposed project does not involve development of open space located on private land.
Policy 6.1.7: Encourage an increase of open space where opportunities exist throughout the City of LA to protect wild areas such as the Sepulveda Basin and Chatsworth Reservoir.	N/A	The proposed project does not occur where opportunities for increased open space are present.

Table 3.3-13. City of Los Angeles General Plan Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Outdoor Recreation *Objective 6.2: Maximize the use of the City of LA's existing open space network and recreation facilities by enhancing those facilities and providing connections, particularly from targeted growth areas, to the existing regional and community open space system.*		
Policy 6.2.1: Establish, where feasible, the linear open space system represented in the Citywide Greenways Network map, to provide additional open space for active and passive recreational uses and to connect adjoining neighborhoods to one another and to regional open spaces resources.	N/A	The proposed project already occurs within the Citywide Greenways Network and would not provide opportunities to provide additional open space.
Policy 6.2.2: Protect and expand equestrian resources, where feasible, and maintain safe links in major public open space areas such as Hansen Dam, Sepulveda Basin, Griffith Park, and the San Gabriel, Santa Monica, Santa Susanna Mountains and the Simi Hills. a. Maintain the equestrian facilities on publicly owned lands, such as Hansen Dam and the Los Angeles Equestrian Center. b. Preserve, where feasible, the "Horsekeeping Supplemental Use District" with links to major open areas. c. Support the policies and objectives of the Rim of the Valley Trail Corridor Mastern Plan, the Urban Greenways Plan, and the Major Equestrian and Hiking Trails Plan (and all amendments) as a foundation for promoting and maintaining a trail system within the City of LA.	N/A	The proposed project would not affect equestrian resources within the City of Los Angeles.

CEQA = California Environmental Quality Act; USFWS = U.S. Fish and Wildlife Service; CDFW = California Department of Fish and Wildlife; SEA = County of Los Angeles designated Significant Ecological Area; City of LA = City of Los Angeles

Impacts to biological resources objectives and policies provided within the City of Los Angeles General Plan would be less than significant or mitigated to a less-than-significant level. The project would comply with requirements of the City of Los Angeles General Plan biological resource goals and policies through the implementation of the recommended mitigation measures. Therefore, the project would not conflict with the City of Los Angeles General Plan. Impacts would be **less than significant with mitigation incorporated.**

City of Los Angeles Protected Tree Ordinance

As discussed in Section 3.3.1, Existing Conditions, a tree inventory survey was not conducted within the proposed project; however, trees protected under this ordinance were observed throughout the proposed project. Therefore, the propose project must comply with the City of Los Angeles Protected Tree Ordinance. Implementation of MM-BIO-10 would require a protected tree inventory to be completed prior to construction. Mitigation for tree impacts would adhere to

City of Los Angeles standards. Therefore, the project would not conflict with local policies or ordinances protecting biological resources. Impacts would be **less than significant with mitigation incorporated.**

City of Santa Clarita General Plan

A significant portion of the alignment (within the northern segment) passes through the City of Santa Clarita. The City of Santa Clarita General Plan Conservation and Open Space Element establishes goals and policies for biological resources occurring within the City of Santa Clarita (City of Santa Clarita 2011b). The project is consistent with the City General Plan biological resource policies. Table 3.3-14 includes the goals and policies related to the conservation of biological resources and describe how the project is consistent with the general plan.

Table 3.3-14. City of Santa Clarita General Plan Conservation and Open Space Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Objective CO 3.1: In review of development plans and projects, encourage conservation of existing natural areas and restoration of damaged natural vegetation to provide for habitat and biodiversity.		
Policy CO 3.1.1: On the Land Use Map and through the development review process, concentrate development into previously developed or urban areas to promote infill development and prevent sprawl and habitat loss, to the extent feasible.	Yes	The proposed project would involve replacing a 12-mile segment of an existing 115 kV line within a new 230 kV line, and therefore would concentrate development into a previously developed area. Areas of permanent and temporary impact would be restored as described in Appendix D. Areas temporarily impacted would be restored as described in Appendix D, and MM-BIO-9 would provide habitat preservation and/or creation, as applicable.
Policy CO 3.1.2: Avoid designating or approving new development that will adversely impact wetlands, floodplains, threatened or endangered species and habitat, and water bodies supporting fish or recreational uses, and establish an adequate buffer area as deemed appropriate through site specific review	Yes, with mitigation	Areas temporarily impacted would be restored as described in Appendix D, MM-BIO-9 would provide habitat preservation and/or creation, as applicable. LADWP would be required to obtain Federal and State Agency Permits and comply with the provisions of the permits
Policy CO 3.1.3: On previously undeveloped sites ("greenfields"), identify biological resources and incorporate habitat preservation measures into the site plan, where appropriate. (This policy will generally not apply to urban infill sites, except as otherwise determined by the reviewing agency).	Yes, with mitigation.	Areas of temporary impact would be restored as described in Appendix D; MM-BIO-9 would provide habitat preservation and/or creation, as applicable.

Table 3.3-14. City of Santa Clarita General Plan Conservation and Open Space Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Policy CO 3.1.4: For new development on sites with degraded habitat, include habitat restoration measures as part of the project development plan, where appropriate.	N/A	MM-BIO-9 would provide habitat preservation and/or creation.
Policy CO 3.1.5: Promote the use of site-appropriate native or adapted plant materials, and prohibit use of invasive or noxious plant species in landscape designs	N/A	Areas temporarily impacted would be restored as described in Appendix D; MM-BIO-9 would provide habitat preservation and/or creation.
Policy CO 3.1.6: On development sites, preserve and enhance natural site elements including existing water bodies, soil conditions, ecosystems, trees, vegetation and habitat, to the extent feasible.	N/A	The proposed project is not a development project, and was designed to minimize impacts to special-status biological resources to the extent feasible.
Policy CO 3.1.7: Limit the use of turf-grass on development sites and promote the use of native or adapted plantings to promote biodiversity and natural habitat.	N/A	The proposed project is not a development project and no turf-grass is proposed as part of the project.
Policy CO 3.1.8: On development sites, require tree planting to provide habitat and shade to reduce the heat island effect caused by pavement and buildings	N/A	The proposed project is not a development project, and would comply with existing City tree ordinance (MM-BIO-10).
Policy CO 3.1.9: During construction, ensure preservation of habitat and trees designated to be protected through use of fencing and other means as appropriate, so as to prevent damage by grading, soil compaction, pollution, erosion or other adverse construction impacts	Yes, with mitigation	MM-BIO-2 would provide biological monitoring and temporary construction fencing. MM-BIO-10 would minimize impacts to protected trees.
Policy CO 3.1.10: To the extent feasible, encourage the use of open space to promote biodiversity.	Yes, with mitigation	MM-BIO-9 would provide habitat preservation and/or creation.
Policy CO 3.1.11: Promote use of pervious materials or porous concrete on sidewalks to allow for planted area infiltration, allow oxygen to reach tree roots (preventing sidewalk lift-up from roots seeking oxygen), and mitigate trees sidewalk conflicts, in order to maintain a healthy mature urban forest.	N/A	The proposed project would use existing access roads and existing disturbed, graded areas to the extent feasible, in order to minimize potential environmental effects. MM-BIO-9 would provide habitat preservation and/or creation.
Objective CO 3.2: Identify and protect areas which have exceptional biological resource value due to a specific type of vegetation, habitat, ecosystem, or location.		
Policy CO 3.2.1: Protect wetlands from development impacts, with the goal of achieving no net loss (or functional reduction) of jurisdictional wetlands within the planning area.	Yes, with mitigation	MM-BIO-9 would provide habitat preservation and/or creation and Additionally, LADWP would be required to obtain Federal and

Table 3.3-14. City of Santa Clarita General Plan Conservation and Open Space Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
		State Agency Permits and comply with the provisions of the permits.
Policy CO 3.2.2: Ensure that development is located and designed to protect oak, and other significant indigenous woodlands.	Yes, with mitigation	MM-BIO-10 would provide a protected tree inventory, report, and mitigation.
Policy CO 3.2.3: Ensure protection of any endangered or threatened species or habitat, in conformance with State and federal laws	Yes, with mitigation	Focused special-status plant, ARTO, CRF, CAGN, LBVI, and SWFL surveys were conducted for the project, and no state and/or federally listed species were observed. The proposed project would provide protection of special-status species; MM-BIO-1 would provide focused surveys and avoidance and minimization measures for special-status plants, MM-BIO-6 would provide burrowing owl surveys and avoidance/relocation, MM-BIO-7 would provide coastal California gnatcatcher surveys, and MM-BIO-8 provides avoidance and safe eviction methods for special-status bats.
Policy CO 3.2.4: Protect biological resources in the designated Significant Ecological Areas (SEAs) through the siting and design of development which is highly compatible with the SEA resources. Specific development standards shall be identified to control the types of land use, density, building location and size, roadways and other infrastructure, landscape, drainage, and other elements to assure the protection of the critical and important plant and animal habitats of each SEA. In general, the principle shall be to minimize the intrusion and impacts of development in these areas with sufficient controls to adequately protect the resources.	Yes, with mitigation	Minor impacts would occur within the Santa Clara River SEA within the boundary of the City of Santa Clarita, where a 230 kV structure would replace an existing 115 kV structure, and some minor permanent impacts are proposed toward the southern boundary of the Santa Clara SEA. Areas temporarily impacted would be restored as described in Appendix D; MM-BIO-9 would provide habitat preservation and/or creation.

Table 3.3-14. City of Santa Clarita General Plan Conservation and Open Space Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Objective CO 3.3: Protect significant wildlife corridors from encroachment by development that would hinder or obstruct wildlife movement.		
Policy CO 3.3.1: Protect the banks and adjacent riparian habitat along the Santa Clara River and its tributaries, to provide wildlife corridors.	Yes, with mitigation	Although the proposed project transverses the Santa Clara River SEA, the project would have minimal impacts to riparian habitat within this area, and the area would continue to provide wildlife corridors post-construction. Areas temporarily impacted would be restored as described in Appendix D; MM-BIO-9 would provide habitat preservation and/or creation.
Policy CO 3.3.2: Cooperate with other responsible agencies to protect, enhance, and extend the Rim of the Valley trail system through Elsmere and Whitney Canyons, and other areas as appropriate, to provide both recreational trails and wildlife corridors linking the Santa Susana and San Gabriel Mountains.	Yes	The proposed project would not substantially affect wildlife corridors or recreational trails. The proposed project would replace the existing 115 kV line with an upgraded 230 kV line within the existing transmission line corridor.
Policy CO 3.3.3: Identify and protect one or more designated wildlife corridors linking the Los Padres and Angeles National Forests through the Santa Clarita Valley (the San Gabriel-Castaic connection).	Yes	The proposed project would result in minimal impacts associated with structure upgrades, and would not significantly affect important wildlife corridors (i.e., the San Gabriel-Castaic connection).
Policy CO 3.3.4: Support the maintenance of Santa Clarita Woodlands Park, a critical component of a cross-mountain range wildlife habitat corridor linking the Santa Monica Mountains to the Angeles and Los Padres National Forests.	N/A	The proposed project would not affect Santa Clarita Woodlands Park.
Policy CO 3.3.5: Encourage connection of natural open space areas in site design, to allow for wildlife movement.	Yes, with mitigation.	The proposed project would replace the existing 115 kV line with and upgraded 230 kV line within the same transmission corridor. Impacts would be minimal and would not impeded wildlife movement through the area. Additionally, areas temporarily impacted would be restored as described in Appendix D, and MM-BIO-9 would provide habitat preservation and/or creation.

Table 3.3-14. City of Santa Clarita General Plan Conservation and Open Space Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Objective CO 3.4: Ensure that development in the Santa Clarita Valley does not adversely impact habitat within the adjacent National Forest lands.		
Policy CO 3.4.1: Coordinate with the United States Forest Service on discretionary development projects that may have impacts on the National Forest.	N/A	No development would occur in a National Forest as part of the project.
Policy CO 3.4.2: Consider principles of forest management in land use decisions for projects adjacent to the National Forest, including limiting the use of invasive species, discouraging off-road vehicle use, maintaining fuel modification zones and fire access roads, and other measures as appropriate, in accordance with the goals set forth in the Angeles National Forest Land Management Plan.	N/A	No development would occur in a National Forest as part of the project.
Policy CO 3.4.3: On the Land Use Map, maintain low density rural residential and open space uses adjacent to forest land, and protect the urban-forest interface area from overdevelopment.	N/A	No development would occur in a National Forest as part of the project.
Policy CO 3.4.4: Participate as a stakeholder in planning efforts by the United States Forest Service for land uses within the National Forest, providing input as appropriate.	N/A	No development would occur in a National Forest as part of the project.
Objective CO 3.5: Maintain, enhance, and manage the urban forest throughout developed portions of the Santa Clarita Valley to provide habitat, reduce energy consumption, and create a more livable environment.		
Policy CO 3.5.1: Continue to plant and maintain trees on public lands and within the public right-of-way to provide shade and walkable streets, incorporating measures to ensure that roots have access to oxygen at tree maturity, such as use of porous concrete.	Yes, with mitigation	MM-BIO-10 would provide a protected tree inventory, report, and mitigation.
Policy CO 3.5.2: Where appropriate, promote planting of trees that are native or climactically appropriate to the surrounding environment, emphasizing oaks, sycamores, maple, walnut, and other native species in order to enhance habitat, and discouraging the use of introduced species such as eucalyptus, pepper trees, and palms except as ornamental landscape features.	Yes, with mitigation	MM-BIO-10 would provide a protected tree inventory, report, and mitigation.

Table 3.3-14. City of Santa Clarita General Plan Conservation and Open Space Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Policy CO 3.5.3: Pursuant to the requirements of the zoning ordinance, protect heritage oak trees that, due to their size and condition, are deemed to have exceptional value to the community.	Yes, with mitigation	MM-BIO-10 would provide a protected tree inventory, report, and mitigation.
Objective CO 3.6: Minimize impacts of human activity and the built environment on natural plant and wildlife communities.		
Policy CO 3.6.1: Minimize light trespass, sky-glow, glare, and other adverse impacts on the nocturnal ecosystem by limiting exterior lighting to the level needed for safety and comfort; reduce unnecessary lighting for landscaping and architectural purposes, and encourage reduction of lighting levels during nonbusiness nighttime hours.	N/A	No unnecessary lighting would result from the proposed project; construction would generally occur during the daytime, and when nighttime lighting is required would be directed toward work areas and away from natural areas.
Policy CO 3.6.2: Reduce impervious surfaces and provide more natural vegetation to enhance microclimates and provide habitat. In implementing this policy, consider the following design concepts: a. Consideration of reduced parking requirements, where supported by a parking study and/or through shared use of parking areas; b. Increased use of vegetated areas around parking lot perimeters; such areas should be designed as bioswales or as otherwise determined appropriate to allow surface water infiltration; c. Use of connected open space areas as drainage infiltration areas in lieu of curbed landscape islands, minimizing the separation of natural and landscaped areas into isolated “islands”; d. Breaking up large expanses of paving with natural landscaped areas planted with shade trees to reduce the heat island effect, along with shrubs and groundcover to provide diverse vegetation for habitat.	N/A	The proposed project would use existing access roads and existing disturbed, graded areas to the extent feasible, in order to minimize potential environmental effects.
Policy CO 3.6.3: Restrict use of unauthorized off-road vehicles within sensitive habitat areas through signage, fencing, or other means as appropriate.	Yes, with mitigation	MM-BIO-2 would provide biological monitoring and temporary construction fencing. Proposed project is a utility project, with restricted public access.

Table 3.3-14. City of Santa Clarita General Plan Conservation and Open Space Goals and Policies

Protection of Biological Resources Objectives and Policies	Consistency	Analysis
Policy CO 3.6.4: Provide public information and support with demonstration sites at City facilities on gardening and landscaping techniques to reduce spread of invasive species and pollution from pesticides and fertilizers that threaten natural ecosystems.	N/A	Proposed project is a utility project not for public use.
Policy CO 3.6.5: Ensure revegetation of graded areas and slopes adjacent to natural open space areas with native plants (consistent with fire prevention requirements).	Yes, with mitigation.	MM-BIO-9 would provide habitat preservation and/or creation, and MM-BIO-4 would provide a fire management plan.
Objective CO 3.7: Provide public access to and education about natural habitats and ecosystems.		
Policy CO 3.7.1: Support the public education programs offered at the Placerita Canyon Nature Center and Ed Davis Park (Sonia Thompson Nature Center).	N/A	Proposed project is a utility project not for public use.
Policy CO 3.7.2: Seek opportunities for partnerships with schools, non-profit organizations, and volunteers, to increase public access to and information about natural areas.	N/A	Proposed project is a utility project, with restricted public access.

kV = kilovolt; SEA = significant ecological area.

Impacts to biological resources objectives and policies would be less than significant or mitigated to a less-than-significant level. The project would comply with requirements of the City of Santa Clarita General Plan biological resource goals and policies through the implementation of the recommended mitigation measures. Therefore, the project would not conflict with the City of Santa Clarita General Plan. Impacts would be **less than significant with mitigation incorporated.**

City of Santa Clarita Significant Ecological Area Designations

The City of Santa Clarita recognizes the Santa Clara River SEA within the City limits. The biological and ecological function of the Santa Clara River SEA is linked to the river basin for its entire length. Thus, the biogeographic limits of the SEA extend downstream through Los Angeles and Ventura Counties to its confluence with the Pacific Ocean at its downstream extent and the river basin encompasses significant tributary drainages (i.e., Piru Creek, Sespe Creek, Santa Paula Creek, and Wheeler Creek). The Santa Clara River and its tributary creeks are recognized as the single most important natural feature to facilitate wildlife movement through the County. The segment of the Santa Clara River that passes through the City of Santa Clarita is a dry channel except during seasonal runoff flows, which is essential to the continued genetic isolation of the unarmored three-spine stickleback population in the upper reaches of the river. The river also supports relatively intact stands of alluvial sage scrub, riparian woodland, and southern riparian scrub habitats, providing a continuum of aquatic and terrestrial movement opportunities, shelter, forage, and resident habitat from

Ventura to the Antelope Valley. The drainage connects both districts of the Angeles National Forest and links together two large public resource preserves (Vasquez Rocks and Placerita County Natural Areas).

The northern segment of the 12-mile project alignment crosses the Santa Clara River within the designated Santa Clara River SEA within the City of Santa Clarita. Additionally, the southern portion of the project alignment crosses Elsmere Canyon, Whitney Canyon, and Placerita Canyon within the designated Santa Clara River SEA in the City of Santa Clarita. The project would permanently impact 5.27 acres (2.0%) of chamise chaparral, California sagebrush-California buckwheat scrub, California sagebrush-purple sage, California sagebrush-black sage, Hoary leaf ceanothus chaparral, Hoary leaf ceanothus-chamise, non-native grassland, coast live oak woodland, sugarbush chaparral, big sagebrush, mulefat thickets, scale broom, unvegeated channel, and disturbed land within the Santa Clarita River in the City of Santa Clarita. The project would temporarily impact 3.90 acres (1.5%) of chamise chaparral, California sagebrush, California sagebrush-California buckwheat scrub, California sagebrush-purple sage, California sagebrush-black sage, Hoary leaf ceanothus chaparral, Hoary leaf ceanothus-chamise, non-native grassland, coast live oak woodland, coast live oak/hairy leaf ceanothus, sugarbush chaparral, big sagebrush, mulefat thickets, unvegeated channel, and disturbed land within the Santa Clarita River in the City of Santa Clarita. Within the study area, approximately 253.46 acres of habitat within the Santa Clara River SEA in City of Santa Clarita would not be impacted by the proposed project. Minor temporary and permanent impacts are proposed to occur within the southern portion of the Santa Clara River SEA. A 230 kV transmission line structure would replace the existing 115 kV line structure within this area; thus, overall impacts due to the structure replacements within the SEA would be minimal. Additionally, a permanent work area would impact a portion of the Santa Clara River SEA dominated by big sagebrush scrub, with minor direct impacts also proposed to an unvegetated channel, which is a tributary to the Santa Clara River. Temporary impacts would be restored following the completion of construction activities as described in Appendix D; therefore, temporary impacts to the Santa Clara River SEA within the City of Santa Clarita jurisdiction would be less than significant. Implementation of mitigation measure MM-BIO-9 (habitat preservation and/or creation) and compliance with the provisions of federal and state agency permits would reduce permanent impacts to the Santa Clara SEA within the City of Santa Clarita to less than significant.

Potential indirect impacts would result from construction activities and could include impacts related to or resulting from the generation of fugitive dust, as a result of human trampling of vegetation outside the work areas, colonization of non-native or invasive plants, changes in hydrology resulting from construction, including sedimentation and erosion, introduction of chemical pollutants, and damage from inadvertent fires during construction. Potential short-term or temporary indirect impacts to the Santa Clara River SEA within the City of Santa Clarita are considered significant absent mitigation. Project implementation of MM-BIO-2 would reduce potential impacts to a less-than-significant level through environmental training, biological monitoring, regular communication with contractor regarding designated work areas, and weekly inspection of fencing to minimize potential for erosion. Additionally, prior to commencement of any ground-disturbing activities, temporary construction fencing would be installed to identify the limits of grading/disturbance, which would reduce potential human trampling outside of the construction limits and minimize the potential spread of non-native weeds or invasive plants. MM-BIO-3 requires implementation of BMPs to reduce spread of invasive plants, reduce direct and indirect impacts to jurisdictional features, and reduce potential for chemical pollution to jurisdictional features, and MM-BIO-4 requires a fire management plan which identifies fire prevention procedures during construction. Implementation of these measures would minimize impacts from generation of fugitive

dust, fire hazard, and chemical pollutants. Additionally, federal and state agency permits may identify additional provisions to protect against indirect impacts. Potential indirect impacts to jurisdictional waters would be **less than significant with incorporation of mitigation**.

City of Santa Clarita Oak Tree Ordinance

Per the Santa Clarita Oak Tree Preservation Section 17.51.040, impacts such as pruning, encroaching cutting, relocating or removal of any Quercus species without prior approval through an oak tree permit (17.23.170) will not be allowed (City of Santa Clarita 1989). Implementation of MM-BIO-10 would require a protected tree inventory to be completed prior to construction. Mitigation for tree impacts would adhere to City of Santa Clarita standards. Therefore, the project would not conflict with local policies or ordinances protecting biological resources. Therefore, the project would not conflict with local policies or ordinances protecting biological resources. Impacts would be **less than significant with mitigation incorporated**.

3.3.6 Mitigation Measure(s)

The following mitigation measure(s) would reduce the potential for direct and indirect impacts on special-status plant and wildlife species, sensitive natural communities, jurisdictional waters, and wildlife corridors by ensuring that special-status resources would be avoided to the extent possible and compensatory mitigation provided where necessary.

MM-BIO-1
Pre-Construction Surveys and Avoidance and Minimization Measures for Special-Status Plants

Pre-Construction Special-Status Plant Surveys. To mitigate for potential impacts to habitat occupied by special-status plant species (if any), surveys shall be conducted within impact areas where special-status plant species have a moderate potential to occur. (Such surveys are only necessary in impact areas that were not surveyed in 2017 and 2018. See Table 12 for a list of the specific locations where focused surveys for special-status plant species are required.) These focused surveys shall occur during the season prior to construction and shall be conducted during a period when the target species would be observable and identifiable (e.g., blooming period for annuals). Focused surveys for special-status plant species shall be conducted by a qualified biologist according to: the CNPS Botanical Survey Guidelines (CNPS 2001); Protocols for Surveying and Evaluating Impacts to Special Status Native Populations and Natural Communities (CDFG 2009); and U.S. Fish and Wildlife Service General Rare Plant Survey Guidelines (Cypher 2002).

Avoidance and Minimization Measures. If special-status plant species are detected during focused survey efforts described above, the full extent of the occurrence within the area shall be recorded. The location of each special-status plant occurrence shall be mapped and number of individuals for each occurrence documented. If impacts to special-status plants cannot be avoided, the following measures shall be implemented:

1. Special-status plants in the vicinity of the disturbance will be temporarily fenced or prominently flagged and a buffer established around the populations to prevent inadvertent encroachment by vehicles and equipment during the activity;

2. Seeds will be collected and stored in appropriate storage conditions (e.g., cool and dry), and dispersed/transplanted following the construction activity and reapplication of salvaged topsoil; and
3. The top 6 inches of topsoil will be salvaged, stockpiled, and replaced as soon as practicable after project completion. Soil stockpiles shall be stabilized, consistent with the project's Stormwater Pollution Prevention Plan. The salvaged topsoil shall be redistributed and contoured to blend with surrounding grades.

In the event that a federally or state-listed plant is observed during focused survey, the Los Angeles Department of Water and Power (LADWP) shall consult with the applicable agency (i.e., CDFW and/or USFWS) and obtain written concurrence for measures required for federally or state-listed plant species, if observed.

MM-BIO-2
Biological Monitoring, Avoidance, and Fencing

Biological Monitoring. To prevent disturbance to areas outside the limits of disturbance, all clearing and grubbing activities within habitats potentially suitable to support special-status biological resources (i.e., waterways, disturbed land, coastal scrub, chaparral, non-native grassland, riparian, and woodland habitats) shall be monitored by a qualified biologist.

Biological monitoring shall include the following:

1. Attend the preconstruction meeting with the contractor and other key construction personnel prior to clearing, grubbing, or grading to reduce conflict between the timing and location of construction activities with other mitigation requirements (e.g., seasonal surveys for nesting birds).
2. Conduct an environmental training with the construction personnel outlining the biological avoidance and mitigation measures.
3. Conduct meetings with the contractor and other key construction personnel describing the importance of restricting work to designated areas prior to clearing, grubbing, or grading. Perform regular inspections of fencing and erosion control measures (daily during rain events, if safe).
4. Discuss procedures/training for minimizing harm to or harassment of wildlife encountered during construction with the contractor and other key construction personnel prior to clearing, grubbing, or grading.
5. Conduct pre-construction sweeps in areas with suitable habitat to support special-status biological resources (i.e., waterways, disturbed land, coastal scrub, chaparral, non-native grassland, riparian, and woodland habitats). Supervise and conduct regular spot checks during vegetation clearing, grubbing, and grading, as well as conduct monitoring in areas determined to have potential to support special-status species (as determined by a qualified biologist) to ensure against direct and indirect impacts to biological resources that are intended to be protected and preserved.

6. Flush species (i.e., avian or other mobile species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities during pre-construction sweeps.
7. If special-status species (e.g., western spadefoot, California glossy snake, Blainville's horned lizard, San Diegan tiger whiptail, and/or silvery legless lizard,) are detected in the work area, a biologist possessing an appropriate California scientific collecting permit to handle special-status species will capture and relocate individuals to nearby undisturbed areas with suitable habitat outside of the construction area, but as close to their origin as possible. All wildlife moved during project activities shall be documented by the biologist on site.
8. Verify that the construction contractor Qualified Storm Water Practitioner (QSP) is implementing the stormwater pollution prevention plan (SWPPP) best management practices (BMPs) and maintaining physical BMPs, as well as the stormwater management practices for protection of biological resources outlined in MM-BIO-3.
9. Periodically monitor the construction site to see that dust is minimized. If the biological monitor determines that dust is adversely affecting special-status species, the monitor shall require the construction personnel to implement best available control measures to reduce dust. Examples of such best available control measures include periodic watering of work areas, application of environmentally safe soil stabilization materials, and/or roll compaction.
10. Periodically monitor the construction site to verify that artificial security light fixtures are directed away from open space and are shielded.
11. At the end of each workday, any open holes (including large/steep excavations) shall be inspected by the on-site biologist and subsequently fully covered with steel plates, plywood, or other effective coverings to prevent entrapment of wildlife species. If fully covering the excavations is impractical, ramps will be used to provide a means of escape for wildlife that enter the excavations, or open holes will be securely fenced with exclusion fencing. If common wildlife species are found in a hole, the biological monitor shall immediately be informed and the animal(s) shall be removed. If the animal(s) is/are a sensitive species that require(s) special handling authorization, a qualified biologist (agency-permitted or approved to handle a specific species) shall remove the animal before resuming work in that immediate area. The applicant shall specify the requirement to cover all open holes, create ramps, or install exclusion fencing around open holes in its agreements with all construction contractors.

Temporary Construction Fencing. To prevent inadvertent disturbance to sensitive vegetation and species adjacent to the proposed project area, temporary fencing and/or staking shall be installed prior to construction activities around the perimeter of the work areas, as feasible with topography and large vegetation. The fencing shall be placed to protect from inadvertent disturbance outside of the limits of grading as well as to prevent unauthorized access into the work areas. Construction activities would be conducted in a manner to avoid jurisdictional waters to the maximum extent practicable.

MM-BIO-3

Stormwater Management for Biological Resources Protection. Prior to proposed project construction, the Los Angeles Department of Water and Power (LADWP) or its construction contractor will develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with State Water Resources Control Board permitting requirements. In addition, the following measures and/or restrictions will be incorporated into the project for the protection of biological resources from stormwater-related effects and noted on construction plans to avoid impacts to special-status species, sensitive vegetation communities, and/or jurisdictional waters during construction. The biologist shall verify the implementation of the following design requirements:

1. No planting or seeding of invasive plant species (per the most recent version of the California Invasive Plant Council California Invasive Plant Inventory for the project region) shall be permitted.

   Any equipment or vehicles driven and/or operated within jurisdictional waters of the United States/state shall be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products that could be deleterious to aquatic life if introduced to the watercourse. No equipment maintenance or storage shall be performed within 200 feet of jurisdictional waters of the United States/state where petroleum products or other pollutants from the equipment may enter these areas.

2. Littering shall be prohibited and trash shall be removed from construction areas and contained in established covered receptacles. All food-related trash and garbage shall be removed from the construction sites.

MM-BIO-4

Fire Risk Management Plan. A Fire Risk Management Plan shall be developed and implemented in accordance with MM-HAZ-1. To protect special-status resources (including special-status vegetation communities) from fire risk, annual maintenance of fuel modification zones shall also be conducted and revegetation shall be conducted with acceptable locally indigenous plants. All personnel shall be advised of their responsibility under the applicable fire laws and regulations, including precautions and implementation of practical measures to report and suppress fires during construction.

MM-BIO-5

Nesting Bird Survey. This measure is provided to protect nesting special-status species and more common species protected under the Migratory Bird Treaty Act, which prohibits the "take" of any migratory bird or any part, nest, or eggs of any such bird. The Migratory Bird Treaty Act applies to over 800 species of birds, including rare and common species. Burrowing owl is addressed separately in a species-specific biological resource protection measure (MM-BIO-6).

If construction activity occurs during the nesting season (typically February 1 through August 31), a biological survey for nesting bird species shall be conducted within a 300-foot buffer (or a 500-foot buffer for raptors) of the proposed work area. This survey shall occur within 72 hours prior to construction at the particular work area.

Pre-construction nesting surveys are necessary to assure avoidance of impacts to nesting raptors (e.g., Cooper's hawk (*Accipiter cooperii*) and red-tailed hawk (*Buteo jamaicensis*)) and/or birds protected by the federal Migratory Bird Treaty Act. If any active nests are detected, the area shall be flagged and mapped with a minimum of a 25-foot buffer and up to a maximum of 500 feet for raptors, as determined by the project biologist, and shall be avoided until the nesting cycle is complete.

If construction-related activities that are excessively noisy (e.g., clearing, grading, grubbing, or prolonged helicopter use) occur during the period of February 1 through August 31, and nesting CAGN (or other listed birds including LBVI) and/or raptors are detected by the biologist, the biologist shall have the authority to establish protections for the nesting bird(s) and/or raptor(s) based on the biology of the species. Such protections may include: noise from construction activity is kept below 60 A-weighted decibels equivalent continuous sound level (dBA L_{eq}) or preconstruction ambient noise levels, whichever is greater; no-disturbance buffers are established around the nest; temporary sound walls are set up between the nest and the construction work area; observation of the birds for signs of disturbance and ceasing activity in the event that disturbance is observed.

MM-BIO-6

Burrowing Owl Surveys and Avoidance/Relocation. No less than 14 days prior to ground-disturbing activities (vegetation clearance, grading), a qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct pre-construction take avoidance surveys on and within 200 meters (656 feet) of the construction zone within areas of suitable habitat for burrowing owl (i.e., disturbed land, grassland, upland mustard, chamise/annual grass-forb, and unvegetated channels) to identify occupied breeding or wintering burrowing owl burrows. The take avoidance burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 Staff Report; CDFG 2012). Burrows with fresh burrowing owl sign or presence of burrowing owls will be documented. Areas deemed to be unsuitable burrowing owl habitat based on vegetation communities and results of the burrowing owl habitat assessment will be excluded from these surveys.

If burrowing owls are detected on site, no ground-disturbing activities shall be permitted within 200 meters (656 feet) of an occupied burrow during the breeding season (February 1 to August 31), unless otherwise allowed by CDFW. During the nonbreeding season (September 1 to January 31), ground-disturbing work can proceed near active burrows as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.

If avoidance of active burrows is infeasible during the nonbreeding season, then, before breeding behavior is exhibited and after the burrow is confirmed empty by site surveillance and/or scoping, a qualified biologist shall implement a passive relocation program in accordance with Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation (CDFG 2012). Passive relocation consists of excluding burrowing owls from occupied burrows and providing suitable artificial burrows nearby for the excluded burrowing owls. If required, a burrowing owl monitoring and mitigation

plan shall be prepared that outlines how passive relocation would occur and where the replacement burrows would be constructed. It would also outline the monitoring and maintenance requirements for the artificial burrows.

MM-BIO-7

Coastal California Gnatcatcher Surveys. To mitigate for potential impacts to occupied habitat by coastal California gnatcatcher, focused surveys shall be conducted in suitable habitat prior to construction within the temporary and permanent impact footprints that were not surveyed in 2018 (see Table 13 and *2018 Focused California Gnatcatcher Survey Report for the Los Angeles Department of Water and Power (LADWP) Power Plant 1 and Power Plant 2 Transmission Line Conversion Project, Los Angeles County, California* (Dudek 2018)). The focused surveys shall be performed according to the currently accepted USFWS protocol. The proposed project occurs outside of a Natural Communities Conservation Plan (NCCP) enrolled area, therefore, the focused surveys shall include six survey passes at a minimum of 7-day intervals between visits during the breeding season (March 15 through June 30). (If performed outside the breeding season, then nine surveys performed at minimum 14-day intervals may be performed according to protocol.) In accordance with the protocol, no more than 80 acres of suitable habitat shall be surveyed by a single permitted biologist during each site visit conducted.

If focused surveys are negative, no additional mitigation is required. If focused surveys are positive, informal consultation with USFWS shall occur. If required by USFWS, an incidental take permit (ITP) shall be obtained. Occupied habitat shall be mitigated at a minimum 1:1 ratio for temporary impacts, 2:1 ratio for permanent impacts, or as specified by the USFWS (e.g., within an ITP or as a result of informal consultation). Avoidance and minimization measures shall be implemented in accordance with USFWS specifications or as negotiated with the USFWS through informal consultation and shall include, at a minimum:

1. Environmental awareness training for all construction personnel to educate personnel about coastal California gnatcatcher, protective status avoidance measures to be implemented by all personnel, including the avoidance of nesting bird season to the greatest extent feasible and minimization of vegetation impacts within suitable coastal scrub habitat;
2. Removal of suitable coastal scrub vegetation shall only occur outside of the coastal California gnatcatcher breeding season (so, only between September 1 and February 14);
3. Establishment of environmentally sensitive areas around coastal California gnatcatcher nest locations (500 foot avoidance buffer or as otherwise allowed by USFWS) by a qualified biologist prior to the start of any ground- or vegetation-disturbing activities, which shall be maintained and avoided during construction activities and until the nest is determined by a qualified biologist to no longer be active; and
4. Presence of a qualified biological monitor during initial grading activities, adjacent to environmentally sensitive areas, near active nest locations, and as needed to document compliance with USFWS specifications, the biological monitor will have the authority to stop work as needed to avoid direct impacts to coastal California gnatcatcher.

MM-BIO-8

Roosting Bats. No less than 30 days prior to commencement of construction activities for each construction area with suitable habitat (i.e., rocky outcrops, cliffs with crevices, man-made structures, and trees within grassland, chaparral, coastal scrub, and woodland habitats) to support special-status roosting bats (i.e., pallid bat, spotted bat, and western mastiff bat), a pre-construction survey shall be conducted by a qualified biologist to determine whether active roosts of special-status bats (i.e., maternity roosts, non-maternity roosts, and winter hibernacula) are present in the construction disturbance zone or within 300 feet of the project disturbance zone boundary.

If roosts are detected during pre-construction surveys, the following avoidance measures shall be implemented unless relocation and/or take is authorized under applicable law.

1. If an active maternity roost is identified, the maternity roost shall not be directly disturbed, and some construction activities, such as mass-grading or other activities involving heavy equipment, within 300 feet of the maternity roost may be postponed or halted until the maternity roost is vacated and juveniles have fledged, as determined by the qualified biologist. The rearing season for native bat species in California is approximately April 1 through August 31.
2. If non-breeding bat roosts (hibernacula or non-maternity roosts) are found within the disturbance zone, the individuals shall be safely evicted, under the direction of the qualified biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the project biologist (e.g., installation of one-way doors). If flushing species from tree or rock roosts is required, this shall be done when temperatures are sufficiently warm for bats to exit the roost, because bats do not typically leave their roost daily during winter months. In situations requiring one-way doors, a minimum of 1 week shall pass after doors are installed and temperatures should be sufficiently warm (for winter hibernacula) for bats to exit the roost. This action should allow all bats to leave during the course of one 1 week. If a roost needs to be removed and the qualified biologist determines that the use of one-way doors is not necessary, the roost shall first be disturbed following the direction of the qualified biologist at dusk to allow bats to escape during the darker hours. Once the bats escape, the roost site shall be removed or the construction disturbance shall occur the next day (i.e., there shall be no less or more than 1 night between initial disturbance and the roost removal).

MM-BIO-9

Habitat Preservation and/or Creation. To mitigate for impacts to vegetation communities, habitats for special-status wildlife species and occurrences of special-status plant species, suitable off-site mitigation land shall be acquired. LADWP shall purchase habitat credit or provide for the conservation of habitat generally consistent with the assemblage of vegetation communities impacted by the project. To avoid and minimize temporary impacts to jurisdictional waters, temporary impact areas (including staging laydown areas, stringing pads, temporary access routes, and temporary work pads) shall be sited to avoid jurisdictional waters to the maximum extent practicable. The proposed project shall mitigate for permanent impacts to jurisdictional waters, including riparian habitat, at a

minimum of 1:1 mitigation ratio, or as otherwise determined through the federal and state agency permitting process. Mitigation for permanent impacts to jurisdictional waters would be through the reestablishment, rehabilitation, enhancement, or preservation of jurisdictional waters through an agency approved mitigation bank or in lieu fee program or through permittee-responsible mitigation as defined by the ACOE.

MM-BIO-10

Protected Tree Inventory. To mitigate for potential impacts to protected trees, a protected tree inventory shall be conducted within the temporary and permanent impact footprints, including a 200-foot buffer to account for indirect impacts, prior to construction. The inventory shall be performed by International Society of Arboriculture (ISA) certified arborists qualified to perform a protected tree assessment within Los Angeles County, City of Los Angeles, and City of Santa Clarita. The arborist(s) shall conduct a physical inventory, collecting tree location and arboricultural attribute information for each tree within the potential impact areas the meets the minimum size requirements, as defined within the County of Los Angeles Protected Tree Ordinance, City of Los Angeles Protected Trees, and City of Santa Clarita Oak Tree Ordinance. A Protected Tree Report, including impacts and mitigation (as applicable to each local ordinance) shall be prepared. Permit applications, if applicable, shall be submitted prior to construction to the applicable jurisdiction (Los Angeles County, City of Los Angeles, and/or City of Santa Clarita). Permits must be approved prior to construction.

3.3.7 Level of Significance After Mitigation

Implementation of the above mitigation measures would reduce potential impacts to below a level of significance.

Additional work areas were identified after the initiation of focused survey efforts, which occur within potentially suitable habitats for special-status plants; therefore, impacts to special-status plants within these additional work areas are potentially significant. Implementation of MM-BIO-1 requires pre-construction focused special-status plant surveys, avoidance and minimization measures, and mitigation with performance criteria, if applicable, to reduce impacts to less than significant.

Potential impacts to biological resources could result from construction activities and could include impacts related to or resulting from the generation of fugitive dust, as a result of human trampling of vegetation outside the work areas, colonization of non-native or invasive plants, changes in hydrology resulting from construction, including sedimentation and erosion, introduction of chemical pollutants, and damage from inadvertent fires during construction. Implementation of MM-BIO-2 will reduce potential impacts to a less-than-significant level through environmental training, biological monitoring, verification of the stormwater pollution prevention plan (SWPPP), and general monitoring of the BMPs. Additionally, prior to commencement of any ground-disturbing activities, temporary construction fencing would be installed to identify the limits of grading/disturbance, which would reduce potential human trampling outside of the construction limits and minimize the potential spread of non-native weeds or invasive plants. MM-BIO-3 requires implementation of stormwater best management practices and MM-BIO-4 requires a fire management plan which identifies fire prevention procedures during construction. Implementation of these measures would minimize impacts from generation of fugitive dust, fire hazard, and chemical pollutants to less than significant.

Construction activities associated with the proposed project could result in a loss of suitable habitat or direct take of birds, and are considered less than significant. MM-BIO-5 requires nesting bird surveys within 300 feet (500 feet for raptors) of the proposed impact areas and if active nests are found, the biologist shall establish buffers and/or implement monitoring to avoid impacting avian nesting success. Potential direct impacts to protected nesting birds would be less than significant with implementation of MM-BIO-5.

Ground disturbances could potentially result in destruction of burrowing owl dens, destruction of nests, eggs, and young, and entombment of adults. Mitigation measure MM-BIO-6 (burrowing owl pre-construction surveys and avoidance/relocation plan) would result in identification of any burrowing owls within areas potentially impacted by the project, establishment of appropriate buffers, and avoidance of impacts to burrowing owl. Potential direct impacts to burrowing owl would be less than significant with implementation of MM-BIO-2 and MM-BIO-6.

If CAGN occurs within impacted un-surveyed areas, impacts would be significant. As such, MM-BIO-7 requires focused CAGN surveys be conducted within additional work areas with suitable habitat to support CAGN (not previously surveyed during the 2018 CAGN focused survey effort) prior to construction, as well as avoidance, minimization, and mitigation measures (i.e., agency consultation, environmental training, vegetation removal constraints, delineating work areas, biological monitoring, and compensatory mitigation) if CAGN is identified. Potential direct impacts to CAGN would be less than significant with implementation of MM-BIO-5 and MM-BIO-7.

The pallid bat, spotted bat, and western mastiff bat have a moderate to high potential to roost in rocky outcrops, crevices, cliffs, trees or man-made structures (i.e., bridges) and forage at night (particularly over water or adjacent to washes) within the study area. Implementation of MM BIO-8 requires a pre-construction survey for potential active bat roosts, seasonal restrictions to avoid impacts to maternal bat roosts, and methods for safe eviction or flushing bats from non-breeding bat roosts, if present. Potential direct impacts to special-status bats would be less than significant with implementation of MM-BIO-8.

Permanent impacts to 1.27 acres of jurisdictional waters would be a significant impact absent mitigation. With implementation of mitigation measure MM-BIO-9 (habitat preservation and/or creation) and compliance with federal and state agency permits, permanent impacts to jurisdictional waters would be less than significant.

Any impacts to oak trees resulting from the proposed project would potentially conflict with Los Angeles County Oak Tree Ordinance, City of Los Angeles Protected Tree Ordinance, and City of Santa Clarita Oak Tree Ordinance. Implementation of MM-BIO-10 would require a protected tree inventory to be completed prior to construction. Mitigation for tree impacts would adhere to City of Los Angeles standards and City of Santa Clarita standards. Therefore, the project would not conflict with local policies or ordinances protecting biological resources.

3.3.8 References Cited

Atwood, J.L. and J.S. Bolsinger. 1992. Elevational distribution of California Gnatcatchers in the United States. Journal of Field Ornithology 63: 159-168.

Calef, G.W. 1973. Natural mortality of tadpoles in a population of Rana aurora. Ecology 54:741-758.

CDFG (California Department of Fish and Game). 2009. "Protocols for Surveying and Evaluating Impacts to Special Status Native Populations and Natural Communities." November 24, 2009. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline.

CDFG. 2012. Staff report on burrowing owl mitigation. State of California Natural Resources Agency, Department of Fish and Game.

CDFW (California Department of Fish and Wildlife). 2018a. California Natural Diversity Database (CNDDB). RareFind 5.2.14 (Commercial Subscription). Sacramento, California: CDFW, Biogeographic Data Branch. Accessed January 2019. https://map.dfg.ca.gov/rarefind/view/RareFind.aspx.

CDFW. 2018e. "California Natural Community list." Sacramento, California: CDFW. October 15, 2018. Accessed January 2019 at https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities.

City of Los Angeles. 2006a. City of Los Angeles, Ordinance 177404, approved March 13, 2006. Effective April 23, 2006. Accessed January 2019. http://cityplanning.lacity.org/Code_Studies/Other/ProtectedTreeOrd.pdf.

City of Los Angeles. 2006b. *L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles*. Section C. Biological Resources. http://planning.lacity.org/Documents/MajorProjects/CEQAThresholdsGuide.pdf

City of Santa Clarita. 1989. Oak Tree Ordinance No. 89-10, Santa Clarita Municipal Code 17.51.040 Oak Tree Preservation and 17.23.170 Oak Tree Permit, adopted April 25, 1989. Accessed January 2019. https://www.codepublishing.com/CA/SantaClarita/?SantaClarita17/SantaClarita1751.html.

City of Santa Clarita. 2011b. 'Conservation and Open Space Appendix, Significant Ecological Area Designations, County of Los Angeles and City of Santa Clarita' for the City of Santa Clarita General Plan, Conservation and Open Space Element. June 2011. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/Conservation%20and%20Open%20Space%20Appendix.pdf

CNPS (California Native Plant Society). 2001. CNPS Botanical Survey Guidelines. https://cnps.org/wp-content/uploads/2018/03/cnps_survey_guidelines.pdf.

CNPS. 2018. Inventory of Rare and Endangered Plants (online edition, v8-03 0.39). Sacramento, California: California Native Plant Society. Accessed January 2019 at www.rareplants.cnps.org.

Coulombe, H.N. 1971. "Behavior and population ecology of the burrowing owl, *Speotyto cunicularia*, in the Imperial Valley of California." The Condor, 73: 162-176.

County of Los Angeles. 2006. "Sensitive Species Occurring or Potentially Occurring within the Los Angeles County SEAs." Biological Resource Assessment Los Angeles County SEA. Los Angeles County Department of Regional Planning. Prepared by the PCR Project Team. January 2006. http://planning.lacounty.gov/assets/upl/project/sea_sensitive-species-list.pdf

County of Los Angeles. 2015. *Los Angeles County General Plan*. March 2015. http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan.pdf.

County of Los Angeles. 2019. Los Angeles County GIS Data Portal 2019. Accessed January 2019. https://egis3.lacounty.gov/dataportal/

Cypher, E.A. 2002. General Rare Plant Survey Guidelines. https://www.fws.gov/sacramento/es/survey-protocols-guidelines/Documents/rare_plant_protocol.pdf

Gervais, J.A., D.K. Rosenberg, and L.A. Comrack. 2008. "Burrowing Owl (*Athene cunicularia*)." California Bird Species of Special Concern. Studies of Western Birds 1:218-226.

Green, G.A., and R.G. Anthony. 1989. "Nesting success and habitat relationships of Burrowing Owls in the Columbia Basin, Oregon." Condor 91: 347-354.

Google Earth. 2019. Aerial photography and historical aerials.

Haug, E.A., B.A. Millsap, and M.S. Martell. 1993. Burrowing Owl. In A. Poole and F. Gill, editors. The birds of North America, No. 61. The Academy of Natural Sciences, Philadelphia, PA. The American Ornithologists' Union, Washington, D.C.

Historic Aerials Online. 2018. Historic Aerials. Accessed August 2018. http://www.historicaerials.com/.

Jennings, M.R., M.P. Hayes, and D.C. Holland. 1993. A petition to the U. S. Fish and Wildlife Service to place the California Red-legged Frog (*Rana aurora draytonii*) and the Western Pond Turtle (*Clemmys marmorata*) on the list of endangered and threatened wildlife and plants.

Kus, B. 2002. "Least Bell's Vireo (*Vireo bellii pusillus*)." In The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-Associated Birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html.

Lantz, S.J., H. Smith, and D.A. Keinath. 2004. "Species Assessment for Western Burrowing Owl (*Athene cunicularia hypugaea*) in Wyoming." Prepared for the U.S. Department of Interior and Bureau of Land Management.

Martin, D.J. 1973. "Selected aspects of Burrowing Owl ecology and behavior." Condor 75: 446-456.

Nafis. 2016. "California Herps: A Guide to the Amphibians and Reptiles of California." Accessed January 2019. http://www.californiaherps.com.

RWQCB (Regional Water Quality Control Board). 2014. *Water Quality Control Plan for the Los Angeles Region Basin Plan*. September 2014. https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/basin_plan_documentation.html.

Sogge, M.K., D. Ahlers, and S.J. Sferra. 2010. A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher. U.S. Geological Survey. https://pubs.usgs.gov/tm/tm2a10/pdf/tm2a10.pdf

Storer, T.I. 1925. A synopsis of the Amphibia of California. Univ. Calif. Publ. Zool. 27:1-342.

USDA SSURGO (Soil Survey Geographic Database) 2018. Accessed January 2019. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627.

USFWS. 2018a. "Critical Habitat and Occurrence Data". Accessed January 2019. http://www.fws.gov/data.

USFWS. 2018b. Environmental Conservation Online System Information, Planning and Conservation System (IPaC). Accessed January 2019. https://ecos.fws.gov/ipac/.

USFWS. 2018c. National Wetlands Inventory. "NWI Wetlands for California" [Shapefiles]. Data last updated October 15, 2018. Accessed January 2019. http://www.fws.gov/wetlands/Data/State-Downloads.html.

USGS (U.S. Geological Survey). 2018a. U.S. Topo: Maps for America. 7.5-minute topographic quadrangles reviewed for potential habitat and jurisdictional resources. https://www.usgs.gov/core-science-systems/national-geospatial-program/us-topo-maps-america?qt-science_support_page_related_con=0#qt-science_support_page_related_con

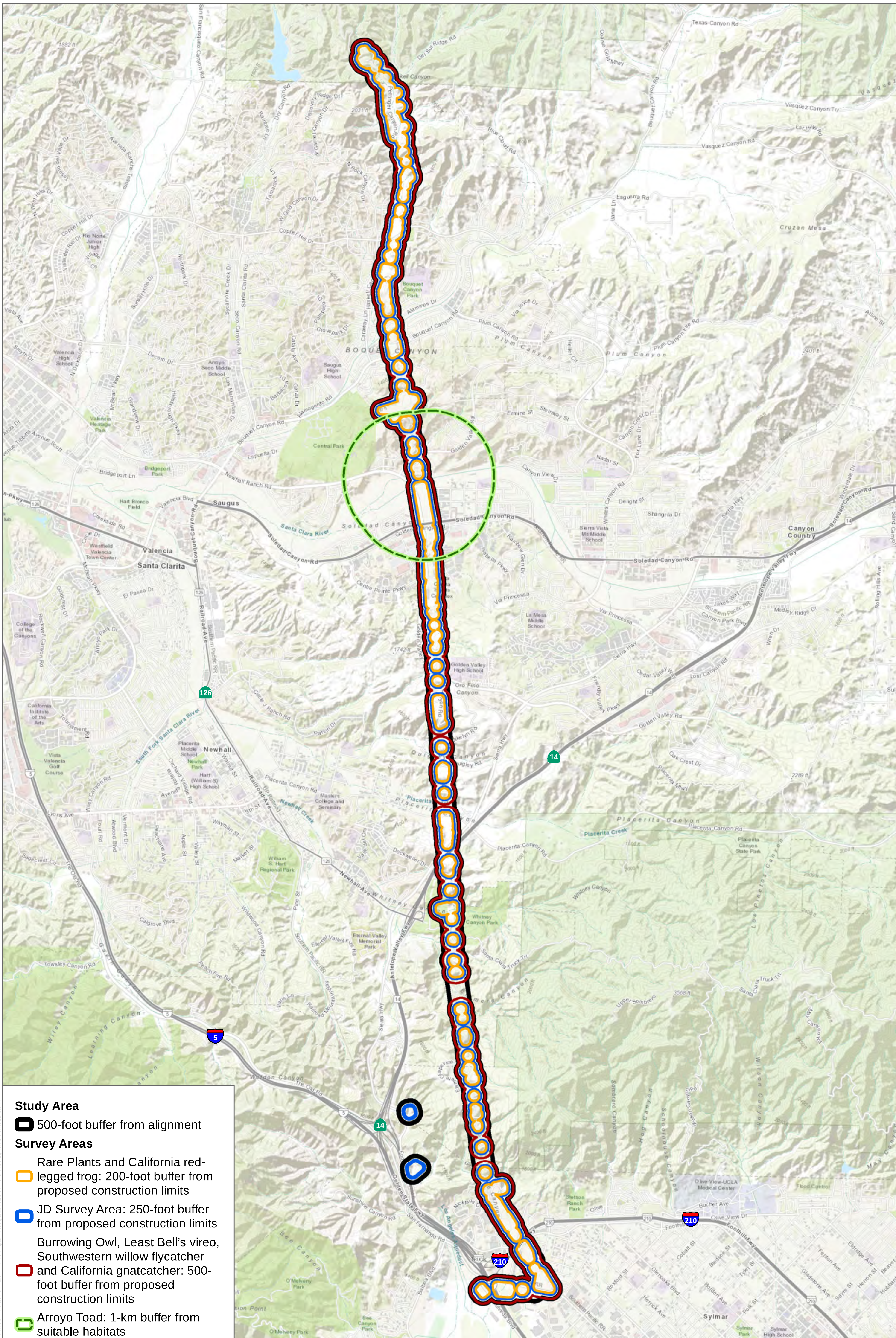
USGS. 2018b. National Hydrography Dataset website. "Flow lines, water points, watershed boundaries for hydrologic units 12 and 8, water bodies" [digital GIS data]. http://nhd.usgs.gov/.

Unitt, P. 2004. San Diego County bird atlas. Proc. San Diego Soc. Nat. Hist. 39.

WRCC (Western Regional Climate Center). 2019. "Newhall, California (046165)." Accessed January 2019. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6165.

Zeiner, D.C., W.F. Laudenslayer Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife: Volume II. Birds*. Sacramento, California: California Department of Fish and Game.

INTENTIONALLY LEFT BLANK



SOURCE: ESRI basemaps

Los Angeles Department of Water & Power

0 2,250 4,500 Feet

FIGURE 3.3-1

Survey Areas

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

3.4 Cultural Resources

This section describes the cultural resources present in the project area; discusses applicable federal, state, and regional regulations pertaining to cultural resources; and evaluates the potential effects on cultural resources associated with development of the proposed project.

Comments received in response to the Notice of Preparation (see Appendix A) included a letter from the Native American Heritage Commission (NAHC) describing tribal consultation requirements and listing recommendations for cultural resources assessments. Recommendations included conducting a records search with the California Historical Research Information System (CHRIS); conducting a field survey (if determined necessary based on the records search results); preparing a professional report detailing the findings of the field survey and records search; conducting a Sacred Lands File search and Native American outreach; and, including provisions for the inadvertent discovery of cultural resources during construction and the protection of such resources. As demonstrated in this section, a cultural resources assessment has been conducted for the proposed project, and this assessment is consistent with these recommendations.

Information contained in this section is based on a review of existing cultural resources; technical data; applicable laws, regulations, and guidelines pertaining to cultural resources; and information from the Cultural Resources Assessment contained in Appendix E of this EIR. Other sources consulted are listed in Section 3.8.

3.4.1 Existing Conditions

The following section provides a historic overview of the San Francisquito PP1 and PP2 transmission line, the results of the CHRIS records search at the South Central Coastal Information Center (SCCIC), the results of pedestrian surveys of the project site, a review of the California NAHC's Sacred Lands File, outreach with local Native American tribes/groups, and an updated evaluation of the San Francisquito PP1 and PP2 Transmission Lines for National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) listing.

California Historical Resources Information System Records Search

On February 23, 2017, Dudek completed a search of the CHRIS at the SCCIC for the project alignment and surrounding 1.0 mile. This search included mapped prehistoric, historical, and built-environment resources; Department of Parks and Recreation site records; technical reports; archival resources; and ethnographic references. Additional consulted sources included historical maps of the proposed project area, the NRHP, the CRHR, the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, the Archaeological Determinations of Eligibility, the LADWP Records Center, and the LADWP Photographic Collection accessed via the Los Angeles Public Library online archives. The confidential records search results are on file at the offices of LADWP.

Previously Conducted Cultural Resource Studies

The SCCIC records indicate that 174 previous cultural resources technical investigations have been conducted within 1.0-mile (804 meters [m]) of the project alignment. Of these, 14 previous studies overlap with the project alignment while the remaining 160 are within the records search buffer, but fall outside of the project alignment. See Appendix E for a list of the previous studies overlap with the project alignment and the records search buffer.

Previously Recorded Cultural Resources

The SCCIC records indicate that 71 resources have been recorded within 1.0-mile (1,608 m) of the project alignment. Of these, 13 resources (have been previously identified within the project alignment. The remaining 58 resources have been recorded within the surrounding search buffer, but fall outside of the project alignment. See Appendix E for a complete list of the resources recorded within the project area and surrounding search buffer.

The 13 resources that are within, or intersect with, the project alignment are comprised of five road alignments (P-19-002145/CA-LAN-002145H, P-19-002150/CA-LAN-002150H, P-19-186912, P-19-188007, and P-19-188492), one transmission line (P-19-186861), the Los Angeles Aqueduct (P-19-002105/CA-LAN-002105H), and the project alignment itself (P-19-002132/CA-LAN-002132H - San Francisquito PP1 and PP2 Transmission Lines). The remaining five resources consist of three homesteads (P-19-003131/CA-LAN-003131H, P-19-004720/CA-LAN-004720H, and P-19-004721/CA-LAN-004721H), one transmission tower that was determined to be part of the project alignment (P-190022), and one prehistoric lithic scatter (P-19-100253).

Of the 13 resources that are within, or intersect with, the project area, eight have not been evaluated for the CRHR or NRHP (P-19-002145/CA-LAN-002145H, P-19-002150/CA-LAN-002150H, , P-19-004720/CA-LAN-004720H, P-19-004721/CA-LAN-004721H, P-19-100253, P-19-186861, P-19-186912, and P-19-188492), one has been determined ineligible (P-19-190022), and four have been recommended eligible (P-19-002105/CA-LAN-002105H, P-19-002132/CA-LAN-002132H, P-19-003131/CA-LAN-003131H, and P-19-188007). It should be noted that while P-19-004720/CA-LAN-004720H and P-19-004721/CA-LAN-004721H have not been formally evaluated, they were previously been considered eligible under a Programmatic Agreement with LADWP.

Pedestrian Survey

An initial cultural resources survey was conducted for the 12-mile transmission line corridor on April 3 and 4, 2017. Two supplemental surveys were conducted on January 12, 2018 and on January 21, 22, and 23, 2019. The survey corridor consists of the area of potential impact (API), which is comprised of those areas within the transmission line corridor that have proposed construction activities and a 100 feet buffer on either side of the alignment for a total survey area of 354 acres.

The pedestrian survey determined twelve of the 13 previously-recorded resources identified in the records search were relocated during the survey. Site P-19-100253 could not be relocated because it was collected during initial

recordation. In addition, two newly-identified archaeological sites (LADWP-001 and LADWP-002) and one isolated artifact (LADWP-ISO-001) were recorded.

Native American Coordination

As part of the process of identifying cultural resources within or near the project site, Dudek contacted the NAHC to request a review of the Sacred Lands File on February 14, 2017. The NAHC emailed a response on February 24, 2017, stating that the results of the Sacred Lands File search failed to indicate the presence of Native American cultural resources in the immediate project area. The NAHC also provided a list of 16 Native American groups and individuals who may have knowledge of cultural resources in the project area. Letters were sent to each of the 16 representatives March 24, 2017 for any knowledge of resources in the project area.

To date, two responses have been received: Beverly Salazar Folkes of the Fernandeno Tataviam Band of Mission Indians called Dudek on April 4, 2017, and stated that the project falls within their Tribal Traditional Use Area. She stated that they have qualified Native American monitors and would like to be involved in the project going forward.

On April 25, 2017, Freddie Romero, Tribal Elder with the Santa Ynez Band of Chumash Indians called and stated that the project is located outside of the Santa Ynez Band of Chumash Indians Traditional Use Area. He asked if other local tribes had been contacted and was informed that 15 additional tribal representatives had been contacted as part of Tribal outreach efforts. Mr. Romero stated that the Santa Ynez would be deferring consultation to the other local tribes.

These responses, in addition to all documentation of coordination with Native American groups and individuals, is provided in Appendix E. Should additional responses be received, they will be forwarded to LADWP. The coordination conducted here does not constitute formal Assembly Bill (AB) 52 consultation.

Assembly Bill 52

The proposed project is subject to compliance with AB 52 (PRC 21074) which requires consideration of impacts to "tribal cultural resources" (TCRs) as part of the CEQA process, and requires LADWP, the CEQA lead agencies for the proposed project, to notify any groups (who have requested notification) of the proposed project who are traditionally or culturally affiliated with the geographic area of the project. A complete record of AB 52 notification and consultation is provided in the Section 3.9, Tribal Cultural Resources of this EIR. All correspondence related to AB 52 is on file with LADWP.

CA-LAN-2132H/P-19-0002132 (San Francisquito PP1 and PP2 Transmission Lines)

The development of the San Fransicquito PP1 and PP2 Transmission Lines began in 1917 as an adjunct to the Los Angeles Aqueduct. The original purpose of the 115kv San Francisquito PP1 and PP2 transmission lines was to carry power from Power Plant #1 at the San Francisquito Reservoir to the City of Los Angeles. The following provides an evaluation of the transmission line in consideration of NRHP and CRHR designation criteria and integrity requirements.

NRHP/CRHR Designation Criteria

Criterion A/1: That are associated with events that have made a significant contribution to the broad patterns of our history.

Upon its completion, the transmission line was the first municipally generated electrical transmission system for the City of Los Angeles. During the early development periods of water and power development in the City, numerous projects were undertaken to create reliable sources of water and power for the growing City. One such project was the construction of the 115 kV San Francisquito PP1 and PP2 transmission lines that would carry power to the City. Throughout the history of transmission line numerous changes have occurred, predominately associated with increased demand for power in the continuously growing City. Despite equipment upgrades and alterations to switching stations and terminus points for the transmission lines, the lines maintain their original function to carry reliable power to the City. Furthermore, the continued usage of the alignment over one hundred years after its initial construction further shows the significance of the transmission line in the continued growth and development of the City and its infrastructure.

While the significance of the PP1 and PP2 lines is well demonstrated, the integrity of the project's segment of the PP1 and PP2 lines is not. NRHP Bulletin 15 (NPS 1990) states that following with regard to integrity considerations under Criterion A:

> A property that is significant for its historic association is eligible if it retains the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or person(s).

While the line does retain one essential physical feature: its alignment; it does not retain integrity of materials or workmanship. Evidence indicates that a substantial portion of the project alignment has been replaced over the years, as pointed out by Dice 2014a:

> Many of the towers north of the Olive Switching Station have been replaced with multi-circuit towers such that the original line is unrecognizable south of Tower 234-3. This means that the final 27 miles of the historic era transmission line has been replaced from the 1952 original, or roughly 12% of the original line.

Additionally, in 1969 much of the PP1 and PP2 lines between Drinkwater Junction and Sylmar Junction, which includes the entirety of the current project alignment, were upgraded to the taller, multi-circuit Haynes Structures present today (Dice 2014a).

In conclusion, the project alignment between the Haskell Canyon and Sylmar switching stations lacks integrity of materials and workmanship from the period of significance and does not contribute to the larger resource's significance through its existing infrastructure. However, the alignment itself is most important to consider under Criterion A/1, as the maintenance, repair, and upgrade of the lines are essential to maintaining the original and intended use of the resource. Given the resource type, it is simply not possible to maintain the original equipment

over the course of a century while simultaneously maintaining the resource's function. Due to PP1 and PP2's strong association with the early infrastructure development of City of Los Angeles and the resource's continuous role in supplying power to the City, Dudek recommends that the larger CA-LAN-2132H/P-19-0002132 resource remain eligible under NRHP/CRHR Criterion A/1 (as determined by the National Park Service in 2004).

Criterion B/2: That are associated with the lives of persons significant in our past.

Archival research failed to indicate any associations with significant persons. For these reasons, the San Francisquito PP1 and PP2 transmission lines do not appear eligible under NRHP/CRHR Criterion B/2.

Criterion C/3: That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

While the San Francisquito PP1 and PP2 transmission lines are representative of an important engineering development in the early history of Los Angeles, alterations to the equipment throughout the years have compromised the significance of the resource from an architectural and engineering perspective. The replacement of a great deal of the PP1 and PP2 lines between Drinkwater Junction and Sylmar Junction in 1969, which includes the entirety of the current project alignment, included the upgrade of the original towers to taller, multi-circuit Haynes Structures that are still present today. The replacement of the towers creates a series of ubiquitous resources that do not convey the original engineering and architectural design used at the time of construction. While the transmission line does retain the requisite integrity of association, location, and setting with its alignment, the replacement of equipment over the years has greatly impacted its ability to convey significance from a historical architectural and engineering standpoint. For these reasons, the San Francisquito PP1 and PP2 transmission lines does not appear eligible under NRHP/CRHR Criterion C/3.

Criterion D/4: That have yielded, or may be likely to yield, information important in prehistory or history.

The subject property is unlikely to yield any information important in prehistory or history and therefore does not appear eligible under NRHP/CRHR Criterion D/4.

Integrity Considerations

Since the initial development of the San Francisquito PP1 and PP2 transmission lines, the transmission line alignment location has remained largely unchanged and is located within the original LADWP right-of-way corridor. While there have been multiple repairs and replacements made to the transmission line since its original construction, the alignment has not changed drastically over time. Although it is clear that the workmanship and materials, and feeling are compromised, it is necessary with this type of resource type to upgrade as demands increase over time. Given the resource type and the fact that important components of infrastructure like transmission lines require maintenance and replacement, the transmission line alignment retains the original association to early Los Angeles infrastructure, as well as, its original location, setting, and design. In summary, despite alterations to the transmission line, the San Francisquito PP1 and PP2 transmission lines retains is most important historic feature, its alignment.

3.4.2 Relevant Plans, Policies, and Ordinances

Federal

National Register of Historic Places

Although there is no federal nexus for this project, resources were evaluated in consideration of NRHP designation criteria.

The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks and historic areas administered by the National Park Service.

NRHP guidelines for the evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, How to Apply the National Register Criteria, as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1990). NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

A historic property is defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the NRHP criteria" (36 Code of Federal Regulations (CFR) Sections 800.16(i)(1)).

State

California Environmental Quality Act

CEQA requires a lead agency to analyze whether historic and/or archaeological resources may be adversely impacted by a proposed project. Under CEQA, a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment" (PRC Section 21084.1). Answering this question is a two-part process: first, the determination must be made as to whether the proposed project involves cultural resources. Second, if cultural resources are present, the proposed project must be analyzed for a potential "substantial adverse change in the significance" of the resource.

Historical Resources

According to State CEQA Guidelines Section 15064.5, for the purposes of CEQA, historical resources are:

- A resource listed in, or formally determined eligible…for listing in the California Register of Historical Resources (PRC 5024.1, Title 14 California Code of Regulations [CCR], Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significance in a historic resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code.
- Any object, building, structure, site, area, place, record, or manuscript that the lead agency determines to be eligible for national, state, or local landmark listing; generally, a resource shall be considered by the lead agency to be historically significant (and therefore a historic resource under CEQA) if the resource meets the criteria for listing on the California Register (as defined in PRC Section 5024.1, Title 14 CCR, Section 4852).

Resources nominated to the California Register of Historic Resources (CRHR) must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity (as defined above) does not meet National Register of Historic Places (NRHP) criteria may still be eligible for listing in the CRHR.

According to CEQA, the fact that a resource is not listed in or determined eligible for listing in the CRHR or is not included in a local register or survey shall not preclude the lead agency from determining that the resource may be an historical resource (PRC Section 5024.1). Pursuant to CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (State CEQA Guidelines, Section 15064.5[b]).

Substantial Adverse Change and Indirect Impacts to Historical Resources

State CEQA Guidelines specify that a "substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (State CEQA Guidelines, Section 15064.5). Material impairment occurs when a project alters in an adverse manner or demolishes "those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion" or eligibility for inclusion

in the NRHP, CRHR, or local register. In addition, pursuant to State CEQA Guidelines Section 15126.2, the "direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects."

The following guides and requirements are of particular relevance to this study's analysis of indirect impacts to historic resources. Pursuant to State CEQA Guidelines (Section 15378), study of a project under CEQA requires consideration of "the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." State CEQA Guidelines (Section 15064(d)) further define direct and indirect impacts:

1. A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project.
2. An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.
3. An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project.

Archaeological Resources

In terms of archaeological resources, PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a proposed project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a], [b], and [c]). CEQA notes that, if an archaeological resource is neither a unique archaeological resource nor an historical resource, the effects of the project on those resources shall not be considered to be a significant effect on the environment (State CEQA Guidelines Section 15064.5[c][4]).

California State Assembly Bill 52

Assembly Bill 52 of 2014 (AB 52) amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3.

Consultation with Native Americans

AB 52 formalizes the lead agency – tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Tribal Cultural Resources

Section 4 of AB 52 adds Sections 21074 (a) and (b) to the PRC, which address tribal cultural resources and cultural landscapes. Section 21074 (a) defines tribal cultural resources as one of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
2. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Sections 21083.2 and 21084.1). Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources

surveys, or designated by local landmarks programs, may be nominated for inclusion in the CRHR. According to PRC Section 5024.1(c), a resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

- **Criterion 1:** It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- **Criterion 2:** It is associated with the lives of persons important in our past.
- **Criterion 3:** It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- **Criterion 4:** It has yielded, or may be likely to yield, information important in history or prehistory.

Resources nominated to the CRHR must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity does not meet NRHP criteria may still be eligible for listing in the CRHR.

Treatment of Human Remains

The disposition of burials falls first under the general prohibition on disturbing or removing human remains under California Health and Safety Code (CHSC) Section 7050.5. More specifically, remains suspected to be Native American are treated under CEQA at CCR Section 15064.5; PRC Section 5097.98 illustrates the process to be followed in the event that remains are discovered. If human remains are discovered during construction, no further disturbance to the site shall occur, and the County Coroner must be notified (CCR 15064.5 and PRC 5097.98).

Local

City of Los Angeles

Los Angeles Historic-Cultural Monuments

Local landmarks in the City of Los Angeles are known as Historic-Cultural Monuments (HCMs) and are under the aegis of the Planning Department, Office of Historic Resources. They are defined in the Cultural Heritage Ordinance as follows (Los Angeles Municipal Code Section 22.171.7, added by Ordinance No. 178,402, effective April 2, 2007):

> Historic-Cultural Monument (Monument) is any site (including significant trees or other plant life located on the site), building or structure of particular historic or cultural significance to the City of Los Angeles, including historic structures or sites in which the broad cultural, economic or social history of the nation, State or community is reflected or exemplified; or which is identified with historic personages or with important events in the main currents of national, State or local history; or which embodies the distinguishing characteristics of an architectural type specimen, inherently

> valuable for a study of a period, style or method of construction; or a notable work of a master builder, designer, or architect whose individual genius influenced his or her age.

For the purposes of SurveyLA, this definition has been broken down into the following four HCM designation criteria that closely parallel the existing NRHP and CRHR criteria:

1. Is identified with important events in the main currents of national, State or local history, or exemplifies significant contributions to the broad cultural, political, economic or social history of the nation, state, city, or community; or
2. Is associated with the lives of Historic Personages important to national, state, city, or local history; or
3. Embodies the distinctive characteristics of a style, type, period, or method of construction; or represents a notable work of a master designer, builder or architect whose genius influenced his or her age; or possesses high artistic values; or
4. Has yielded, or has the potential to yield, information important to the pre-history or history of the nation, state, city or community.

Historic Preservation Overlay Zones

As described by the City of Los Angeles Office of Historic Resources, the Historic Preservation Overlay Zone (HPOZ) Ordinance was adopted in 1979 and amended in 2004 to identify and protect neighborhoods with distinct architectural and cultural resources. HPOZs, commonly known as historic districts, provide for review of proposed exterior alterations and additions to historic properties within designated districts.

Regarding HPOZ eligibility, City of Los Angeles Ordinance Number 175891 states (Los Angeles Municipal Code, Section 12.20.3):

> Features designated as contributing shall meet one or more of the following criteria:
>
> 1. adds to the Historic architectural qualities or Historic associations for which a property is significant because it was present during the period of significance, and possesses Historic integrity reflecting its character at that time; or
> 2. owing to its unique location or singular physical characteristics, represents an established feature of the neighborhood, community or city; or
> 3. retaining the building, structure, Landscaping, or Natural Feature, would contribute to the preservation and protection of an Historic place or area of Historic interest in the City.

Regarding effects on federal and locally significant properties, Los Angeles Municipal Code states the following (Section 91.106.4.5, Permits for Historical and Cultural Buildings):

> The department shall not issue a permit to demolish, alter or remove a building or structure of historical, archaeological or architectural consequence if such building or structure has been officially designated, or has been determined by state or federal action to be eligible for designation, on the National Register of Historic Places, or has been included on the City of Los Angeles list of historic cultural monuments, without the department having first determined whether the demolition, alteration or removal may result in the loss of or serious damage to a significant historical or cultural asset. If the department determines that such loss or damage may occur, the applicant shall file an application and pay all fees for the California Environmental Quality Act Initial Study and Check List, as specified in Section 19.05 of the Los Angeles Municipal Code. If the Initial Study and Check List identifies the historical or cultural asset as significant, the permit shall not be issued without the department first finding that specific economic, social or other considerations make infeasible the preservation of the building or structure.

County of Los Angeles

Historical, cultural, and paleontological resources are discussed in the County's Conservation and Natural Resources Element of the *Los Angeles County General Plan 2035,* which was adopted in October of 2015. The County recognizes that historical and cultural resources are an important part of the County's identity and contribute to the local economy. The goals and policies that apply to historical, cultural, and paleontological resources are as follows:

Policy C/NR 14.1:
Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.

Policy C/NR 14.2:
Support an inter-jurisdictional collaborative system that protects and enhances the County's historic, cultural, and paleontological resources.

Policy C/NR 14.3:
Support the preservation and rehabilitation of historic buildings.

Policy C/NR 14.4:
Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).

Policy C/NR 14.5:
Promote public awareness of the County's historic, cultural, and paleontological resources.

Policy C/NR 14.6:
Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

The Department of Regional Planning, working with the Historical Landmarks and Records Commission and the Regional Planning Commission, completed and adopted a comprehensive historic preservation ordinance for the unincorporated areas of Los Angeles County. The following text was taken from the Historic Preservation Ordinance for Los Angeles County, which was adopted by the Board of Supervisors in September, 2015:

22.52.3060 Criteria for Designation of Landmarks and Historic Districts.

A. Property which is more than 50 years of age may be designated as a landmark if it satisfies one or more of the following criteria:

   1. It is associated with events that have made a significant contribution to the broad patterns of the history of the nation, State, County, or community.
   2. It is associated with the lives of persons who are significant in the history of the nation, State, County, or community.
   3. It embodies the distinctive characteristics of a type, architectural style, period, or method of construction, or represents the work of an architect, designer, engineer, or builder whose work is of significance to the nation, State, County, or community; or possesses artistic values of significance to the nation, State, County, or community.
   4. It has yielded, or may be likely to yield, information important locally in prehistory or history.
   5. It is listed or has been formally determined eligible by the National Park Service for listing on the National Register of Historic Places, or is listed or has been determined eligible by the State Historical Resources Commission for listing on the California Register of Historical Resources.
   6. It is one of the largest or oldest trees of the species located in the County.
   7. It is a tree, plant, or other natural land feature having historical significance due to an association with a historic event, person, site, street, or structure, or because it is a defining or significant outstanding feature of a neighborhood.

B. Property less than 50 years of age may be designated as a landmark if it meets one or more of the criteria set forth in subsection (A) of this section, and exhibits exceptional importance.

C. The interior space of a property, or other space held open to the general public, including but not limited to a lobby, may itself be designated as a landmark or included in the landmark designation of a property if the space is more than 50 years of age and satisfies one

or more of the criteria set forth in subsection (A) of this section, or if the space is less than 50 years of age and satisfies the requirements of subsection (B) of this section.

D. Historic Districts. A geographic area or a noncontiguous grouping of thematically related properties may be designated as a historic district if greater than 50 percent of owners in the proposed district consent to the designation, and if the geographic area or noncontiguous grouping meets one or more of the criteria set forth in subsections (A)(1) through (A)(5) of this section and one or more of the following criteria:

1. It exhibits a concentration of historic, scenic or thematic sites, which contribute to each other and are unified aesthetically by plan, physical development or architectural quality; or
2. It exhibits significant geographical patterns, associated with different eras of settlement and growth, particular transportation modes, or distinctive examples of parks or community planning.

3.4.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to cultural resources are based on Appendix G of the CEQA Guidelines. Through the analysis in the Initial Study (see Appendix A), it was determined that the proposed project would not destroy a unique paleontological resource or site or a unique geologic feature (i.e., Threshold C) and that the proposed project would not result in potentially significant impacts related to human remains (i.e., Threshold D). As such, these issues are not further analyzed in the EIR. Based on the remaining thresholds, implementation of the proposed project would have a significant impact related to cultural resources if it would:

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

B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

3.4.4 Methodology

The project setting was developed by reviewing available information on cultural resources in the project vicinity. This review was supplemented with the pedestrian surveys conducted at the project site. The methods and results herein were derived from the Cultural Resources Assessment that is included in this EIR as Appendix E.

3.4.5 Impact Analysis

Threshold A: Would the project cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?

As previously discussed in Section 3.4.2, historical resources are districts, sites, buildings, structures, and objects that are listed, or eligible for listing in the NRHP, CRHR, a local register, or considered historically significant by the lead

agency. To determine whether the proposed project would cause substantial adverse change in the significance of historical resources, the following section identifies potential project impacts to the resources identified during the CHRIS records search and pedestrian survey.

Thirteen cultural resources were identified as part of the records search, including two eligible historic resources (P-19-002132/CA-LAN-002132H and P-19-002105) and one non-eligible resource (P-19-190022). A discussion of potential impacts to the two eligible historic resources is provided below.

P-19-002132/CA-LAN-002132H

The San Francisquito PP1 and PP2 Transmission Lines is an NRHP-eligible resource that would be impacted by the proposed project. Specifically, the proposed project would demolish the existing 115 kV line and construct an approximately 12-mile segment of 230 kV lines and associated transmission structures generally adjacent to the existing 115 kV line. The 115 kV line and most of its associated transmission towers would be removed from Haskell Canyon Switching Station in the north to its terminus at Olive Switching Station in the south.

Removal of Existing Equipment: As discussed above and in Section 6.1 of Appendix E, the project alignment between the Haskell Canyon and Sylmar switching stations lacks integrity of materials and workmanship from the period of significance and does not contribute to the larger resource's significance through its existing infrastructure. Site P-19-002132/CA-LAN-2132 has undergone several structural and upgrade overhauls since its initial construction. Damaged by earthquakes, floods, and general earth movement through wind and water erosion, numerous towers have been replaced, and the terminus of the lines has shifted several times. Additionally, in 1969 much of the PP1 and PP2 lines between Drinkwater Junction and Sylmar Junction, which includes the entirety of the current project alignment, were upgraded to the taller, multi-circuit Haynes Structures present today. Although site P-19-002132/CA-LAN-2132 was determined eligible for the NRHP, the maintenance, repair, and upgrade of the lines are essential to maintain the original and intended use. Given the resource type (a transmission line), it is not possible to maintain the original equipment over the course of a century, and most of the original transmission towers have already been replaced. Therefore, replacement of existing equipment with new equipment would not further impact the integrity of materials and workmanship, and would result in a **less than significant impact** to the resource.

Changes to the Alignment: The primary focus of the integrity analysis is the proposed changes to the historic transmission line alignment itself, which is the last intact physical features of the resource. The new transmission line would remain within the LADWP right-of-way corridor, with some minor deviations from the original transmission line route. The new alignment would deviate from the original alignment at the north end of the project area including the addition of poles 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8 and 2-1 between the Haskell Canyon Switching Station and existing pole 10A7. These new poles would run parallel to the historic alignment and would replace poles 9A6A, 9A7, 9A8, 10A1, 10A2, 10A4, 10A5, 10A6, and 10A7. Given that this is a small section of the overall line, it is running parallel to the original transmission line alignment, it is still within the historic LADWP right-of-way corridor, and it is continuing to originate from the Haskell Canyon Switching Station, these proposed changes would result in a **less than significant impact** to the resource, as it would still convey the important association of bringing power to the City.

P-19-002105

Sections of the buried Los Angeles Aqueduct intersect with numerous proposed construction areas: Structure Removal 16A4 and 17A1; New Pole 7-5 and 8-4; New Pole Work Area 7-5 and 8-4; Lay Down Area 8-4, and; Stringing Pad 8-4. Ground disturbing activities at these sites would include grading and excavation; however, the depths of construction would not impact the underground aqueduct. Additionally, LADWP or their designated construction contractor would be required to check for utility conflicts prior to any excavation in accordance with California Government Code Section 4216, ensuring that **no impacts** to the resource would occur.

Threshold B: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

Archaeological resources (as defined in Section 15064.5 of the CEQA Guidelines) were identified in the records search and pedestrian survey for the proposed project. A detailed description of each resource is provided in Section 5 of Appendix E. Twelve of the 13 previously recorded resources identified during the records search were relocated during the survey. Site P-19-100253 could not be relocated because it was collected during initial recordation. In addition, two newly identified archaeological sites and one new isolate were recorded. Of the archaeological resources recorded and/or updated during the field survey, seven sites can be avoided and would not be impacted by project construction activities, and one site was considered not eligible for the CRHR; therefore, planned construction activities would have no impact on these resources. Thus, the following resources are not discussed further in this section as no impacts would occur: LADWP-002, P-19-002150, P-19-004721, P-19-186861, P-19-186912, P-19-188007, P-19-188492, and P-19-002145.

Five archaeological sites would be potentially impacted by project construction activities (LADWP-001, LADWP-ISO-001, P-19-003131, P-19-004720, and P-19-100253). A discussion of potential impacts to these archaeological resources is provided below.

LADWP-001

Planned impacts to this site include New Pole Work Area 4-2, New Pole 4-2, and Structure Removal 12A7. The density of material at this location suggests that the planned construction activities have the potential to uncover additional cultural material and cause a potentially significant impact. As such, additional presence/absence testing is required at this location once the final construction plans are developed (MM-CUL-1). In the event that presence/absence testing reveals the presence of cultural material, the materials would be treated in accordance with MM-CUL-1. Additionally, because it is possible that intact archaeological deposits are present at subsurface levels and could be uncovered during ground-disturbing activities, construction monitoring (MM-CUL-2) would be required during ground disturbing activities. In the event of unanticipated discoveries of archaeological resources or human remains, MM-CUL-3 and MM-CUL-4 would also be required. With implementation of mitigation measures MM-CUL-1, MM-CUL-2, MM-CUL-3, and MM-CUL-4, impacts related to archaeological resources at this site would be **less than significant with mitigation incorporated**.

LADWP-ISO-001

This isolate is likely associated with a nearby archaeological site that consists of a well and standing structure. While there is a no impact determination for the isolate, the presence of this artifact and nearby historic-age site suggests that this area is archaeologically sensitive and could result in unanticipated discoveries. Structure Removal 19A4 is planned within the vicinity of LADWP-ISO-001. Because it is possible that intact archaeological deposits are present at subsurface levels and could be uncovered during ground-disturbing activities, construction monitoring (MM-CUL-2) would be required at this location. In the event of unanticipated discoveries of archaeological resources or human remains, MM-CUL-3 and MM-CUL-4 would also be required. With implementation of these mitigation measures, impacts related to archaeological resources at this site would be **less than significant with mitigation incorporated**.

P-19-003131

Previous site recordations of this site have suggested that it may be eligible under CRHR Criterion 4 for significant data potential; therefore, there are cultural resource considerations for this resource.

Structure Removals 10A1, 10A2, and 10A3 are located in previously impacted portions of the site; therefore, no impacts to cultural material is expected at these locations. However, New Pole Work Area 1-6 and 1-7, Lay Down Area 1-4, and Stringing Pad 1-6 have the potential to impact above-ground Features A, B, C, D, and H within this site. Further, prior recordations of the site note the presence of a buried historic deposit in the northeastern portion of the site, directly north of existing Pole 10A2, that is likely to contain subsurface data potential. As such, MM-CUL-1 is provided to address potential impacts to this resource through presence/absence testing during the final design phase of the project. In the event that this testing reveals the presence of cultural material, avoidance and minimization measures are provided in MM-CUL-1. Because it is possible that intact archaeological deposits are present at subsurface levels and could be uncovered during ground-disturbing activities, construction monitoring (MM-CUL-2) would be required during ground disturbing activities. In the event of unanticipated discoveries of archaeological resources or human remains, MM-CUL-3 and MM-CUL-4 would also be required. With implementation of mitigation measures MM-CUL-1, MM-CUL-2, MM-CUL-3, and MM-CUL-4, impacts related to archaeological resources at this site would be **less than significant with mitigation incorporated**.

P-19-004720

This site represents the physical vestiges of the Agajanian Hog Farm. Structure Removals 12A1 and 12A2 are located in previously impacted portions of this site; therefore, no impacts to cultural material is expected from construction activities at these two locations. However, some planned construction activities would impact portions of the Agajanian Hog Farm. Lay Down Area 3-2 is planned within Locus 2 of this site and Stringing Pad 3-3, New Pole 3-3, New Pole Work Area 3-3, and Structure Removal 12A1 and 12A2 are planned within Locus 1 of this site. Accordingly, MM-CUL-1 is provided to address potential impacts to this resource through presence/absence testing during the final design phase of the project. In the event that this testing reveals the presence of cultural material, avoidance and minimization measures are provided in MM-CUL-1. Because it is possible that intact archaeological deposits are present at subsurface levels and could be uncovered during ground-disturbing activities, construction

monitoring (MM-CUL-2) would be required during ground disturbing activities. In the event of unanticipated discoveries of archaeological resources or human remains, MM-CUL-3 and MM-CUL-4 would also be required. With implementation of mitigation measures MM-CUL-1, MM-CUL-2, MM-CUL-3, and MM-CUL-4, impacts related to archaeological resources at this site would be **less than significant with mitigation incorporated**.

P-19-100253

Construction activities associated with Structure Removal 16A7, New Pole Work Area 8-3, and New Pole 8-3 have the potential to impact archaeological resources at this site. This site consisted of Native American artifacts that were collected. Due to the presence of artifacts associated with Native American use of this portion of the landscape, this area is considered sensitive for cultural material. No prehistoric archaeological resources were identified as a result of the Native American coordination and the one prehistoric resource identified during the records search could not be relocated during pedestrian survey. Vegetation was dense during surveys of this area; however, it is always possible that intact archaeological deposits are present at subsurface levels. Because it is possible that intact archaeological deposits are present at subsurface levels and could be uncovered during ground-disturbing activities, construction monitoring (MM-CUL-2) would be required during ground disturbing activities for Structure Removal 16A7, New Pole Work Area 8-3, and New Pole 8-3. In the event of unanticipated discoveries of archaeological resources or human remains, MM-CUL-3 and MM-CUL-4 would also be required. Additionally, Native American monitoring during initial construction ground disturbance would be required in accordance with MM-TCR-1. With implementation of mitigation measures MM-CUL-2, MM-CUL-3, and MM-CUL-4, impacts related to archaeological resources at this site would be **less than significant with mitigation incorporated**.

3.4.6 Mitigation Measure(s)

MM-CUL-1

Avoidance and Minimization. Presence/absence testing shall be conducted within planned work areas that overlap with sensitive archaeological sites as delineated in Confidential Appendix D of the Cultural Resources Assessment. Prior to construction, a qualified archaeologist (meeting the Secretary of the Interior's Professional Qualification Standards) in coordination with the Los Angeles Department of Water and Power (LADWP) or its construction contractor shall review the final construction plans to determine which work areas require presence/absence testing. Based on conceptual project design, presence/absence testing shall be conducted within the areas of planned construction near archaeological sites P-19-003131, P-19-004720, and LADWP-001. The planned areas of construction that are located within or near each of these sites are listed below.

- P-19-003131: Lay Down Area 1-4, Stringing Pad 1-6, Structure Removals 10A1, 10A2, and 10A3, and New Pole Work Areas 1-4, 1-5, 1-6, 1-7, and 1-8
- P-19-004720: Lay Down Area 3-2, Stringing Pad 3-3, New Pole Work Area 3-3, and Structure Removals 12A1 and 12A2
- LADWP-001: New Pole Work Area 4-2 and Structure Removal 12A7

In the event that presence/absence testing reveals the presence of cultural material within planned work areas, a qualified archaeologist shall determine the significance of the find and determine whether or not additional study is warranted. If the find is determined to be significant, the qualified archaeologist shall coordinate with LADWP or its construction contractor to reduce and/or avoid effects to such materials. Impacts could be reduced or avoided through one or more of the following means: redesigning the planned construction work area to avoid the resource, establishing construction exclusion fencing around the archaeologically sensitive area to ensure that construction equipment and workers do not inadvertently enter the sensitive area, preparing an archeological treatment plan for the resource, and/or data recovery.

MM-CUL-2

Construction Monitoring. Construction monitoring shall be conducted at locations where planned construction work areas overlap or are situated adjacent to a sensitive archaeological site, as delineated in Confidential Appendix D of the Cultural Resources Assessment. Prior to construction, a qualified archaeologist, in coordination with LADWP or its construction contractor, shall review the final construction plans to determine which work areas require archaeological monitoring. The archaeological monitoring shall be conducted during all ground disturbance at the identified locations. Based on conceptual project design, the work area locations where construction monitoring is expected to be warranted are listed below.

- New Pole Work Areas 1-4, 1-5, 1-6, 1-7, 1-8, 3-3, 4-2, and 8-3; Structure Removals 10A1, 10A2, 10A3, 12A1, 12A2, 12A7, 16A7, and 19A4; Lay Down Areas 1-4 and 3-2; and, Stringing Pads 1-6 and 3-3

In the event that cultural materials are found during construction monitoring, the monitor shall adhere to the protocol for unanticipated discoveries set forth in MM-CUL-3. In the event that the find could consist of or include human remains, the archaeological monitor and construction personnel shall follow the protocol for unanticipated finds of human remains set forth in MM-CUL-4.

MM-CUL-3

Unanticipated Discoveries. If archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); California Public Resources Code, Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan and data recovery, may be warranted.

MM-CUL-4

Human Remains. In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County coroner shall be immediately notified of the discovery. No further excavation or disturbance of the

site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete their inspection within 48 hours of being granted access to the site. The most likely descendant would then determine, in consultation with the property owner, the disposition of the human remains.

3.4.7 Level of Significance After Mitigation

Construction activities associated with the proposed project could impact cultural material at LADWP-001, LADWP-ISO-001, 19-003131, P-19-004720, and, P-19-100253. With implementation of MM-CUL-1 through MM-CUL-4, impacts to cultural resources would be less than significant.

3.4.8 References Cited

Dice, M. 2014a. Archaeological Site Record for P-19-002132/CA-LAN-2132H. On file at the South Coastal Information Center.

NPS (National Park Service). 1990. *How to Apply the National Register Criterion for Evaluation*. Bulletin 15. Accessed July 16, 2018. https://www.nps.gov/nr/publications/bulletins/nrb15/.

3.5 Geology and Soils

This section describes the existing geologic and soils resources present in the project area; discusses applicable federal, state, and regional regulations pertaining to geology and soils; and evaluates the potential effects on geology and soils associated with development of the proposed project. More specifically, this section addresses seismic conditions, soil erosion, stability of the underlying geologic units, and soil conditions.

No comments were received in response to the Notice of Preparation (see Appendix A) with respect to geology and soils. Information contained in this section is based on published geologic/seismic reports and maps published by the California Geological Survey, U.S. Geological Survey, and U.S. Department of Agriculture Soil Conservation Service, as listed in Section 3.5.8.

3.5.1 Existing Conditions

This section describes the existing conditions in the project area and also identifies the resources that could be affected by the proposed project.

Regional Geology

The project alignment is located in the Transverse Range Geomorphic Province of California, which is characterized by east-west trending mountains and faults. Sedimentary basins within the Transverse Range include the Ventura Basin, Soledad Basin, Ridge Basin, and the San Fernando Valley. The Ventura, Soledad, and Ridge sedimentary basins are the result of the interplay of the San Andreas Fault and the Transverse Range fault system. Seismic activity along the San Andreas Fault is in response to differential movement between the Pacific geologic plate (west of the fault) and the North American geologic plate (east of the fault). The northern portion of the project alignment (structures 1-1 through 6-2) overlies the eastern Ventura Basin and western Soledad Basins, which are separated by the San Gabriel Fault Zone (see Figure 3.5-1, Figure 3.5-2a, and Figure 3.5-2b) in the vicinity of the City of Santa Clarita. The southern portion of the project alignment (structures 6-3 to 12-5) traverses the western San Gabriel Mountains, extending to the northern perimeter of the San Fernando Valley.

Local Geology

The topography along the alignment is predominantly hilly to mountainous, with localized flat-lying alluvial valleys/canyons in the upper Santa Clara River Valley area and the northern San Fernando Valley. The hills and mountainous areas include locally moderate to steep slopes. With the exception of the southern portion of the alignment that traverses the western San Gabriel Mountains, much of the alignment is underlain by Plio-Pleistocene and Pliocene, loosely consolidated, nonmarine sediments, including terrace deposits. Exceptions include flat-lying alluvial valleys and canyons, which are underlain by Holocene alluvium (e.g., structures 1-5 to 1-7; structures 3-5 to 4-1; structures 5-3 to 6-2; and structure 12-7 to Sylmar Switching Station) and the northern section (i.e., approximately from structures 1-1 to 1-5), which is underlain by Miocene marine and nonmarine bedrock. The southern portion of the alignment traversing the western San Gabriel Mountains (i.e., approximately from structures 9-4 to 12-3) is

underlain by Pliocene marine bedrock. The northern San Fernando Valley portions are underlain by Pleistocene nonmarine terrace sediments and Holocene alluvium (USGS 2018a; CDMG 1969).

Seismicity and Faulting

As is the case for all of southern California, the project is located in a seismically active area. The California Geological Survey (CGS 2018a) classifies faults as:

- Holocene-active faults, which are faults that have moved during the past approximate 11,700 years. These faults are capable of surface rupture.
- Pre-Holocene faults, which are faults that have not moved in the past 11,700 years. This class of fault may be capable of surface rupture but is not regulated under the Alquist-Priolo Earthquake Fault Zoning Act of 1972, which regulates construction of buildings to be used for human occupancy.
- Age-undetermined faults, which are faults where the recency of fault movement has not been determined.

Holocene-active faults have been responsible for large historical earthquakes in southern California, including the 1971 San Fernando earthquake (moment magnitude [Mw] 6.6), the 1992 Landers earthquake (Mw 7.3), the 1952 Kern County earthquake (Mw 7.5), and the 1933 Long Beach earthquake (Mw 6.4). The southern California region also includes blind thrust faults, which are faults that do not rupture all the way up to the surface but are capable of substantial earthquakes. Examples include the 1987 Whittier Narrows earthquake (Mw 5.9) and the 1994 Northridge earthquake (Mw 6.7). Both of these earthquakes occurred on previously unidentified thrust faults (USGS 1971, 1988, 1994; SCEDC 2013). Prominent Holocene-active and pre-Holocene faults in the project region are listed in Table 3.5-1.

Table 3.5-1. List of Earthquake Faults

Fault Name	Closest Distance from Project (in miles)	Direction from Project
San Gabriel	Crosses Alignment	Crosses Alignment
San Fernando	Crosses Alignment	Crosses Alignment
San Andreas	14	Northeast
San Cayetano	14	West
Verdugo	12	Southeast
Sierra Madre	20	Southeast
Malibu Coast	23	Southwest
Santa Monica	16	South
Raymond	23	Southeast
Newport-Inglewood	20	South
Whittier	42	Southeast
Elsinore	60	Southeast

Source: CGS 2010

Based on the Alquist-Priolo Earthquake Fault Zoning Act, only those faults that have direct evidence of movement within the last 11,000 years are required to be zoned. The California Geological Survey considers fault movement within this period a characteristic of faults that have a relatively high potential for ground rupture in the present or future. As discussed in Section 3.5.2 below, the Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to establish earthquake fault zones around the surface traces of active faults and to issue appropriate maps to assist cities and counties in planning, zoning, and building regulation functions. These zones, which generally extend 200 feet to 500 feet on each side of a known active fault based on location, precision, complexity, or regional significance of the fault, identify areas where potential surface fault rupture along an active fault could prove hazardous and identify where special studies are required to characterize hazards to habitable structures. If a site intended for human occupancy lies within an earthquake fault zone on an official California Geological Survey map, a geologic fault rupture investigation must be performed before issuance of permits to demonstrate that the proposed development is not threatened by surface displacement from the fault.

The project alignment is underlain by two Holocene-active faults, including the San Gabriel and San Fernando faults. The San Fernando Fault in the vicinity of the project alignment has been included within an Earthquake Fault Zone, in the vicinity of proposed structures 12-1 to 12-4 (CGS 1999a) (see Figures 3.5-2a and 3.5-2b). The San Fernando Fault, which was responsible for the 1971 Mw 6.6 San Fernando Earthquake, is a thrust fault with maximum probable magnitudes of Mw 6.0 to 6.8 and a recurrence interval of approximately 200 years (SCEDC 2013). However, the portion of the San Gabriel Fault Zone that traverses the project alignment is not included in an Earthquake Fault Zone. The closest Earthquake Fault Zone along this fault is located approximately 2,500 feet west of the alignment (CGS 1998) (see Figures 3.5-2a and 3.5-2b). Based on the southeast projection of the fault at this location, the San Gabriel Fault Zone traverses the project alignment in the vicinity of structure 7-1. The slip rate and recurrence interval along this primarily right-lateral, strike-slip fault probably vary significantly along the length of this fault zone. The western half, in proximity to the project alignment, is probably much more active that the eastern portion (SCEDC 2013).

Ground Shaking

Seismically induced ground shaking is the primary cause of damage during earthquakes. Based on the proximity of the Northridge and San Fernando earthquakes, in combination with information shown on an earthquake shaking potential map created by the California Geological Survey (2016), the project alignment is in an area of high seismic shaking potential. The project area will, on average, experience stronger earthquake shaking more frequently. This intense shaking can damage even strong, modern buildings (CGS 2016).

The primary tool that seismologists use to evaluate ground-shaking hazard and characterize statewide earthquake risks is a probabilistic seismic hazard assessment (PSHA), which considers the range of possible earthquake sources and estimates characteristic magnitudes to generate a probability map for ground shaking. A commonly used PSHA metric consists of the peak ground acceleration (PGA), which is expressed as the percentage of the acceleration of gravity (g), which has a 10% probability of being exceeded in 50 years (i.e., a 1 in 475 chance). Use of this probability level allows engineers to design structures to withstand ground motions that have a 90% chance of not occurring in the next 50 years. This methodology requires seismic design of structures to be more conservative than if those structures were

designed solely for the most probable seismic events. The PGA for the project area with a 10% chance of being exceeded in a 50-year period ranges from 0.61g to 0.63g (CGS 2018b). For perspective, with respect to mortgage loans, the U.S. Geological Survey considers regions to have a high seismic risk if there is a 10% or greater probability of the maximum PGA being equal to or greater than 0.15g, at any point in a 50-year period (Fannie Mae 2017).

Liquefaction/Lateral Spreading

Liquefaction occurs when partially saturated soil enters a liquid state, resulting in the soil's inability to support overlying structures. Liquefaction typically occurs in areas with saturated sandy soils where the groundwater is less than 30 feet from the surface and where the soils are composed of poorly consolidated fine to medium sand. Lateral spreading consists of lateral movement of gently to steeply sloping saturated soil deposits that is caused by earthquake-induced liquefaction. The Seismic Hazards Mapping Act of 1990 directs the California Department of Conservation, Division of Mines and Geology (now the California Geological Survey), to identify and mitigate seismic hazards. Based on the Seismic Hazards Zone Maps for the San Fernando, Mint Canyon, and Newhall quadrangles, the project alignment traverses several areas of potential liquefaction, including those listed in Table 3.5-2 and illustrated on Figures 3.5-2a and 3.5-2b.

Table 3.5-2. Geologic Hazards

Approximate Proposed Structure Locations and Switching Stations	Liquefaction Potential	Seismically Induced Landslide Potential
Structures 1-3 to 1-7 and 2-3 to 2-5, as the alignment follows Haskell Canyon	X	
Structures 3-5 to 4-1, as the alignment crosses Bouquet Canyon	X	
Structures 5-3 to 5-5 and 6-1 to 6-4, as the alignment crosses the Soledad Canyon (upper Santa Clara River) area	X	
Structure 8-4, as the alignment crosses Placerville Canyon	X	
From structure 13-1 to 13-3; structure 249-2B1; and the Sylmar Switching Station, in the northern San Fernando Valley	X	
Structures 1-2, 2-2, 3-1, 3-2, 3-3, 4-6, 6-5, 7-1, 7-2, 10-2, 11-1, 11-4, 11-5, and 12-1		X
Structure 10-1		Structure 10-1 is not mapped in a seismically induced landslide zone but is located within the limits of an existing landslide.

Source: CGS 1998, 1999a, 1999b

Landslides

Slope failures include many phenomena that involve the downslope displacement and movement of material, triggered either by gravity or seismic forces. Exposed bedrock slopes may experience rockfalls, rockslides, rock avalanches, and deep-seated rotational slides, and soil slopes may experience soil slumps and rapid debris flows. Slope stability can depend on a number of complex variables, including the geology, structure, and amount of groundwater,

as well as external processes such as climate, topography, slope geometry, and human activity. The factors that contribute to slope movements include those that decrease the resistance in the slope materials and those that increase the stresses on the slope. Slope failure can occur on slopes of 15% or less, but the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation, and transverse ridges. Based on the Seismic Hazards Zone Maps for the San Fernando, Mint Canyon, and Newhall quadrangles, the project alignment traverses several areas of potential earthquake induced landslide zones, including those listed in Table 3.5-2 and illustrated on Figures 3.5-2a and 3.5-2b.

Subsidence

Land subsidence is the downward settlement of a large area of land, which can potentially result in surface infrastructure damage. Historical subsidence in California has resulted from several processes, including oil and gas production, groundwater withdrawal, hydrocompaction, and peat oxidation. Subsidence associated with water or gas withdrawal occurs when compressible subsurface deposits are depressurized as a result of removing water or gas and can no longer support the weight of the overlying material. In the case of groundwater withdrawal, subsidence occurs primarily when groundwater withdrawal from confined aquifers results in the depressurization and dewatering of compressible clay layers. Subsidence generally occurs slowly, and can continue for a period of several years after pumping has terminated, as water continues to migrate from compressible clay layers. A portion of the project alignment in the Placerita Canyon/Newhall area traverses the Placerita and Newhall oil fields (California DOGGR 1998, 2018a). However, as shown on U.S. Geological Survey maps, the project area is not located in an area where ground subsidence has been identified (USGS 2018b).

Expansive Soil

Expansive soils tend to swell with seasonal increases in soil moisture in the winter months and shrink as soils become drier in the summer months. Repeated shrinking and swelling of the soil can lead to stress and damage of structures, foundations, fill slopes, and other associated facilities. Expansive soils owe their characteristics to the presence of swelling clay minerals. Sandy alluvial areas along the project alignment would likely not be subject to soil expansion; however, surficial soils overlying bedrock areas may contain clay deposits subject to soil expansion.

3.5.2 Relevant Plans, Policies, and Ordinances

State

Alquist-Priolo Earthquake Fault Zoning Act

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to regulate types of development near active faults to mitigate the hazard of surface rupture. Under this act, the State Geologist is required to delineate earthquake fault zones/Alquist-Priolo Fault Zones along known active faults in California. The act also requires that geologic studies be conducted to locate and assess any active fault traces in and around known active fault areas prior to development of buildings for human occupancy. Local cities and counties must regulate certain development projects within the Alquist-Priolo Fault Zones, generally by issuing building permits only after geologic investigations have demonstrated

that development sites are not threatened by future surface displacement. A buffer prohibiting the construction of structures for human occupancy may be established. Typically, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed by the California legislature in 1990, addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, strong ground shaking, or other earthquake and geologic hazards. The act indicates "it is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety." To date, the California Geological Survey has only created liquefaction hazard maps for U.S. Geological Survey quadrangle maps in the San Francisco Bay area and greater Los Angeles area, including the project area.

California Building Code

The state regulations protecting structures from geo-seismic hazards are contained in the California Building Code (CBC; 24 CCR, Part 2), which is updated on a triennial basis. These regulations apply to public and private buildings in the state. Until January 1, 2008, the CBC was based on the then-current Uniform Building Code and contained additions, amendments, and repeals specific to building conditions and structural requirements of the State of California. The 2016 CBC, effective January 1, 2017, is based on the current (2015) International Building Code and enhances the sections dealing with existing structures. Seismic-resistant construction design is required to meet more stringent technical standards than those set by previous versions of the CBC, which were based on the now-outdated Uniform Building Code.

Chapters 16 and 16A of the 2016 CBC include structural design requirements governing seismically resistant construction, including (but not limited to) factors and coefficients used to establish seismic site class and seismic occupancy categories for the soil/rock at the building location and the proposed building design. Chapters 18 and 18A include (but are not limited to) the requirements for foundation and soil investigations (Sections 1803 and 1803A); excavation, grading, and fill (Sections 1804 and 1804A); damp-proofing and water-proofing (Sections 1805 and 1805A); allowable load-bearing values of soils (Sections 1806 and 1806A); the design of foundation walls, retaining walls, embedded posts and poles (Sections 1807 and 1807A), and foundations (Sections 1808 and 1808A); and design of shallow foundations (Sections 1809 and 1809A) and deep foundations (Sections 1810 and 1810A). Chapter 33 of the 2016 CBC includes (but is not limited to) requirements for safeguards at work sites to ensure stable excavations and cut or fill slopes (Section 3304).

As indicated previously, the CBC is updated and revised every 3 years. The 2019 version of the CBC will be effective January 1, 2020. It is anticipated that individual phases of the proposed project would use the most current CBC at the time of building permit issuance.

Local

Because LADWP has jurisdiction over the siting, geotechnical design, and construction of the project, the project is not subject to local regulations pertaining to geology and soils.

3.5.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to geology and soils are based in Appendix G of the CEQA Guidelines. Through the analysis in the Initial Study (see Appendix A), it was determined that the proposed project would not result in substantial soil erosion or the loss of topsoil (i.e., Threshold B) and would not cause impacts related to soils incapable of supporting alternative wastewater disposal systems (i.e., Threshold E). As such, these issues are not further analyzed in the EIR. Based on the remaining thresholds, implementation of the proposed project would have a significant impact related to geology and soils if it would:

A. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

   i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.

   ii. Strong seismic ground shaking.

   iii. Seismic-related ground failure, including liquefaction.

   iv. Landslides.

C. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

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.

3.5.4 Methodology

Information regarding the existing geologic conditions and seismically induced hazards is based on published maps and reports completed by the California Geological Survey and U.S. Geological Survey. These reports and maps identify areas of faulting, seismic hazards, slope instability, and other geological considerations for the proposed project. The following analysis considers whether the proposed project, which is described in Chapter 2 of this EIR, would directly or indirectly cause or exacerbate geologic/soils hazards.

Construction-related impacts are considered for the project as a whole. Operational-related impacts of the proposed project are considered in the context of seismic and/or other geological hazards to structures, employees, and visitors. Adherence to design and construction standards, as required by state regulations, would ensure maximum practicable protection of proposed structures. The potential increased geologic hazards resulting from completion of the proposed

project were evaluated with consideration of the safety standards in the CBC. Compliance with the CBC would minimize structural safety hazards to the extent feasible.

3.5.5 Impact Analysis

Threshold A: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- ***i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)***
- ***ii. Strong seismic ground shaking?***
- ***iii. Seismic-related ground failure, including liquefaction?***
- ***iv. Landslides?***

Earthquake Faults

Several major active earthquake fault zones and smaller earthquake faults are located within the general region of the proposed alignment. The San Gabriel Fault Zone traverses the project alignment in the Santa Clarita Valley, in the vicinity of proposed structure 7-1. However, this portion of the fault zone has not been zoned as an Alquist-Priolo Earthquake Fault Zone. At the southern end of the alignment, the transmission line corridor crosses the San Fernando Fault Zone, in the vicinity of structures 12-1 to 12-4 (CGS 1999a) (Figures 3.5-2a and 3.5-2b). Portions of the San Fernando Fault, including the portion that is traversed by the alignment, are contained in an Alquist-Priolo Earthquake Fault Zone. Portions of the San Fernando Fault Zone ruptured in February 9, 1971, during the Mw 6.6 San Fernando Earthquake. As such, portions of the immediate project area are susceptible to impacts related to surface rupture. However, because the project does not include structures for human occupancy, construction requirements of the Alquist-Priolo Earthquake Fault Zoning Act would not apply to the project. In addition, project construction and operation would not increase or exacerbate the potential for fault rupture to occur and therefore would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving surface rupture along the San Fernando or San Gabriel fault zones. As such, impacts would be **less than significant**.

Seismic Ground Shaking

As previously discussed in Section 3.5.1, the project alignment is located in an area of high seismic shaking potential. The project area will, on average, experience stronger earthquake shaking more frequently. This intense shaking can damage even strong, modern buildings. The calculated PGA for the project area with a 10% chance of being exceeded in a 50-year period (i.e., 1 in 475 chance) ranges from 0.61g to 0.63g (percent of gravity). LADWP would be required to comply with provisions of the CBC, with respect to seismic engineering. In addition, the project would be designed and constructed in accordance with appropriate American Society for Civil Engineers and American Concrete Institute standards.

Certain soil characteristics, especially loose and/or saturated soils, can create conditions where transmission equipment is susceptible to earthquake damage if the methods of installation do not properly account for such conditions. Monopole structures would require one foundation ranging from approximately 4 feet to 10 feet in diameter and 15 feet to 50 feet in depth. Lattice structures would require four concrete foundations, each of which would be approximately 4 feet in diameter and 40 feet in depth. In locations with extremely sandy soils, the soil may be stabilized using water or a gelling agent prior to excavating the holes, and steel casings may be used for the excavation. In locations with high groundwater levels, dewatering may be required to ensure a dry construction area during foundation drilling. Following excavation of the foundation holes, each footing would be constructed by placing formwork, reinforcing steel, and a bolt ring or stub into the foundation hole (bolt rings are used for monopole structures and stubs are used for lattice towers). The bolt ring or stub would subsequently be positioned and encased in concrete. For upgrades at the Sylmar Switching Station, new electrical equipment would be supported by reinforced concrete foundations. (These foundations may either be shallow spread foundations or deep pile foundations, depending on the soil parameters.) Structure foundations and the methods of structure installation, including any necessary soil treatments, would minimize the potential for structural instability during ground shaking.

Although the proposed project could be subject to severe seismic shaking, it would not increase or exacerbate the potential for earthquakes to occur and therefore would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismically induced ground shaking. The proposed transmission towers, monopoles, and switching station tie-ins and upgrades would be constructed in accordance with applicable industry standards. In the event that an earthquake produces strong ground motions in the project area, LADWP would send crews to inspect the towers, monopoles, lines, and switching station equipment and would repair any damage detected in accordance with existing practice and procedures. Therefore, impacts would be **less than significant**.

Seismic Related Ground Failure, Including Liquefaction

As discussed in Section 3.5.1, soils along the project alignment that are sandy and underlain by shallow groundwater could be susceptible to liquefaction. Areas of the project alignment that may be subject to liquefaction are listed in Table 3.5-2 and illustrated on Figures 3.5-2a and 3.5-2b. Hazards associated with soil liquefaction and seismic-related ground failure include temporary loss of soil bearing capacity, lateral spreading, differential compaction, and slope instability. However, as described above, in locations with extremely sandy soils, the soil may be stabilized using water or a gelling agent prior to excavating the holes, and steel casings may be used for the excavation. In locations with high groundwater levels, dewatering may be required to ensure a dry construction area during foundation drilling. In addition, in compliance with CBC, LADWP would perform any necessary design studies and develop design criteria and measures to address any geologic hazards associated with liquefaction and seismic-related ground failure. Although portions of the project alignment could be subject to liquefaction, the project would not increase or exacerbate the potential for liquefaction to occur and therefore would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismically-related ground failure, including liquefaction. Impacts would be **less than significant**.

Landslides

As discussed in Section 3.5.1, numerous portions of the project alignment are susceptible to seismically induced landslides, including those listed in Table 3.5-2 and illustrated on Figures 3.5-2a and 3.5-2b. Additionally, structure 10-1 would be located within the limits of an existing landslide. Project-induced effects of landslide potential are limited to actions that increase the extent, likelihood, or severity of landslide hazards for the public or off-site properties.

Project construction would include construction of new access routes, improvements or repairs to existing roads, and grading of laydown areas and stringing pads. Grading and excavation would be required to establish construction work areas, to allow for access to the work areas, to install proposed structures, and to remove existing structures.

Excavations completed in areas of moderate to steep slopes could cause slope instability, including but not limited to those areas indicated in Table 3.5-2, resulting in soil sloughing, shallow slumping, and/or deep-seated landslides. Seismically induced ground shaking could exacerbate the potential for slope instability on proposed cut slopes. Similarly, construction of fill slopes during grading operations could result in slope instability. Project grading would potentially increase or exacerbate the potential for landslides to occur and therefore would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. As such, impacts related to landslide hazards would be potentially significant. However, such impacts can be reduced or avoided through proper geotechnical design of cut and fill slopes, by positioning grading areas away from unstable slopes, and/or by implementing measures to prevent slope failure, such as buttress slopes. A mitigation measure (MM-GEO-1) is provided in this section to ensure that grading is designed to reduce landslide risk, to ensure that grading areas are positioned away from unstable slopes to the extent feasible, and to ensure that measures are incorporated into grading plans to prevent slope failure. Upon implementation of MM-GEO-1, potential landslide impacts would be **less than significant with mitigation incorporated**.

Threshold C: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

As described above for Threshold A(iii), the project would not increase the potential for liquefaction and lateral spreading to occur. Therefore, potential impacts associated with liquefaction/lateral spreading would be **less than significant.**

With respect to subsidence, a portion of the project alignment in the Placerita Canyon/Newhall area traverses the Placerita and Newhall oil fields. However, the project area is not located in an area of documented ground subsidence, as a result of oil extraction, groundwater pumping, or peat loss. Oil field reservoir repressurization requirements, in accordance with California Public Resources Code, Division 3, Chapter 1, Article 5.5, Subsidence (California DOGGR 2018b), prevent regional subsidence associated with oil and gas extraction. And given the trends in water conservation, controlled groundwater pumping, and an associated rise in groundwater levels, the hazard for regional ground subsidence from groundwater lowering in the project area is very low. Therefore, potential impacts associated with subsidence would be **less than significant.**

With respect to collapsible soils, in portions of the project alignment that traverse loose sandy canyon and valley bottoms, construction may occur in collapsible soils. As described above for seismic shaking, in locations with extremely sandy soils, the soil may be stabilized using water or a gelling agent prior to excavating, and steel casings may be used for the excavation. In locations with high groundwater levels, dewatering may be required to ensure a dry construction area during foundation drilling. Following excavation of the foundation holes, each structure footing would be constructed by placing formwork, reinforcing steel, and a bolt ring or stub into the foundation hole (bolt rings are used for monopole structures and stubs are used for lattice towers). The bolt ring or stub would subsequently be positioned and encased in concrete. For upgrades at the Sylmar Switching Station, new electrical equipment would be supported by reinforced concrete foundations. (These foundations may either be shallow spread foundations or deep pile foundations, depending on the soil parameters.) Structure foundations and the methods of structure installation, including any necessary soil treatments, would minimize the potential for structural instability. In addition, the proposed project would be constructed in compliance with CBC requirements, including requirements for foundation and soil investigations (Sections 1803 and 1803A); allowable load-bearing values of soils (Sections 1806 and 1806A); the design of embedded posts and poles (Sections 1807 and 1807A), and foundations (Sections 1808 and 1808A); and design of deep foundations (Sections 1810 and 1810A), which are designed to assure safe construction and includes monopole/tower foundation requirements appropriate to site conditions. Therefore, potential impacts associated with collapsible soils would be **less than significant**.

As described above for Threshold A(iv), project grading would potentially increase or exacerbate the potential for landslides to occur and therefore would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. As such, impacts related to landslide hazards would be potentially significant. However, as explained in Threshold A(iv), implementation of MM-GEO-1 would reduce potential effects related to landslides. Impacts would therefore be **less than significant with mitigation incorporated**.

Threshold D: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Expansive soils are clay-rich soils that shrink when dry and swell when wet. This change in volume can exert substantial pressure on foundations, resulting in structural distress and/or damage. Sandy alluvial areas along the project alignment would likely not be subject to soil expansion; however, surficial soils overlying bedrock areas may contain clay deposits subject to soil expansion. Monopole structures would require one foundation ranging from approximately 4 feet to 10 feet in diameter and 15 feet to 50 feet in depth. Lattice structures would require four concrete foundations, each of which would be approximately 4 feet in diameter and 40 feet in depth. New electrical equipment at the switching stations would be supported by reinforced concrete foundations that would either be shallow spread foundations or deep pile foundations, depending on the soil parameters. Penetration of clay-rich surficial soils by proposed deep foundations would minimize the potential for adverse effects associated with expansive soils. Such soils are typically more problematic for underground linear appurtenances or flat, rigid foundations where greater surface areas are in contact with the soil. All foundation construction would be completed in accordance with CBC building requirements, including requirements for foundation and soil investigations (Sections 1803 and 1803A); allowable load-bearing values of soils (Sections 1806 and 1806A); the design of embedded

posts and poles (Sections 1807 and 1807A), and foundations (Sections 1808 and 1808A); and design of deep foundations (Sections 1810 and 1810A). In addition, project construction would not increase or exacerbate the potential for expansive soils to create substantial direct or indirect risks to life or property. As such, impacts would be **less than significant**.

3.5.6 Mitigation Measure(s)

MM-GEO-1

Slope Stability Analysis. Prior to final design and construction, the Los Angeles Department of Water and Power shall complete a geotechnical investigation along the project alignment, including an analysis of potential slope instability associated with cut-and-fill grading. The analysis shall be completed by a California Certified Engineering Geologist and licensed Geotechnical Engineer. In the event that the analysis indicates that potential slope instability could occur as a result of grading, remedial measures (e.g., buttress slopes) shall be included in the grading plans in order to prevent slope failure. All cut and fill slopes shall be designed and constructed in accordance with California Building Code (Sections 1804 and 1804A) specifications.

3.5.7 Level of Significance After Mitigation

Implementation of MM-GEO-1 would ensure that project design incorporates all applicable CBC requirements and site-specific recommendations formulated in a geotechnical investigation/slope stability analysis, thus minimizing slope stability hazards. As such, MM-GEO-1 would ensure that proposed cut-and-fill grading is completed in a manner that would reduce the potential for landslides to occur and therefore would prevent potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. Upon implementation of MM-GEO-1, impacts would be less than significant.

3.5.8 References Cited

California DOGGR (Division of Oil, Gas, and Geothermal Resources). 1998. Oil Field Map No. 251, Placerita Field.

California DOGGR. 2018a. "Oil, Gas, and Geothermal District 1 Maps." Accessed November 1, 2018. http://www.conservation.ca.gov/dog/maps/Pages/d1_index_map1.aspx.

California DOGGR. 2018b. California Statutes and Regulations for the Division of Oil, Gas, & Geothermal Resources. Publication No. PRC10. Accessed November 2, 2018. http://www.conservation.ca.gov/index/Documents/DOGGR%20Statutes%202018%20%20updated%204-4.pdf.

CDMG (California Division of Mines and Geology). 1969. Geologic Map of California, Los Angeles Sheet, Scale 1:250,000. Accessed October 24, 2018. https://ngmdb.usgs.gov/Prodesc/proddesc_16341.htm.

CGS (California Geological Survey). 1998. Earthquake Zones of Required Investigation, Newhall Quadrangle. Accessed October 24, 2018. http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/NEWHALL_EZRIM.pdf.

CGS. 1999a. Earthquake Zones of Required Investigation, San Fernando Quadrangle. Accessed October 24, 2018. http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/SAN_FERNANDO_EZRIM.pdf.

CGS. 1999b. Earthquake Zones of Required Investigation, Mint Canyon Quadrangle. Accessed October 24, 2018. http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/MINT_CANYON_EZRIM.pdf.

CGS. 2010. Fault Activity Map of California. Accessed October 24, 2018. http://maps.conservation.ca.gov/cgs/fam/.

CGS. 2016. Earthquake Shaking Potential for California. Map Sheet 48. Accessed October 30, 2018. http://www.conservation.ca.gov/cgs/Documents/Publications/MS_048.pdf.

CGS. 2018a. Earthquake Fault Zones, A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California. Special Publication 42, Revised 2018. Accessed October 24, 2018. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf.

CGS. 2018b. "Ground Motion Interpolator." Accessed October 31, 2018. http://www.conservation.ca.gov/cgs/ground-motion-interpolator.

Fannie Mae. 2017. United States Geological Survey (USGS) Peak Ground Acceleration (PGA) Calculator Tutorial (Beta – Unified Hazard Tool). April 2017. Accessed October 31, 2018. https://www.fanniemae.com/content/job_aid/usgs-peak-ground-acceleration-pga-calculator-tutorial.pdf.

SCEDC (Southern California Earthquake Data Center). 2013. "Significant Earthquakes and Faults." Accessed October 30, 2018. http://scedc.caltech.edu/significant/sanfernando.html.

USGS (United States Geological Survey). 1971. "The San Fernando, California, Earthquake of February 9, 1971." Geological Survey Professional Paper 733. Accessed October 24, 2018. https://pubs.er.usgs.gov/publication/pp733.

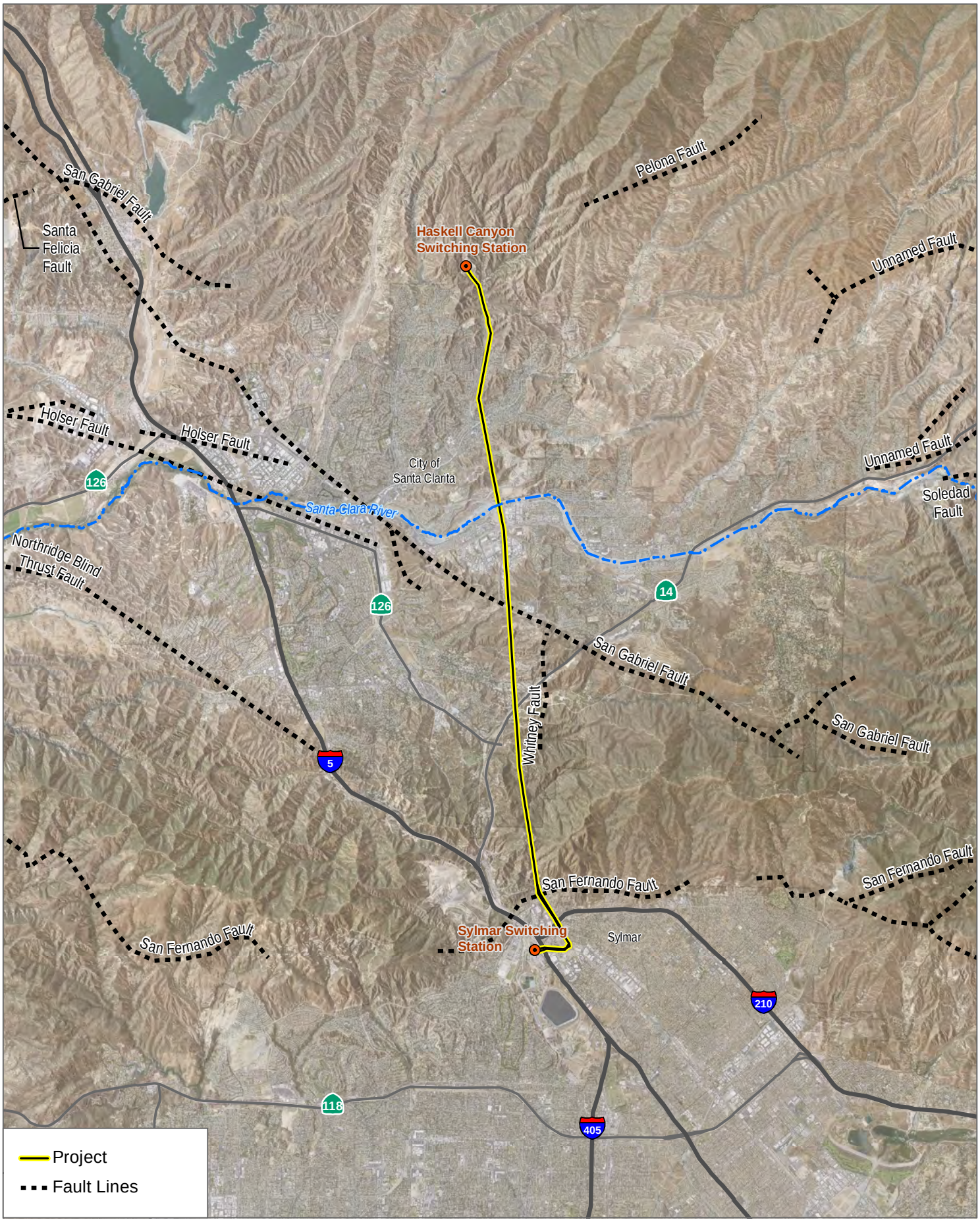
USGS. 1988. "The 1987 Whittier Narrows Earthquake in the Los Angeles Metropolitan Area, California." Accessed October 24, 2018. https://pubs.er.usgs.gov/publication/70014343.

USGS. 1994. "The Magnitude 6.7 Northridge, California Earthquake of 17 January 1994." Accessed October 24, 2018. https://pubs.er.usgs.gov/publication/70017610.

USGS. 2018a. Geologic Maps of US States. Accessed October 23, 2018. https://mrdata.usgs.gov/geology/state/.

USGS. 2018b. "Areas of Land Subsidence in California." Accessed November 1, 2018. https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html.

INTENTIONALLY LEFT BLANK



SOURCE: Dudek 2018, Chubb Custom Cartography 2018, CGS 2010, USDA 2016

LA DWP Los Angeles Department of Water & Power

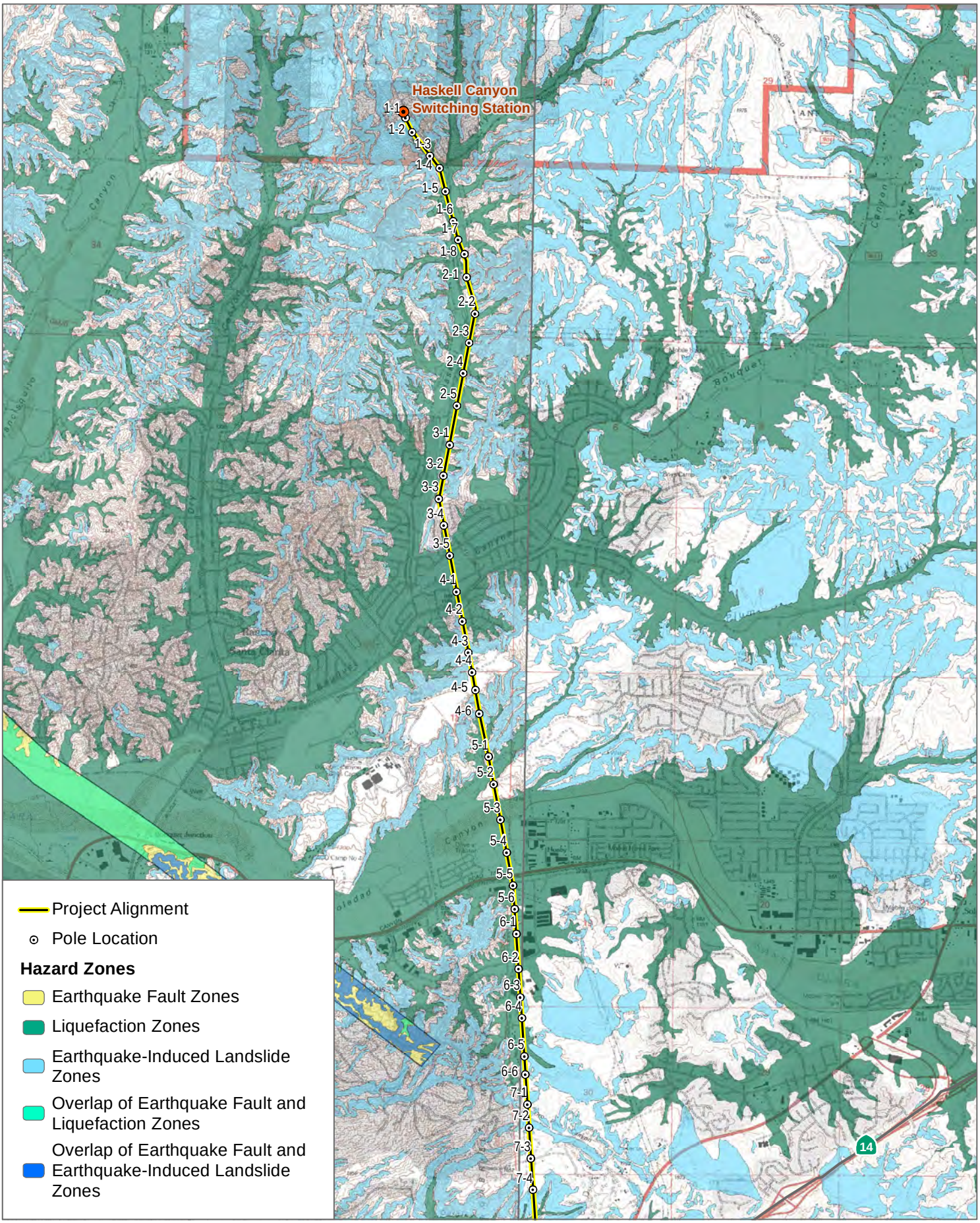
0 1 2 Miles

FIGURE 3.5-1

Faults

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK



SOURCE: CGS 1998, 1999a, 1999b

Los Angeles Department of Water & Power

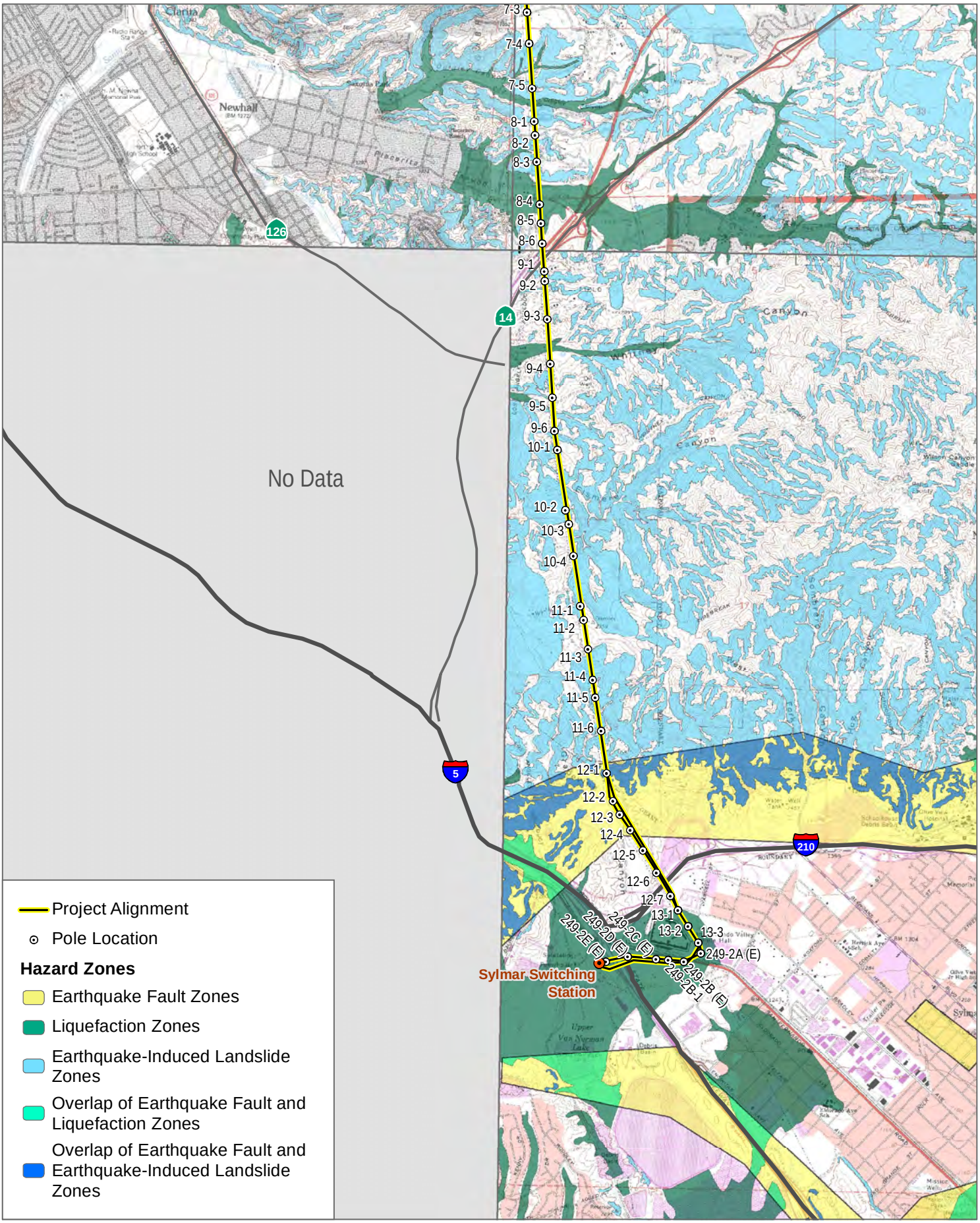
0 0.375 0.75 Miles

FIGURE 3.5-2A

Seismic Hazards

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK



SOURCE: CGS 1998, 1999a, 1999b

Los Angeles Department of Water & Power

0 0.375 0.75 Miles

FIGURE 3.5-2B

Seismic Hazards

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

3.6 Greenhouse Gas Emissions

This section describes greenhouse gas (GHG) emissions present in the project area; discusses applicable federal, state, and regional regulations pertaining to GHGs and evaluates the potential effects of GHGs associated with development of the proposed project.

No comments were received in response to the Notice of Preparation (see Appendix A) with respect to GHG emissions. Information contained in this section is based on federal, state, and local GHG reduction regulations and modeling of the proposed project's construction GHG emissions. Sources consulted are listed in Section 3.6.8.

3.6.1 Existing Conditions

Climate change refers to any significant change in measures of Earth's climate, such as temperature, precipitation, and wind patterns, lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human-caused, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (U.S. Environmental Protection Agency (EPA) 2017).

The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process, as follows: short-wave radiation emitted by the sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales, and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-20th century and are the most significant driver of observed climate change (EPA 2017; International Panel on Climate Change (IPCC) 2013). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further in this section.

Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also CEQA Guidelines Section 15364.5).[1] Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[2]

Carbon Dioxide. CO_2 is a naturally occurring gas, a by-product of human activities, and the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are the combustion of fuels such as coal, oil, natural gas, and wood, and changes in land use.

Methane. CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), use of commercial and organic fertilizers, manure management, industrial processes (such as nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are powerful synthetic GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric ozone-depleting substances (e.g., chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons). The most prevalent fluorinated gases are the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances for many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.

[1] Climate-forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in California Health and Safety Code Section 38505, so impacts associated with other climate-forcing substances are not evaluated herein.

[2] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change's (IPCC's) Second Assessment Report (1995), IPCC's Fourth Assessment Report (2007), California Air Resources Board's (CARB's) "Glossary of Terms Used in GHG Inventories" (CARB 2018b), and EPA's "Glossary of Climate Change Terms" (EPA 2016).

- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to ozone-depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 year and 50,000 years.
- **Sulfur Hexafluoride:** SF_6 is a colorless gas soluble in alcohol and ether and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection. (Note that SF_6 emissions for the proposed project would be minimal to negligible; as such, they are not included in this analysis.)
- **Nitrogen Trifluoride:** NF_3 is used in the manufacture of a variety of electronics, including semiconductors and flat-panel displays.

Chlorofluorocarbons. CFCs are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. CFCs are chemically unreactive in the lower atmosphere (troposphere), and the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric ozone that is caused by CFCs.

Hydrochlorofluorocarbons. HCFCs are a large group of compounds whose structure is very close to that of CFCs—containing hydrogen, fluorine, chlorine, and carbon atoms—but including one or more hydrogen atoms. Like HFCs, HCFCs are used in refrigerants and propellants. HCFCs were also used in place of CFCs for some applications; however, their use in general is being phased out.

Black Carbon. Black carbon is a component of fine particulate matter, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is short-lived and varies spatially, making it difficult to quantify its global warming potential. Diesel particulate matter emissions are a major source of black carbon and are toxic air contaminants that have been regulated and controlled in California for several decades to protect public health. Because of the California Air Resources Board's (CARB) regulations pertaining to diesel engines, diesel fuels, and burning activities, CARB estimates that annual black carbon emissions in California were reduced by 70% between 1990 and 2010, with 95% control expected by 2020 (CARB 2014).

Water Vapor. The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere and maintains a climate on Earth that is necessary for life.

Ozone. Tropospheric ozone, which is created by photochemical reactions involving gases from both natural sources and human activities, acts as a GHG. Stratospheric ozone, which is created by the interaction between solar ultraviolet radiation and molecular oxygen (O_2), plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric ozone due to chemical reactions that may be enhanced by climate change results in an increased ground-level flux of ultraviolet-B radiation.

Aerosols. Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affects to cloud formation or albedo, which is the reflection of radiation) (EPA 2016). The IPCC developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons (MT) of carbon dioxide equivalent (CO_2e).

The current version of the California Emissions Estimator Model (CalEEMod) (Version 2016.3.2) assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the IPCC Fourth Assessment Report (IPCC 2007). The GWP values identified in CalEEMod were applied to the proposed project.

Sources of GHG Emissions

Global Inventory

Anthropogenic GHG emissions worldwide in 2016 (the most recent year for which data is available) totaled approximately 49,300 million metric tons (MMT) of CO_2e, excluding GHG emissions from land use change and forestry (PBL 2017). Six countries (China, the United States of America, the Russian Federation, India, Japan, and Brazil) plus the European Union accounted for approximately 65% of the total global emissions, or approximately 32,255 MMT CO_2e (PBL 2017). Table 3.6-1 presents the top GHG-emissions-producing countries.

Table 3.6-1. Six Top Greenhouse Gas Producer Countries and the European Union

Emitting Countries (listed in order of emissions)	Greenhouse Gas Emissions (MMT CO_2e)
China	13,010
United States	6,430
European Union	4,430
India	3,650
Russian Federation	2,220
Japan	1,400
Brazil	1,115
Total	32,255

Source: PBL 2017.
Note: MMT CO_2e = million metric tons of carbon dioxide equivalent.

National and State Inventories

Per the U.S. EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2016 (EPA 2018), total U.S. GHG emissions were approximately 6,511.3 MMT CO_2e in 2016. The primary GHG emitted by human activities in the U.S. was CO_2, which represented approximately 81.6% of total GHG emissions (5,310.9 MMT CO_2e). The largest source of CO_2 and of overall GHG emissions was fossil-fuel combustion, which accounted for approximately 93.5% of CO_2 emissions in 2016 (4,966.0 MMT CO_2e). Relative to 1990, gross United States GHG emissions in 2016 are higher by 2.4% but are down from a high of 15.7% above 1990 levels in 2007. GHG emissions decreased from 2015 to 2016 by 1.9% (126.8 MMT CO_2e), and, overall, net emissions in 2016 were 11.1% below 2005 levels (EPA 2018).

According to California's 2000–2016 GHG emissions inventory (2018 edition), California emitted 429.40 MMT CO_2e in 2016, including emissions resulting from out-of-state electrical generation (CARB 2018a). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high GWP substances, and recycling and waste. The California GHG emissions source categories (as defined in CARB's 2008 Climate Change Scoping Plan: A Framework for Change (Scoping Plan) (CARB 2008)) and their relative contributions in 2016 are presented in Table 3.6-2.

Table 3.6-2. Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Transportation	169.38	39%
Industrial uses[b]	89.61	21%
Electricity generation[c]	68.58	16%
Residential and commercial uses	39.36	9%
Agriculture	33.84	8%
High GWP substances	19.78	5%
Recycling and waste	8.81	2%
Totals	429.40	100%

Source: CARB 2018a.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential. Emissions reflect 2016 California GHG inventory.

[a] Percentage of total has been rounded and total may not sum due to rounding.

[b] The Aliso Canyon natural gas leak event released 1.96 MMT CO_2e of unanticipated emissions in 2015 and 0.53 MMT CO_2e in 2016. These leak emissions will be fully mitigated according to legal settlement and are tracked separately from routine inventory emissions.

[c] Includes emissions associated with imported electricity, which account for 26.28 MMT CO_2e.

Between 2000 and 2016, per capita GHG emissions in California have dropped from a peak of 14.0 MT per person in 2001 to 10.8 MT per person in 2016, representing a 23% decrease. In addition, total GHG emissions in 2016 were approximately 12 MMT CO_2e less than 2015 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below California's 2020 target of 431 MT CO_2e (CARB 2018a), which is set forth by CARB in its Scoping Plan (see Section 3.6.2 for details on the Scoping Plan and California's GHG reduction targets).

Local Inventories

City of Los Angeles

According to City of Los Angeles' 3rd Annual Report for the Cities' Sustainable City Plan (2017 edition), the City of Los Angeles emitted 26.7 MMT CO_2e in 2016 (City of Los Angeles 2017). The sources of GHG emissions in Los Angeles include transportation, electric power production, and waste. Relative contributions from these sources for 2016 are presented in Table 3.6-3.

Table 3.6-3. Greenhouse Gas Emissions Sources in City of Los Angeles

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Transportation	5.61	21%
Energy	19.49	73%
Waste	1.60	6%
Totals	26.70	100%

Source: City of Los Angeles 2017
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential. Emissions reflect 2016 Los Angeles GHG inventory.
[a] Percentage of total has been rounded and total may not sum due to rounding.

Between 2013 and 2016, per capita GHG emissions in the City of Los Angeles have dropped from a peak of 30.7 MT in 2014 to 26.7 MT in 2016, representing a 13% decrease. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that City of Los Angeles will continue to reduce emissions to meet the state's 2020 target of 431 MT CO_2e.

City of Santa Clarita

According to City of Santa Clarita's Climate Action Plan (CAP), the City of Santa Clarita emitted 1.63 MMT CO_2e in 2005 (City of Santa Clarita 2012). The sources of GHG emissions in Santa Clarita include transportation, off-road equipment, building energy, and "other," which includes waste, outdoor lighting, agriculture, and water use. Relative contributions from these sources for 2015 are presented in Table 3.6-4.

Table 3.6-4. Greenhouse Gas Emissions Sources in the City of Santa Clarita

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Transportation	1.07	66%
Off-Road	0.02	1%
Building and Industrial Sector Energy	0.53	33%
Other	0.01	<1%
Totals	1.63	100%

Source: City of Santa Clarita 2012
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential. Emissions reflect 2005 City of Santa Clarita GHG inventory.
[a] Percentage of total has been rounded and total may not sum due to rounding.

County of Los Angeles

According to the County of Los Angeles's (County) Community Climate Action Plan (CCAP), the County emitted 7.98 MMT CO_2e in 2010 (County of Los Angeles 2015). The sources of GHG emissions in the County include building energy, transportation, waste generation, water conveyance, agriculture, and stationary sources. Relative contributions from these sources for 2010 are presented in Table 3.6-5.

Table 3.6-5. Greenhouse Gas Emissions Sources in the County of Los Angeles

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Building Energy	3,90	49%
Transportation	3.38	42%
Waste Generation	0.54	7%
Water Conveyance	0.13	2%
Agriculture	0.03	<1%
Stationary Sources	<0.01	<1%
Totals	7.98	100%

Source: County of Los Angeles 2015.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential. Emissions reflect 2010 County of Los Angeles GHG inventory.
[a] Percentage of total has been rounded and total may not sum due to rounding.

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 Intergovernmental Panel on Climate Change Synthesis Report (IPCC 2014) indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, rising sea levels, and ocean acidification (IPCC 2014).

In California, climate change impacts have the potential to affect sea-level rise, agriculture, snowpack and water supply, forestry, wildfires, public health, weather events, and electricity demand and supply. The primary effect of global climate change has been a 0.2° Celsius (C) (0.36° Fahrenheit (F)) rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the 21st century than what was observed during the 20th century. A warming of approximately 0.2°C per decade is projected, and there are identifiable signs that global warming could take place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights. Shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year. Sea levels

have risen, and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (Climate Action Team (CAT) 2010).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by approximately 1.7°F from 1895 to 2011, with warming the greatest in the Sierra Nevada (California Climate Change Center (CCCC) 2012). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1°F to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights (CCCC 2012). A decline in the Sierra Nevada snowpack, which accounts for approximately half of the surface water storage in California, by 30% to as much as 90% is predicted over the next 100 years (CAT 2006).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers, with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid- to late 21st century in central, and most notably, Southern California. By the late century, all projections show drying, and half of them suggest that 30-year average precipitation will decline by more than 10% below the historical average (CCCC 2012).

A summary of current and future climate change impacts to resource areas in California, as discussed in the Safeguarding California: Reducing Climate Risk (California Natural Resources Agency 2014), is provided below.

Agriculture. The impacts of climate change on the agricultural sector are far more severe than the typical variability in weather and precipitation patterns that occur year to year. Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events that range from severe flooding to extreme drought to destructive storm events; significant shifts in water availably and water quality; changes in pollinator lifecycles; temperature fluctuations, including extreme heat stress and decreased chill hours; increased risks from invasive species and weeds, agricultural pests, and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production. These challenges and associated short-term and long-term impacts can have both positive and negative effects on agricultural production. Nonetheless, it is predicted that current crop and livestock production will suffer long-term negative effects resulting in a substantial decrease in the agricultural sector if not managed or mitigated (CNRA 2014).

Biodiversity and Habitat. The state's extensive biodiversity stems from its varied climate and assorted landscapes, which have resulted in numerous habitats where species have evolved and adapted over time. Specific climate change challenges to biodiversity and habitat include species migration in response to climatic changes, range shifts, and novel combinations of species; pathogens, parasites, and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a

"tipping point" beyond which irreversible damage or loss can be recouped). Habitat restoration, conservation, and resource management across California and through collaborative efforts among public, private, and nonprofit agencies has assisted in the effort to fight climate change impacts on biodiversity and habitat. One of the key measures in these efforts is ensuring species' ability to relocate as temperature and water availability fluctuate due to of climate change (CNRA 2014).

Energy. The energy sector provides California residents with a supply of reliable and affordable energy through a complex, integrated system. Specific climate change challenges for the energy sector include temperature rise, fluctuating precipitation patterns, increasing extreme weather events, and sea-level rise. Increasing temperatures and reduced snowpack negatively impact the availability of a steady flow of snowmelt to feed hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants, since power plant cooling is less efficient at higher ambient temperatures. Increased temperatures will also increase electricity demand associated with air conditioning. Natural gas infrastructure in coastal California is threatened by sea-level rise and extreme storm events (CNRA 2014).

Forestry. Forests occupy approximately 33% of California's 100 million acres and provide key benefits such as wildlife habitat, absorption of CO_2, renewable energy, and building materials. The most significant climate-change-related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large-scale vegetation mortality, and, combined with increasing temperatures, have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts, and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat, and decreased carbon absorption. Climate change may result in increased establishment of non-native species, particularly in rangelands where invasive species are already a problem. Invasive species may be able to exploit temperature or precipitation changes, or quickly occupy areas denuded by fire, insect mortality, or other climate change effects on vegetation (CNRA 2014).

Ocean and Coastal Ecosystems and Resources. Sea-level rise, changing ocean conditions, and other climate-change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems, in addition to threatening people and infrastructure located along the California coastline and in coastal communities. Sea-level rise, in addition to more frequent and severe coastal storms and erosion, are threatening vital infrastructure such as roads, bridges, power plants, ports, airports, gasoline pipes, and emergency facilities, as well as negatively impacting coastal recreational assets such as beaches and tidal wetlands. Water quality and ocean acidification threaten the abundance of seafood and other plant and wildlife habitats throughout California and globally (CNRA 2014).

Public Health. Climate change can impact public health through various environmental changes and is the largest threat to human health in the 21st century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity, and duration of extreme heat and heat waves are likely to increase the risk of mortality due to heat-related illness, and exacerbate existing chronic health conditions. Other extreme weather events are likely to

negatively impact air quality and increase or intensify respiratory illness such as asthma and allergies. Additional health effects that may be impacted by climate change include cardiovascular disease, vector-borne diseases, mental health impacts, and malnutrition. Increased frequency of these ailments is likely to subsequently increase the direct risk of injury and/or mortality (CNRA 2014).

Transportation. Residents of California rely on airports, seaports, public transportation, and an extensive roadway network to gain access to destinations, goods, and services. Although the transportation industry is a source of GHG emissions, it is also vulnerable to climate change risks. Particularly, sea-level rise and erosion threaten many coastal California roadways, airports, seaports, transit systems, bridge supports, and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. High temperatures cause road surfaces to expand, which leads to increased pressure and pavement buckling. High temperatures can also cause rail breakages, which could lead to train derailment. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure, which can impair movement of people and goods, and potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion, landslides, mudslides, and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety (CNRA 2014).

Water. Water resources in California support residences, plants, wildlife, farmland, landscapes, and ecosystems, and bring trillions of dollars in economic activity. Climate change could seriously impact the timing, form, and amount of precipitation; runoff patterns; and the frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can impact water supply availability, natural ecosystems, and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during winter. Increased risk of flooding has a variety of public health concerns, including water quality, public safety, property damage, displacement, and post-disaster mental health problems. Prolonged and intensified droughts can also negatively impact groundwater reserves and result in increased overdraft and subsidence. Droughts can also negatively impact agriculture and farmland throughout the state. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality. Water temperatures are also prone to increase, which can negatively impact wildlife that rely on a specific range of temperatures for suitable habitat (CNRA 2014).

In March 2016, the California Natural Resources Agency released Safeguarding California: Implementation Action Plans, a document that shows how California is acting to convert the recommendations contained in the 2014 Safeguarding California plan into action (CNRA 2016). Additionally, in May 2017, the California Natural Resources Agency released the draft Safeguarding California Plan: 2017 Update, which is a survey of current programmatic responses for climate change, and contains recommendations for further actions (CNRA 2017). The California Natural Resources Agency released its Safeguarding California Plan: 2018 Update in January 2018, which provides a roadmap for state agencies to protect communities, infrastructure, services, and the natural environment from climate change impacts. The 2018 Safeguarding California Plan includes 69 recommendations across 11 sectors and more than 1,000 ongoing actions and next steps developed by scientific and policy experts across 38 state agencies (CNRA 2018). As with previous state adaptation plans, the 2018 Update addresses acceleration of warming across the state; more intense and frequent heat waves; greater riverine flows; accelerating sea-level rise; more intense and frequent

drought; more severe and frequent wildfires; more severe storms and extreme weather events; shrinking snowpack and less overall precipitation; and ocean acidification, hypoxia, and warming.

3.6.2 Relevant Plans, Policies, and Ordinances

Federal

Massachusetts vs. EPA

On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the federal Clean Air Act. On December 7, 2009, the Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act

On December 19, 2007, President George W. Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the act would do the following, which would aid in the reduction of national GHG emissions:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2. Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and to create a separate fuel economy standard for work trucks.
3. Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards

In response to the previously discussed U.S. Supreme Court ruling, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (EPA 2010).

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 for light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry-fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks previously described, in 2011 EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over 2010 baselines.

In August 2016, EPA and NHTSA announced the adoption of the phase two program related to fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018–2027 for certain trailers, and model years 2021–2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and

reconstructed fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits. In March 2017, President Trump directed the EPA Administrator to review the Clean Power Plan in order to determine whether it is consistent with current executive policies concerning GHG emissions, climate change and energy.

State

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders (EOs), legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Change Targets

EO S-3-05. EO S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, GHG emissions should be reduced to 1990 levels by 2020, and GHG emissions should be reduced to 80% below 1990 levels by 2050.

AB 32 and CARB's Climate Change Scoping Plan. In furtherance of the goals established in EO S-3-05, the Legislature enacted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, CARB is responsible for and is recognized as having the expertise to carry out and develop the programs and requirements necessary to achieve the GHG emissions reduction mandate of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions from specified sources. This program is used to monitor and enforce compliance with established standards. CARB also is required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emissions limitation, emissions reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for 2020, consistent with the determined 1990 baseline (427 MMT CO_2e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the Climate Change Scoping Plan: A Framework for Change (Scoping Plan) in accordance with Health and Safety Code Section 38561. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction features by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan are the following (CARB 2008):

- Expanding and strengthening existing energy efficiency programs and building and appliance standards.

- Achieving a statewide renewable energy mix of 33%.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing to 85% of California's GHG emissions.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

In the Scoping Plan, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 28.5% from the otherwise projected 2020 emissions level (i.e., those emissions that would occur in 2020 absent GHG-reducing laws and regulations, referred to as "business-as-usual"). For purposes of calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, that no further regulatory action would impact vehicle fuel efficiency, and that building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the Scoping Plan's Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7% (down from 28.5%) from the business-as-usual conditions (CARB 2011). The 2020 emissions level projection was also updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (RPS) (12% to 20%) (CPUC 2015). Based on these updates, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16% (down from 28.5%) from the business-as-usual conditions.

In 2014, CARB adopted the First Update to the Climate Change Scoping Plan: Building on the Framework (First Update). The stated purpose of the First Update is to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80% below 1990 levels by 2050" (CARB 2014). The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32 and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80% below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the First Update, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050" (CARB 2014). Those six areas are energy, transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure), agriculture, water, waste

management, and natural and working lands. The First Update identifies key recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

CARB's research efforts presented in the First Update indicate that it has a "strong sense of the mix of technologies needed to reduce emissions through 2050" (CARB 2014). Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficient and clean energy technologies.

As part of the First Update, CARB recalculated the state's 1990 emissions level using more recent GWPs identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2e) and the revised 2020 emissions level projection identified in the 2011 Final Supplement (CARB 2011), CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15% (instead of 28.5% or 16%) from the business-as-usual conditions (CARB 2014).

On January 20, 2017, CARB released its 2017 Climate Change Scoping Plan Update (Second Update) for public review and comment (CARB 2017). This update presents CARB's strategy for achieving the state's 2030 GHG target as established in Senate Bill (SB) 32 (discussed below), including continuing the Cap-and-Trade Program through 2030, and includes a new approach to reduce GHGs from refineries by 20%. The Second Update incorporates approaches to cutting short-lived climate pollutants (SLCPs) under the Short-Lived Climate Pollutant Reduction Strategy (a planning document that was adopted by CARB in March 2017), acknowledges the need for reducing emissions in agriculture, and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon. During development of the Second Update, CARB held a number of public workshops in the natural and working lands, agriculture, energy, and transportation sectors to inform development of the 2030 Scoping Plan Update (CARB 2017). When discussing project-level GHG emissions reduction actions and thresholds, the Second Update states, "achieving no net increase in GHG emissions is the correct overall objective, but it may not be appropriate or feasible for every development project. An inability to mitigate a project's GHG emissions to zero does not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA" (CARB 2017b). The Second Update was approved by CARB's Governing Board on December 14, 2017.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing statewide GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG emissions to 80% below 1990 levels by 2050, as set forth in EO S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's Scoping Plan to express the 2030 target in terms of MMT CO_2e. The executive order also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. EO B-30-15 does not require local agencies to take any action to meet the new interim GHG reduction target.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction targets, make changes to CARB's membership, increase legislative oversight of CARB's climate-change-based activities, and expand dissemination of GHG and other air-quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and toxic air contaminants from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

SB 605 and SB 1383. SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of SLCPs in the state, and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40% below 2013 levels by 2030 for CH_4 and HFCs, and 50% below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its Short-Lived Climate Pollutant Reduction Strategy (SLCP Reduction Strategy) in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, CH_4, and fluorinated gases.

Building Energy

Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Although not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure that new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and California Energy Commission (CEC) (and revised if necessary) (California Public Resources Code (PRC) Section 25402(b)(1)). The regulations receive input from members of industry and the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (PRC Section 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (PRC Section 25402(d)) and cost effectiveness (PRC Sections 25402(b)(2) and (b)(3)). These standards are updated to consider and incorporate new energy-efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The current Title 24 standards are the 2016 Title 24 Building Energy Efficiency Standards, which became effective January 1, 2017. The 2019 Title 24 Building Energy Efficiency Standards, which will be effective January 1, 2020, will further reduce energy used and associated GHG emissions compared to current standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family

residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018).

Title 24, Part 11. In addition to CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code is commonly referred to as CALGreen, and establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality (CALGreen 2016). The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, and schools and hospitals. The CALGreen 2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings.
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance.
- 65% of construction and demolition waste must be diverted from landfills.
- Mandatory inspections of energy systems to ensure optimal working efficiency.
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations.
- Low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements, stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 75% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

The California Public Utilities Commission (CPUC), CEC, and CARB also have a shared, established goal of achieving zero net energy for new construction in California. The key policy timelines are that all new residential construction in California will be zero net energy by 2020, and all new commercial construction in California will be zero net energy by 2030 (CPUC 2013).[3] As most recently defined by CEC in its 2015 Integrated Energy Policy Report, a zero net energy code building is "one where the value of the energy produced by onsite renewable energy resources is equal to the value of the energy consumed annually by the building" using the CEC's time-dependent valuation metric (CEC 2015).

[3] It is expected that achievement of the zero net energy goal will occur via revisions to the Title 24 standards.

Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low-voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations, and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

SB 1. SB 1 (2006) established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the Public Resources Code, including Chapter 8.8, California Solar Initiative, that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry in which solar energy systems are a viable mainstream option for homes and businesses within 10 years of adoption, and to place solar energy systems on 50% of new homes within 13 years of adoption. SB 1, also termed "GoSolarCalifornia," was previously titled "Million Solar Roofs."

AB 1470. This bill established the Solar Water Heating and Efficiency Act of 2007. The bill made findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies to reduce natural gas demand. The bill defined several terms for purposes of the act. The bill required the CEC to evaluate the data available from a specified pilot program, and, if it made a specified determination, to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general purpose lighting to reduce electricity consumption by 50% for indoor residential lighting and by 25% for indoor commercial lighting.

Renewable Energy and Energy Procurement

SB 1078. SB 1078 (2002) established the RPS program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010.

SB 1368. SB 1368 (2006) requires the CEC to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be

consistent with the standards adopted by the CPUC. This effort will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low as or lower than new combined-cycle natural gas plants by requiring imported electricity to meet GHG performance standards in California and by requiring that the standards be developed and adopted in a public process.

SB X1 2. SB X1 2 (2011) expanded the RPS by establishing that 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350. SB 350 (2015) further expanded the RPS by establishing that 50% of the total electricity sold to retail customers in California per year by December 31, 2030, be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

SB 100. SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the State that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California by 2045. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Mobile Sources

AB 1493. In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. In 2009–2012, standards resulted in a reduction of approximately 22% in GHG emissions compared to emissions from the 2002 fleet, and in 2013–2016, standards resulted in a reduction of approximately 30%.

EO S-1-07. Issued on January 18, 2007, EO S-1-07 sets a declining low-carbon fuel standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the low-carbon fuel standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. Carbon intensity measures

the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste.

SB 375. SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations (MPO) are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan (RTP). The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If an SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), an SCS does not regulate the use of land; supersede the land use authority of cities and counties; or require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In September 2010, CARB adopted the SB 375 targets for the regional MPOs. The targets for SCAG are an 8% reduction in emissions per capita by 2020 and a 13% reduction by 2035 below 2005 levels. Achieving these goals through adoption of an SCS is the responsibility of the MPOs. SCAG's RTP/SCS was adopted by the SCAG Regional Council in April 2012. The plan quantified a 9% reduction in emissions per capita by 2020 and a 16% reduction by 2035 (SCAG 2012). On June 4, 2012, the CARB executive officer issued an executive order accepting SCAG's quantification of GHG reductions and the determination that implementation of the SCS would achieve the GHG emissions reduction targets established by CARB. On April 4, 2016, the SCAG Regional Council adopted the 2016 RTP/SCS, which builds on the progress made in the 2012 RTP/SCS. The updated RTP/SCS quantified an 8% reduction in emissions per capita by 2020, an 18% reduction by 2035, and a 21% reduction by 2040 below 2005 levels (SCAG 2016).

Advanced Clean Cars Program. In January 2012, CARB approved the Advanced Clean Cars program, an emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single, coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2011). To improve air quality, CARB implemented new emission standards to reduce smog-forming emissions beginning with 2015 model-year vehicles. It is estimated that by 2025, cars will emit 75% less smog-forming pollution than the average new car sold before 2012. To reduce GHG emissions, CARB, in conjunction with the EPA and NHTSA, adopted new GHG standards for model years 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% by 2025. The Zero Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs

and plug-in hybrid electric vehicles in 2018 to 2025 model years. The Clean Fuels Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market.

EO B-16-12. EO B-16-12 (2012) directs state entities under the governor's direction and control to support and facilitate development and distribution of ZEVs. This executive order also sets a long-term target of reaching 1.5 million ZEVs on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80% less than 1990 levels by 2050. In furtherance of this executive order, the governor convened an Interagency Working Group on ZEVs that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet.

AB 1236. AB 1236 (2015), as enacted in California's Planning and Zoning Law, requires local land use jurisdictions to approve applications for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless there is substantial evidence in the record that the proposed installation would have a specific, adverse impact on public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provides for appeal of that decision to the planning commission. The bill required local land use jurisdictions with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, to create an expedited and streamlined permitting process for electric vehicle charging stations. Prior to this statutory deadline, in August 2016, the County of Los Angeles Board of Supervisors adopted Ordinance No. 10437 (N.S.) adding a section to the Los Angeles County Code related to the expedited processing of electric-vehicle charging-station permits consistent with AB 1236.

SB 350. In 2015, SB 350, the Clean Energy and Pollution Reduction Act, was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see Public Utilities Code Section 740.12).

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (PRC Sections 40000 et seq.), was passed because of the increase in waste stream and decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed of, and jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that CalRecycle believes will assist the state in reaching the 75% goal by 2020.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the executive order extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The executive order includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increased the requirements for landscape water use efficiency and broadened its applicability to include new development projects with smaller landscape areas.

Other State Regulations and Goals

SB 97. SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (Office of Planning and Research (OPR) 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. CNRA adopted the CEQA Guidelines amendments in December 2009, which became effective in March 2010.

Under the amended CEQA Guidelines in the CCR, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis, or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4(a)). The CEQA Guidelines require a lead agency to consider the extent to which a project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through implementation of project features or offsite measures. The adopted amendments do not establish a GHG emissions threshold, but allow a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The California Natural Resources Agency also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009a).

With respect to GHG emissions, the CEQA Guidelines state in CCR Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions, or by relying on "qualitative analysis or other performance based standards" (14 CCR 15064.4(a)). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: the extent a project may increase or reduce GHG emissions compared to the existing environmental setting; whether project emissions exceed a threshold of

significance that the lead agency determines applies to the project; and the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

EO S-13-08. EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the executive order directs state agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009 (CNRA 2009a), and an update, Safeguarding California: Reducing Climate Risk, followed in July 2014 (CNRA 2014). To assess the state's vulnerability to climate change, the report summarizes key climate change impacts to the state for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water. Issuance of the Safeguarding California: Implementation Action Plans followed in March 2016 (CNRA 2016). A draft of the Safeguarding California Plan: 2017 Update was prepared to communicate current and needed actions that state government should take to build climate change resiliency (CNRA 2017).

2015 State of the State Address. In January 2015, Governor Brown in his inaugural address and annual report to the Legislature established supplementary goals that would further reduce GHG emissions over the next 15 years. These goals include an increase in California's renewable energy portfolio from 33% to 50%, a reduction in vehicle petroleum use for cars and trucks by up to 50%, measures to double the efficiency of existing buildings, and measures to decrease emissions associated with heating fuels.

2016 State of the State Address. In his January 2016 address, Governor Brown established a statewide goal to bring per-capita GHG emissions down to 2 MT per person, which reflects the goal of the Global Climate Leadership Memorandum of Understanding (Under 2 Memorandum of Understanding) to limit global warming to less than 2°C by 2050. The Under 2 Memorandum of Understanding agreement pursues emission reductions of 80% to 95% below 1990 levels by 2050 and/or reach a per-capita annual emissions goal of less than 2 MT by 2050. A total of 187 jurisdictions representing 38 countries and six continents, including California, have signed or endorsed the Under 2 Memorandum of Understanding (Under 2 Coalition 2017).

Local

The following local/regional regulations pertaining to GHG emissions would apply to the proposed project. For general plan policies that pertain to GHGs, see Section 3.2.2 of this EIR, which lists general plan policies pertaining to air quality. Air quality policies would have co-benefits of reducing GHG emissions.

Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated MPO for the Southern California region and is the largest MPO in the United States. With respect to air quality planning, GHG emissions, and other regional issues, SCAG

prepared the 2012 RTP. Specifically, the 2012 RTP/SCS links the goals of sustaining mobility with the goals of fostering economic development; enhancing the environment; reducing energy consumption; promoting transportation-friendly development patterns; and encouraging all residents affected by socioeconomic, geographic, and commercial limitations to be provided with fair access. Consistent with SB 375 direction, the 2012 and 2016 RTP/SCSs do not require that local general plans, specific plans, or zoning be consistent with SB 375 but provide incentives to governments and developers for achieving consistency. See Section 3.2 of this EIR for additional details on SCAG.

City of Los Angeles Sustainable City Plan

In April 2015, the City of Los Angeles's first-ever Sustainable City Plan was released. The plan sets the course for a cleaner environment and a stronger economy, with a commitment to equity as its foundation. The plan is made up of short-term (by 2017) and longer-term (by 2025 and 2035) targets in 14 categories that will advance the City of Los Angeles's environment, economy, and equity (City of Los Angeles 2015). The plan sets GHG emissions reduction targets of 45% by 2025, 60% by 2035, and 80% by 2050, all against a 1990 baseline, and GHG efficiency targets for Los Angeles's economy of improvement by 55% in 2025 and 75% in 2035 from 2009 baseline levels[4] (City of Los Angeles 2015). The first annual Sustainable City Plan report (2015–2016) determined that the City of Los Angeles's emissions are 20% below the 1990 baseline as of 2013, putting the City of Los Angeles nearly halfway to the 2025 plan reduction target of 45% below the 1990 baseline (City of Los Angeles 2017). The City's Sustainable City Plan is not a qualified GHG reduction plan under CEQA Guidelines Section 15183.5 and thus it cannot be used in a cumulative impacts analysis to determine significance.

City of Santa Clarita Climate Action Plan

The City of Santa Clarita City Council adopted a CAP in August 2012 and certified an accompanying EIR. The CAP meets the criteria in CEQA Guidelines 15183.5(b) for a "plan to reduce GHG emissions." The CAP commits the City to reduce community-wide GHG emissions by 4% below 2005 levels by 2020, consistent with the California Global Warming Solutions Act of 2006 (AB 32) and the related Climate Change Scoping Plan (CARB 2008).

As transportation activities make up the largest sector of emissions (60% of 2005 baseline emissions), the CAP's GHG reduction measures are focused around reducing vehicle miles traveled in the City through development of public transits systems and other alternative transportation programs. Other GHG reduction strategies are achieved through expansion of new and existing vegetated spaces, water use reduction, energy conservation, and land use measures. These reductions are estimated to produce a 17% reduction below the 2020 business-as-usual (BAU) emissions forecast level outlined in the CAP. Typically, if a given project is consistent with the land use and zoning assumptions of the CAP, the project would be considered consistent with the CAP and could tier from the CAP's EIR for its GHG emissions analysis under CEQA. However, for projects that would lead to a substantial increase in vehicles miles traveled (VMT) or that would include large industrial sources, a project-level BAU analysis would be required. The CAP has calculated a City-specific threshold for development

[4] GHG efficiency is the amount of GHG emissions emitted per dollar of economic productivity, which is assumed to be 44.5 MT CO_2e per million dollars of metro area gross domestic product in 2009 (City of Los Angeles 2015).

projects of 12% below BAU scenario, to demonstrate compliance with the CAP and AB 32. If a given project meets this threshold and is consistent with the land use and zoning assumptions of the CAP, the project would be considered consistent with the CAP (City of Santa Clarita 2012).

The proposed project would not result in a long-term source of GHG emissions and would be in operation well beyond 2020. Therefore, the proposed project cannot tier from the City of Santa Clarita's CAP for GHG emissions analysis under CEQA. As such, this chapter presents a project-specific GHG analysis for the proposed project.

County of Los Angeles Community Climate Action Plan

The County's CCAP (County of Los Angeles 2015), which was prepared in accordance with CEQA Guidelines Section 15183.5, provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate. With respect to evaluation of projects under CEQA, the CCAP states "Projects that demonstrate consistency with the strategies, actions, and emission reduction targets contained in the CCAP would have less than significant impacts on climate change" (County of Los Angeles 2015). The County's CCAP also suggests best practices for implementation and makes recommendations for measuring progress.

The County's CCAP is intended to address the main sources of the emissions that cause climate change, which include emissions from the energy consumed in buildings and in transportation, as well as the solid waste sent to landfills. The purpose of the County's CCAP is to guide the development, enhancement, and implementation of actions that would reduce the County's GHG emissions by 11% below existing (2010) levels by 2020.

The proposed project would not result in a long-term source of GHG emissions and would be in operation well beyond 2020. Therefore, the project cannot tier from the County's CCAP for GHG emissions analysis under CEQA. As such, this section presents project-specific GHG analysis for the proposed project.

3.6.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to greenhouse gas emissions are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to greenhouse gas emissions would occur if the project would:

A. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

B. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

SCAQMD

Neither the State of California nor the SCAQMD has adopted emission-based thresholds of significance for GHG emissions under CEQA. However, in October 2008, the SCAQMD proposed recommended numeric CEQA

significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (SCAQMD 2008). This guidance document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association (CAPCOA), explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the SCAQMD's Governing Board. However, in December 2008, the SCAQMD adopted an interim 10,000 MT CO_2e per-year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency (SCAQMD Resolution No. 08-35, December 5, 2008).

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

Tier 1 Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2 Consider whether or not the project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3 Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4 Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per service population for project level analyses and 6.6 MT CO_2e per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5 Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

The proposed project's GHG emissions are concentrated during the construction phase. Operation of the proposed transmission line would not generate new GHG emissions. Additionally, the proposed project does not fit into any of the land-use types outlined above. As such, this analysis applies the recommended generic SCAQMD threshold of 3,000 MT CO_2e per year. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the proposed project (SCAQMD 2008). A project lifetime of 30 years was assumed, consistent with the SCAQMD typical lifetime assumption for projects and to ensure a conservative analysis (SCAQMD 2008).[5] This impact analysis, therefore, compares the project's amortized construction emissions to the proposed SCAQMD threshold of 3,000 MT CO_2e per year.

3.6.4 Methodology

CalEEMod Version 2016.3.2 was used to estimate potential proposed project-generated GHG emissions during construction. Construction of the proposed project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. Construction details discussed in Section 3.2 that were used in the air quality analysis are also applicable for the estimation of construction-related GHG emissions (see Section 3.2 for a discussion of construction emissions calculation methodology and assumptions). For operational GHG emissions, proposed maintenance activities to service the 230 kV transmission line would be similar in nature and scale to existing activity. Therefore, project operation would not increase GHG emissions, and operational GHG emissions were not calculated.

3.6.5 Impact Analysis

Threshold A: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction

Construction of the proposed project would result in GHG emissions, primarily associated with use of off-road construction equipment, on-road vendor trucks, worker vehicles, and helicopters.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Chapter 2 and in Section 3.2.2 of this EIR. Construction of the proposed project is anticipated to commence in late 2019 and would last approximately 4 years, ending around November 2023. On-site sources of GHG emissions would include off-road equipment and off-site sources would include vendor trucks, haul trucks, worker vehicles, and helicopters. Table 3.6-6 presents construction emissions for the proposed project in 2019 through 2023 from on-site and off-site emission sources.

[5] The proposed transmission line would likely operate for more than 30 years. However, amortizing construction emissions over a shorter time period results in a more conservative analysis. As such, 30 years is an acceptable (and conservative) duration, for the purposes of the GHG emissions analysis.

Table 3.6-6. Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2019	143.54	0.30	0.00	144.27
2020	2,218.17	0.40	0.00	2,229.13
2021	1,973.18	0.44	0.00	1,984.12
2022	1,955.33	0.43	0.00	1,966.18
2023	1,779.99	0.40	0.00	1,789.86
Total	8,071.21	1.97	0.00	8,113.56
30-Year Amortization of Construction Emissions				270.45

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix C for complete results.
The emissions summary assumes that all heavy-duty helicopter use would occur in in year 2020.

As shown in Table 3.6-6, the estimated total GHG emissions during construction of would be approximately 8,114 MT CO_2e over the construction period. Estimated proposed project-generated construction emissions amortized over 30 years would be approximately 270 MT CO_2e per year. As with proposed project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the proposed project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. As previously discussed, the SCAQMD significance threshold for the proposed project is 3,000 MT CO_2e per year. The proposed project would not exceed this threshold. Because proposed project construction emissions fall below this threshold and because construction would be a temporary source of GHG emissions, the proposed project would not generate GHG emissions that would have a significant impact on the environment. Impacts would be **less than significant**.

Operation

As discussed in Chapter 2 of this EIR, operational activities would be conducted to ensure reliable service. Proposed maintenance activities for the proposed 230 kV transmission would be similar in scope and scale to the maintenance activities conducted for the existing line that would be removed. Therefore, the project's operational activities would be similar to existing baseline conditions, as would the associated GHG emissions. As such, project operation and maintenance would not create a new source of GHG emissions with the potential to have a significant impact on the environment, and **no impact** would occur.

Threshold B: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Consistency with the City of Los Angeles' Sustainable City Plan

As discussed in Section 3.6.2, the Sustainable City Plan is not a qualified GHG reduction plan according to CEQA Guidelines Section 15183.5 and thus cannot be used in a cumulative impacts analysis to determine the significance of GHG impacts under CEQA. Therefore, this discussion of consistency is for informational purposes only. Table 3.6-7

provides an overview of the measures and goals within the Sustainable City Plan and the proposed project's consistency with each measure and goal. As shown in Table 3.6-7, the proposed project would not conflict with any of the GHG reduction measures or goals within the Sustainable City Plan and thus is consistent with the plan.

Table 3.6-7. Proposed Project Consistency with the Sustainable City Plan Greenhouse Gas Emission Reduction Strategies

Sustainable City Plan Measure	Proposed Project Consistency
Water	
Reduce LADWP purchases of imported water by 50% by 2025, and source 50% of water locally by 2035.	Does not apply. The proposed project would not inhibit LADWP from reducing imported water purchases or sourcing water locally.
Reduce average per capita water use by 22.5% by 2025 and 25% by 2035.	Does not apply. The proposed project would not inhibit the City of Los Angeles (City) from reducing the per capita water use within the City.
Solar Power	
Increase cumulative total megawatts (MW) of local solar photovoltaic power to 900–1,500 MW by 2025 and 1,500-1,800 MW by 2035.	Does not apply. The proposed project would not inhibit the City from increasing the use of local solar power within the City.
Increase cumulative total MW of energy storage capacity to at least 1,654–1,750 MW by 2025.	Does not apply. The proposed project would not inhibit the City from increasing energy storage capacity.
Energy Efficient Buildings	
Reduce energy use per square foot below 2013 baseline for all building types by at least 14% by 2025 and 30% by 2035.	Does not apply. The proposed project would not inhibit the City from reducing the energy use per square foot in buildings within the City.
Use energy efficiency to deliver 15% of all Los Angeles's projected electricity needs by 2020.	Does not apply. The proposed project would not inhibit the City from increasing energy efficiency within the City.
GHGs	
Reduce GHG emissions below 1990 baseline by at least 45% by 2025, 60% by 2035, and 80% by 2050.	Consistent. While the project would result in criteria GHG emissions during construction, these effects would be temporary. In the long term, the proposed project would enable LADWP to transport additional renewable energy supplies to areas of demand in the Los Angeles basin, thereby reducing reliance on fossil fuel–powered generating stations. Reduced reliance on fossil fuel–powered generating stations reduces GHG emissions.
Improve GHG efficiency of Los Angeles's economy from 2009 levels by 55% by 2025 and 75% by 2035.	Consistent. The proposed project would assist the City in meeting its goals by allowing increased transmission of renewable energy to the City.
Influence national and global action through the leadership of Los Angeles and other cities on climate change.	Does not apply. The proposed project would not inhibit the City from influencing action on climate change.
Have no ownership stake in coal-fired power plants by 2025.	Consistent. The proposed project would assist the City in shifting away from coal power plants by allowing LADWP to source more energy from renewable energy sources.
Waste	
Increase landfill diversion rate to at least 90% by 2025 and 95% by 2035.	Consistent. The proposed project would divert as much waste during construction as feasible, in accordance with state law. The proposed project would not generate additional waste during operation relative to existing conditions.

Table 3.6-7. Proposed Project Consistency with the Sustainable City Plan Greenhouse Gas Emission Reduction Strategies

Sustainable City Plan Measure	Proposed Project Consistency
Increase proportion of waste production and recyclable commodities productively reused and/or repurposed within Los Angeles County to at least 25% by 2025 and 50% by 2035.	Consistent. The transmission towers that are removed would be transported to a steel salvage facility, thereby supporting reuse of construction debris.

Source: City of Los Angeles 2015.

Consistency **with the SCAG's 2016–**2040 Regional Transportation Plan

SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. The 2016 RTP/SCS is not directly applicable to the proposed project because the underlying purpose of the 2016 RTP/SCS is to provide direction and guidance by making the best transportation and land use choices for future development. However, the major goals of the 2016 RTP/SCS are outlined in Table 3.6-8, along with a description of project consistency.

Table 3.6-8. Project Consistency with the SCAG 2016 RTP/SCS

RTP/SCS Measure	Proposed Project Consistency
Preserve the Transportation System We Already Have	Does not apply. The project would not inhibit SCAG from preserving the existing transportation system.
Expand Our Regional Transit System to Give People More Alternatives to Driving Alone	Does not apply. The project would not inhibit SCAG from expanding the regional transportation system.
Expand Passenger Rail	Does not apply. The project would not inhibit SCAG from expanding the passenger rail system.
Improve Highway and Arterial Capacity	Does not apply. The project would not inhibit SCAG from improving highway and arterial capacity.
Manage Demands on the Transportation System	Does not apply. The project would not inhibit SCAG from managing the demands on the transportation system.
Optimize the Performance of the Transportation System	Does not apply. The project would not inhibit SCAG from optimizing the performance of the transportation system.
Promoting Walking, Biking and Other Forms of Active Transportation	Does not apply. The project would not inhibit SCAG from promoting walking, biking, and other forms of active transportation.
Strengthen the Regional Transportation Network for Goods Movement	Does not apply. The project would not inhibit SCAG from strengthening the regional transportation network for goods movement.
Leverage Technology	Does not apply. The project would not inhibit SCAG from leveraging technology for the transportation system.
Improve Airport Access	Does not apply. The project would not inhibit SCAG from improving airport access.
Focus New Growth Around Transit	Does not apply. The project would not inhibit SCAG from focusing new growth around transit corridors.

Table 3.6-8. Project Consistency with the SCAG 2016 RTP/SCS

RTP/SCS Measure	Proposed Project Consistency
Improve Air Quality and GHG	Consistent. While the project would result in criteria air pollutant and GHG emissions during construction, these effects would be temporary. In the long term, the proposed project would enable LADWP to transport additional renewable energy supplies to areas of demand in the Los Angeles basin, thereby reducing reliance on fossil fuel–powered generating stations. Reduced reliance on fossil fuel–powered generating stations improves air quality and reduces GHG emissions.
Preserve Natural Lands	Consistent. The proposed project would minimize the environmental disturbance of transmission upgrades by constructing improvements within an existing transmission corridor and within existing switching stations, thereby avoiding and minimizing effects to natural lands.

Source: SCAG 2016.

As shown in Table 3.6-8, the project would not conflict with the goals within SCAG's 2016 RTP/SCS.

Consistency with **CARB's Scoping Plan**

As discussed in Section 3.6.2, the Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.[6] Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. As such, project consistency with these measures is addressed in this section. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products), changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., low carbon fuels), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 3.6-9 highlights measures that have been, or will be, developed under the Scoping Plan and the proposed project's consistency with Scoping Plan measures. The proposed project would comply will all applicable regulations adopted in furtherance of the Scoping Plan to the extent required by law.

[6] The Final Statement of Reasons for amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009b).

Table 3.6-9. Proposed Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Transportation Sector		
Advanced Clean Cars	T-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Low-Carbon Fuel Standard	T-2	Consistent. Motor vehicles driven by construction personnel would use compliant fuels.
Regional Transportation-Related GHG Targets	T-3	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Advanced Clean Transit	Proposed	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Last-Mile Delivery	Proposed	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Reduction in VMT	Proposed	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing	T-4	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Ship Electrification at Ports (Shore Power)	T-5	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Goods Movement Efficiency Measures 1. Port Drayage Trucks 2. Transport Refrigeration Units Cold Storage Prohibition 3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification 4. Goods Movement Systemwide Efficiency Improvements 5. Commercial Harbor Craft Maintenance and Design Efficiency 6. Clean Ships 7. Vessel Speed Reduction	T-6	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Heavy-Duty Vehicle GHG Emission Reduction • Tractor-Trailer GHG Regulation • Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Proposed Project	T-8	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Medium and Heavy-Duty GHG Phase 2	Proposed	Not applicable. The proposed project would not prevent CARB from implementing this measure.

Table 3.6-9. Proposed Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
High-Speed Rail	T-9	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Energy Efficiency (Natural Gas)	CR-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Combined Heat and Power	E-2	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Renewable Portfolios Standard (33% by 2020)	E-3	Consistent. The proposed project would assist LADWP in meetings its RPS goals by increasing the amount of energy it can source from renewables.
Renewable Portfolios Standard (50% by 2050)	Proposed	Consistent. The proposed project would assist LADWP in meetings its RPS goals by increasing the amount of energy it can source from renewables.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Water Sector		
Water Use Efficiency	W-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Water Recycling	W-2	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Water System Energy Efficiency	W-3	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Reuse Urban Runoff	W-4	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Renewable Energy Production	W-5	Not applicable. While the proposed project would transport additional renewable energy supplies to areas of demand, it would not increase renewable energy production.
Green Buildings		
State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.

Table 3.6-9. Proposed Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Industry Sector		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Oil and Gas Extraction GHG Emission Reduction	I-2	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Reduce GHG Emissions by 20% in Oil Refinery Sector	Proposed	Not applicable. The proposed project would not prevent CARB from implementing this measure.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Refinery Flare Recovery Process Improvements	I-4	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Work with the local air districts to evaluate amendments to their existing leak detection and repair rules for industrial facilities to include methane leaks	I-5	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Recycling and Waste Management Sector		
Landfill Methane Control Measure	RW-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Increasing the Efficiency of Landfill Methane Capture	RW-2	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Mandatory Commercial Recycling	RW-3	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Increase Production and Markets for Compost and Other Organics	RW-3	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Anaerobic/Aerobic Digestion	RW-3	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Extended Producer Responsibility	RW-3	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Environmentally Preferable Purchasing	RW-3	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Forests Sector		
Sustainable Forest Target	F-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.
High GWP Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.

Table 3.6-9. Proposed Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
SF_6 Limits in Non-Utility and Non-Semiconductor Applications	H-2	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Reduction of Perfluorocarbons (PFCs in Semiconductor Manufacturing	H-3	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Limit High GWP Use in Consumer Products	H-4	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	Not applicable. The proposed project would not prevent CARB from implementing this measure.
SF_6 Leak Reduction Gas Insulated Switchgear	H-6	Not applicable. The proposed project would not prevent CARB from implementing this measure.
40% reduction in methane and hydrofluorocarbon (HFC) emissions	Proposed	Not applicable. The proposed project would not prevent CARB from implementing this measure.
50% reduction in black carbon emissions	Proposed	Not applicable. The proposed project would not prevent CARB from implementing this measure.
Agriculture Sector		
Methane Capture at Large Dairies	A-1	Not applicable. The proposed project would not prevent CARB from implementing this measure.

Source: CARB 2008 and CARB 2017.
Notes: CARB = California Air Resources Board; CCR = California Code of Regulations; GHG = greenhouse gas; GWP = global warming potential; SB = Senate Bill; SF_6 = sulfur hexafluoride

Based on the analysis in Table 3.6-9, the proposed project would be consistent with or would not interfere with the strategies and measures in the Scoping Plan.

The proposed project would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in EO S-3-05 and SB 32. As discussed in Section 3.6.2, EO S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 32 establishes a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-3-05. This is confirmed in the Second Update, which states (CARB 2017):

> The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, SB 32, and AB 197.

The proposed project would not interfere with implementation of any of the previously described GHG reduction goals for 2030 or 2050, because the proposed project would not exceed the SCAQMD's recommended screening threshold of 3,000 MT CO_2e per year (SCAQMD 2008). Because the proposed project would not exceed the threshold, this analysis provides support for the conclusion that the proposed project would not impede the state's trajectory toward the previously described statewide GHG reduction goals for 2030 or 2050. Furthermore, as discussed previously, the proposed project is consistent with or would not interfere with implementation of the GHG emission reduction measures in the Scoping Plan and, therefore, would not conflict with the state's trajectory toward future GHG reductions.

With respect to future GHG targets under SB 32 and EO S-3-05, CARB has made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-3-05's 80% reduction target by 2050. This legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets. In addition, the specific path to compliance for the state in regards to the long-term, future goals will likely require development of new technology or other changes that are not currently known or available. As such, identifying ways that the project would be consistent with future goals would be speculative and cannot be meaningfully discussed at this time. However, the proposed project would assist in meeting

the City's contribution to GHG emission reduction targets and increased renewable energy portfolios in California, which would assist in meeting current and future GHG targets.

Based on the considerations previously outlined, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, because the proposed project would emit some GHGs during construction impacts would be **less than significant**.

3.6.6 Mitigation Measure(s)

Impacts were determined to be less than significant and, therefore, no mitigation measures are required.

3.6.7 Level of Significance After Mitigation

Impacts were determined to be less than significant and no mitigation measures are required.

3.6.8 References Cited

24 CCR Part 6. California Energy Code. Sacramento, California: California Building Standards Commission. March 2010. ISBN 978-1-58001-976-7. Effective January 1, 2011. Accessed August 2016. http://www.documents.dgs.ca.gov/bsc/Title_24/documents/2010/Part%206/2010-CA-Energy.pdf.

CAPCOA. 2017. *California Emissions Estimator Model (CalEEMod) User's Guide Version 2016.3.2* Prepared by Trinity Consultants and the California Air Districts. September 2016. http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2.

CARB (California Air Resources Board). 2008. *Climate Change Scoping Plan: A Framework for Change*. December 2008. http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm.

CARB. 2011. *The Advanced Clean Cars Program*. Accessed August 2018. https://www.arb.ca.gov/msprog/acc/acc.htm.

CARB. 2014. *First Update to the Climate Change Scoping Plan Building on the Framework Pursuant to AB 32 – The California Global Warming Solutions Act of 2006*. May 2014. Accessed August 2017. http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

CARB. 2017. *The 2017 Climate Change Scoping Plan Update*. January 20. Accessed July 2017. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

CARB. 2018a. *California Greenhouse Gas Inventory for 2000–2016 by Category as Defined in the 2008 Scoping Plan*. Last updated June 22, 2018. https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-16.pdf.

CARB. 2018b. "Glossary of Terms Used in Greenhouse Gas Inventories." June 22, 2018. Accessed August 2018. http://www.arb.ca.gov/cc/inventory/faq/ghg_inventory_glossary.htm.

CAT (California Climate Action Team). 2006. *Climate Action Team Report to the Governor Schwarzenegger and the Legislature*. Sacramento, California. March 2006. Accessed August 2017. http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF.

CAT. 2010. *Climate Action Team Biennial Report*. Sacramento, California. April 2010. Accessed August 2016. http://www.energy.ca.gov/2010publications/CAT-1000-2010-004/CAT-1000-2010-004.PDF.

CCCC (California Climate Change Center). 2012. *Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California*. July 2012. Accessed August 2017. http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf.

CEC (California Energy Commission). 2015. 2016 Building Energy Efficiency Standards – Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.

CEC (California Energy Commission). 2018. 2019 Building Energy Efficiency Standards Fact Sheet. March 2018. https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf.

City of Los Angeles. 2015. *Sustainable City Plan*. April. Accessed October 2017. https://www.lamayor.org/sites/g/files/wph446/f/landing_pages/files/The%20pLAn.pdf.

City of Los Angeles. 2017. *First Annual Report 2015–2016*. Accessed October 2017. https://www.lamayor.org/sites/g/files/wph446/f/landing_pages/files/Plan-annual%20update-online.pdf.

City of Santa Clarita 2012. *Climate Action Plan*. August 2012. http://greensantaclarita.com/files/2012/10/APPROVED-CAP-AUGUST-2012.pdf.

CNRA (California Natural Resources Agency). 2009a. *2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008*. Accessed August 2017. http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf.

CNRA. 2009b. *Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97*. December 2009. http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf.

CNRA. 2014. *Safeguarding California: Reducing Climate Risk*. An Update to the 2009 California Climate Adaptation Strategy. July 2014. Accessed May 2017. http://resources.ca.gov/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf.

CRNA. 2016. Safeguarding California: Implementing Action Plans. March 2016. http://resources.ca.gov/docs/climate/safeguarding/Safeguarding%20California-Implementation%20Action%20Plans.pdf.

CNRA. 2017. Draft Report Safeguarding California Plan: 2017 Update, California's Climate Adaptation Strategy. May 2017. http://resources.ca.gov/wp-content/uploads/2017/05/DRAFT-Safeguarding-California-Plan-2017-Update.pdf.

CNRA. 2018. *Safeguarding California Plan: 2018 Update*. January. Accessed February 2018. http://resources.ca.gov/docs/climate/safeguarding/update2018/safeguarding-california-plan-2018-update.pdf.

County of Los Angeles 2015. *Community Climate Action Plan.* August 2015. http://planning.lacounty.gov/assets/upl/project/ccap_final-august2015.pdf.

CPUC (California Public Utilities Commission). 2013. "California's Zero Net Energy Policies and Initiatives." September 18, 2013. http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=10718.

CPUC (California Public Utilities Commission). 2015. Renewables Portfolio Standard. SB 350 Clean Energy and Pollution Reduction Act of 2015. Approved October 7, 2015.

EPA (U.S. Environmental Protection Agency). 2010. *EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks*. April 2010. Accessed May 2017. https://www3.epa.gov/otaq/climate/regulations/420f10014.pdf.

EPA. 2016. "Glossary of Climate Change Terms." August 9, 2016. Accessed May 2017. https://www3.epa.gov/climatechange/glossary.html.

EPA. 2017. "Climate Change." Last updated January 19, 2017. Accessed January 2017. https://www.epa.gov/climatechange.

EPA. 2018. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990–2016*. EPA 430-R-18-003. https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf.

EPA and NHTSA (U.S. Environmental Protection Agency and National Highway Traffic Safety Administration). 2016. Regulations and Standards: Heavy-Duty. EPA and DOT Finalize Greenhouse Gas and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles. Last updated on August 30, 2016. https://www3.epa.gov/otaq/climate/regs-heavy-duty.htm.

IPCC (Intergovernmental Panel on Climate Change). 1995. *IPCC Second Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the U.N. Framework Convention on Climate Change*.

IPCC. 2007. *IPCC Fourth Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the U.N. Framework Convention on Climate Change*.

IPCC. 2013. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. http://www.ipcc.ch/report/ar5/wg1.

IPCC. 2014. *Climate Change 2014 Synthesis Report: A Report of the Intergovernmental Panel on Climate Change.* Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Accessed August 2017. http://www.ipcc.ch/report/ar5/syr/.

OPR (California Governor's Office of Planning and Research). 2008. *Technical Advisory – CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*. http://opr.ca.gov/docs/june08-ceqa.pdf.

PBL Netherlands Environmental Assessment Agency. 2017. Trends in Global CO_2 and Total Greenhouse Gas Emissions, 2017 Report. Accessed June 2018.

SCAG (Southern California Association of Governments). 2012. *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy*. Adopted April 2012. Accessed August 2017. http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx.

SCAG. 2016. *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*. Adopted April 7, 2016. Accessed August 2017. http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

SCAQMD (South Coast Air Quality Management District). 2008. *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*. October 2008.

SCAQMD. 2010. "Greenhouse Gases CEQA Significance Thresholds Working Group Meeting No. 15." September 28, 2010. Accessed August 2017. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2.

Under 2 Coalition. 2017. Under 2 Memorandum of Understanding. Updated September 2017. Accessed September 2017. http://under2mou.org/wp-content/uploads/2015/05/Under2-Two-Pager-September-2017.pdf.

3.7 Noise

This section describes the noise-sensitive resources present in the project area; discusses applicable federal, state, and regional regulations pertaining to noise; and evaluates the potential effects on noise associated with development of the proposed project.

Comments received in response to the Notice of Preparation (see Appendix A) included concerns regarding the potential for the proposed upgrade of the line from 115 kV to 230 kV to result in increased noise from the transmission lines.

Information contained in this section is based on a noise measurement survey and noise analysis of the project area. Other sources consulted are listed in Section 3.7.8.

3.7.1 Existing Conditions

This section describes the existing conditions in the project area as they pertain to noise and also identifies resources that could be affected by the proposed project.

Noise Concepts

Noise is generally defined as loud, unexpected, or undesired sound, typically associated with human activity. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. The definition of noise as unwanted sound implies that it has an adverse effect on people and their environment.

Sound is measured in terms of intensity, which describes the sound's loudness and is measured in decibels (dB); frequency or pitch, measured in cycles per second or hertz; and duration of sound. Sound is composed of various frequencies; however, the human ear does not respond to all frequencies, being less sensitive to very low and high frequencies than to medium frequencies that correspond with human speech. Sound level meters adjust for the weight the human ear gives to certain frequencies, applying a correction to each frequency range to approximate the human ear's sensitivity within each range. This is called "A-weighting" and is commonly used in measurements of community environmental noise. The A-weighted decibel (dBA) is determined to be the most appropriate unit of measure for community noise.

The unit of measure for the cumulative effect of community noise is the community noise equivalent level (CNEL), which is the average noise level for a 24-hour period. The CNEL is often used to describe the relationship of a continuous noise source, such as traffic, to the desirable ambient noise level (normal and existing noise level). The CNEL is adjusted to reflect the greater sensitivity to noise during evening and nighttime hours, with a 5 dBA penalty assigned to noise between 7 p.m. and 10 p.m., and a 10 dBA penalty assigned to noise between 10 p.m. and 7 a.m. Due to fluctuations in community noise over time, a single measurement called the equivalent sound level (L_{eq}) is often used to describe the time-varying character of

community noise. L_{eq} is the energy-averaged A-weighted sound level during a measured time interval, and it is equal to the level of a continuous, steady sound containing the same total acoustical energy over the averaging time period as the actual time-varying sound.

To respond to the human ear's sensitivity to sound, the range of audible sounds exist on a logarithmic scale that takes into account the large differences in audible sound intensities. On this scale, for example, a sound level of 0 dBA is approximately the threshold of human hearing. Normal speech has a sound level of approximately 60 dBA. Sound levels above approximately 120 dBA begin to be felt inside the human ear as discomfort and eventually as pain at slightly higher levels. In the context of community noise (i.e., outside of a listening laboratory or other controlled conditions), the minimum change in the sound level of individual events that an average human ear can detect is approximately 3 dBA. A 10 dBA increase is normally perceived as a doubling of sound.

There are three conceptual components to noise: the source, the transmission path, and the receiver. Noise can be reduced by reducing noise at its source; by lengthening or interrupting the transmission path through diversion, absorption, or dissipation; or by protecting the receiver through noise insulation. The most efficient and effective means of abating noise is to reduce noise at its source. The source noise can be controlled through regulation, such as following restrictions outlined in noise ordinances, muffling techniques, or soundproofing. The transmission path can be interrupted by creating a buffer between the source and the receiver, such as a noise wall, earth embankment, or building. The receiver can be protected from noise impacts through insulation, building orientation, or shielded areas.

Noise sources can be classified in two forms: (1) point sources, such as stationary equipment (pumps), and (2) line sources, such as a roadway with a large number of pass-by sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6 dBA for each doubling of distance from the source to the receptor. For example, a 60 dBA noise level measured at 50 feet from a point source would be 54 dBA at 100 feet from the source and 48 dBA at 200 feet from the source. Sound generated by a line source typically attenuates at a rate of 3 dBA and 4.5 dBA per doubling of distance from the source to the receptor for hard and soft sites, respectively. Typical sound levels generated by various activities are indicated in Table 3.7-1.

Table 3.7-1. Typical Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet fly-over at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	

Table 3.7-1. Typical Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
		Large business office
Quiet urban daytime	50	Dishwasher next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013.

Sound levels can also be attenuated by built or natural barriers. Intervening noise barriers, such as solid walls or berms, typically reduce noise levels by 5 to 10 dBA. Structures can also provide noise reduction by insulating interior spaces from outdoor noise. The exterior-to-interior noise attenuation provided by typical California building structures ranges from 15 to 25 dBA with windows open and closed, respectively. Acoustically designed enclosures and buildings can provide up to approximately 50 dBA of noise reduction, depending on the noise abatement treatments.

Vibration Concepts

Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground. The strength of groundborne vibration diminishes (or "attenuates") fairly rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily "sandy" soils) do not. Vibration tolerance typically depends on the type of structures that are affected. Structural response to vibration is typically evaluated in terms of peak particle velocity (ppv), which is often used since it is related to the stresses that are experienced by the buildings. Various general standards are contained in the International Standards Organization's Standards 3945, 4866, and 7626-1. Limits set by these standards indicate a low probability of structural damage occurring to common structures at a peak particle velocity of 2.0 inches per second. Older (and non-reinforced) masonry structures would have a limit of 0.75 to 1.0 inch per second (Caltrans 2013). The Federal Transit Administration identifies a vibration damage threshold criterion of 0.20 inch per second for non-engineered timber and masonry buildings (i.e., fragile buildings), or 0.12 inch per second for buildings extremely susceptible to vibration (i.e., fragile historic buildings) (DOT 2006).

Project Location

The project would be located within an established transmission corridor, referred to as the "South of Haskell Corridor," and within two existing electrical switching stations (Haskell Canyon Switching Station and Sylmar Switching Station). The South of Haskell Corridor has been used for electricity transmission since the early 1900s. The corridor is an LADWP right-of-way, consisting of LADWP-owned land and private property that is 250 feet in width and contains three existing transmission lines: a 500 kV DC line, the 115 kV line that is proposed for replacement as

part of this project, and 230 kV lines supported by 4-circuit towers. All three existing transmission lines are supported by lattice transmission towers. Representative images of the existing right-of-way are shown in Figure 2-2 of this EIR.

Existing Noise Levels

Noise-sensitive receptors are typically land uses such as residences, schools, hospitals, religious facilities, theaters, concert halls, libraries, and parks. Along the project alignment, noise-sensitive uses include residences, schools, and parks. Currently, the project site and surrounding area are subject to traffic noise associated with adjacent roadways, including San Fernando Road, Centre Point Parkway, and Bouquet Canyon Road; in addition, noise is generated by the adjacent schools, parks, businesses, and nearby residences.

Noise measurements were conducted in the project area on June 12, 2018, to characterize the existing noise environment. The noise measurements were made using a Piccolo Integrating Sound Level Meter equipped with a 0.5-inch, pre-polarized condenser microphone with pre-amplifier. The sound level meter meets the current American National Standards Institute standard for a Type 2 (General Use) sound level meter. The calibration of the sound level meter was verified before and after the measurements, and the measurements were conducted with the microphone positioned approximately 5 feet above the ground.

Five short-term noise measurements were conducted, each 15 minutes in duration. The measurement locations that were selected represent key potential sensitive receptors or sensitive land uses adjacent to the project site. The noise measurement locations are shown on Figure 3.7-1; the average noise levels at the locations are provided in Table 3.7-2. As shown, the locations are labeled as ST1 through ST5, for identification in this section. As shown in Table 3.7-2, existing energy-averaged noise levels (L_{eq}) range from 57 to 64 dBA at representative locations adjacent to the project alignment. The primary noise sources generally consisted of traffic along the adjacent roads; other noise sources included noise from landscaping activities, birds, and other common community noises; these sources, and the measured noise levels, are consistent with and typical of suburban residential neighborhoods.

Table 3.7-2. Short-Term Noise Measurement Summary

Receptors	Location	Date	Time	L_{eq} (dBA)	L_{max} (dBA)
ST1	Residences east of project alignment, at west end of Canyon Crest; east of existing structure 249-2 and north of proposed structure 13-3	June 12, 2018	10:45 a.m.–11:00 a.m.	58.6	69.8
ST2	Residences west of project alignment, west of existing structure 248-1 and proposed structure 12-3	June 12, 2018	11:16 a.m.–11:31 a.m.	56.7	73.4
ST3	Santa Clarita Aquatic Center, east of project alignment, east of proposed structure 6-2.	June 12, 2018	12:09 p.m. – 12:24 p.m.	62.3	77.1
ST4	Residences west of project alignment, northwest of proposed structure 4-2	June 12, 2018	12:47 p.m. – 1:02 p.m.	56.8	72.4
ST5	Residences east of project alignment, southeast of structure 2-4.	June 12, 2018	1:16 p.m. – 1:31 p.m.	64.3	84.6

Source: Appendix F
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); L_{max} = maximum sound level during the measurement interval; ST = short term

3.7.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal noise standards that would directly regulate environmental noise during construction and operation of the proposed project. However, with regard to construction worker safety, the Office of Safety and Health Administration (OSHA) regulations would safeguard the hearing of workers exposed to occupational noise.

Federal Transit Administration

Though not regulatory in nature, the U.S. Department of Transportation Federal Transit Administration (DOT) has established vibration guidance for various land uses based on their potential for human annoyance and activity disruption. In general, and according to DOT guidelines, groundborne vibration of 75 velocity decibels (VdB) or greater would be considered potentially annoying. Vibration of 85 VdB or greater would likely be highly annoying and disruptive for most land uses (DOT 2006). (VdB is a unit used to measure and describe vibration.) These guidelines are generally used to evaluate the significance of operational effects from transit projects. However, these guidelines are referenced in this EIR for the purposes of quantitatively describing the levels of vibration that are typically considered disruptive.

Typically, potential building and structural damages are the foremost concern when evaluating the impacts of construction-related vibration. Table 3.7-3 summarizes the DOT's vibration guidelines for building and structural damage.

Table 3.7-3. Groundborne Vibration Damage Potential

Building Category	Vibration Damage (in/sec PPV)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: DOT 2006.
Notes: PPV = peak particle velocity

State

Government Code Section 65302(g)

California Government Code Section 65302(g) requires the preparation of a noise element in a general plan, which must identify and appraise the noise problems in the community. The noise element must recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall quantify, to the extent practicable, current and projected noise levels for the following sources in the general plan's planning area:

- Highways and freeways
- Primary arterials and major local streets

- Passenger and freight on-line railroad operations and ground rapid transit systems
- Aviation and airport-related operations
- Local industrial plants
- Other ground stationary noise sources contributing to the community noise environment

California General Plan Guidelines

The California General Plan Guidelines, published by the Governor's Office of Planning and Research (OPR), provides guidance for the acceptability of specific land use types within areas of specific noise exposure. Table 3.7-4 presents guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. OPR guidelines are advisory in nature. Local jurisdictions, including the County of Los Angeles, City of Los Angeles, and City of Santa Clarita, have the responsibility to set specific noise standards based on local conditions.

Table 3.7-4. Land Use Compatibility for Community Noise Environments

	Community Noise Exposure (CNEL)			
	Normally Acceptable[1]	*Conditionally Acceptable*[2]	*Normally Unacceptable*[3]	*Clearly Unacceptable*[4]
Residential-low density, single-family, duplex, mobile homes	50–60	55–70	70–75	75–85
Residential – multiple-family	50–65	60–70	70–75	70–85
Transit lodging – motel, hotels	50–65	60–70	70–80	80–85
Schools, libraries, churches, hospitals, nursing homes	50–70	60–70	70–80	80–85
Auditoriums, concert halls, amphitheatres	NA	50–70	NA	65–85
Sports arenas, outdoor spectators sports	NA	50–75	NA	70–85
Playgrounds, neighborhood parks	50–70	NA	67.5–77.5	72.5–85
Golf courses, riding stables, water recreation, cemeteries	50–70	NA	70–80	80–85
Office buildings, business commercial and professional	50–70	67.5–77.5	75–85	NA
Industrial, manufacturing, utilities, agriculture	50–75	70–80	75–85	NA

Source: OPR 2003

Notes: CNEL = community noise equivalent level; NA = not applicable

1 Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

2 Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

3 Normally Unacceptable: New construction or development should be discouraged. If new construction of development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise-insulation features must be included in the design.

4 Clearly Unacceptable: New construction or development should generally not be undertaken.

Local

The proposed project alignment is located within the cities of Los Angeles and Santa Clarita, as well as the County of Los Angeles (County). No nearby noise-sensitive receivers within the County with the potential to be impacted by the proposed project were identified. As such, this discussion of local regulations focuses on the two jurisdictions with sensitive receptors that could be potentially affected by the proposed project.

City of Los Angeles

City of Los Angeles Municipal Code

The City of Los Angeles regulates noise through several sections of its municipal code. These include Section 41.40 (Noise Due to Construction, Excavation Work – When Prohibited), which establishes time prohibitions on noise generated by construction activity; Section 112.04 (Powered Equipment Intended for Repetitive Use in Residential Areas and Other Machinery, Equipment and Devices), which prohibits the use of loud machinery and/or equipment within 500 feet of residences and prohibits noise from machinery, equipment, or other devices that would result in an increase of more than 5 dB above the ambient noise level at residences[1]; and Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools), which establishes maximum noise levels for powered equipment and powered hand tools (i.e., 75 dBA at a distance of 50 feet for construction, industrial, and agricultural equipment between the hours of 7:00 a.m. and 10:00 p.m.). According to Section 41.40, no construction activity that might create loud noises in or near residential areas or buildings shall be conducted between the hours of 9:00 p.m. and 7:00 a.m. on weekdays, before 8:00 a.m. or after 6:00 p.m. on Saturdays, or at any time on Sundays or national holidays.

City of Santa Clarita

City of Santa Clarita Municipal Code

11.44.040 Noise Limits

Chapter 11.44.040 establishes operational noise standards in various land use zones during daytime (7:00 a.m.–10:00 p.m.) and nighttime (10:00 p.m.–7:00 a.m.) periods. For residential zones, the base noise levels are 65 dBA during the daytime period and 55 dBA during the nighttime period. For commercial and manufacturing zones, the base noise levels are 80 dBA during the daytime period and 70 dBA during the nighttime period.

For repetitive impulsive noise or steady, whining, screeching, or humming noise, the base noise levels noted above are reduced by 5 dBA. If the noise occurs for more than 5 minutes but less than 15 minutes per hour during the daytime period, the above base noise levels are raised by 5 dBA. If the noise occurs for more than 1 minute but less than 5 minutes per hour during the daytime period, the above base noise levels are raised by 10 dBA. If the noise occurs for less than 1 minute per hour during daytime period, the above base noise levels are raised by 20 dBA.

[1] Applies to operational activities, as opposed to construction (i.e., temporary) activities.

11.44.070 Special Noise Sources - Machinery[2]

Any noise level from the use or operation of any machinery, equipment, pump, fan, air conditioning apparatus, refrigerating equipment, motor vehicle, or other mechanical or electrical device, or in repairing or rebuilding any motor vehicle, which exceeds the noise limits as set forth in Section 11.44.040 at any property line, or, if a condominium or rental units, within any condominium unit or rental unit within the complex, shall be a violation of the noise code.

11.44.080 Special Noise Sources – Construction and Building

Pursuant to the City's Municipal Code Section 11.44.080, no person may engage in any construction work that requires a building permit from the City on sites within 300 feet of a residentially zoned property, except between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 6:00 p.m. on Saturday. No work may be performed on the following public holidays: New Year's Day, Independence Day, Thanksgiving, Christmas Day, Memorial Day, and Labor Day. The City of Santa Clarita Public Works Department may issue a permit for work to be done "after hours" provided that containment of construction noises is provided.

3.7.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to noise are based on Appendix G of the CEQA Guidelines. Through the analysis in the Initial Study (see Appendix A), it was determined that the proposed project would not expose people to excessive noise levels associated with a public airport or a private airstrip (i.e., Thresholds E and F). As such, these issues are not further analyzed in the EIR. Based on the remaining thresholds, implementation of the proposed project would have a significant impact related to noise if it would:

A. Result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

B. Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

C. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

D. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

3.7.4 Methodology

The noise assessment quantifies construction and operational noise generation and the resulting noise levels at noise-sensitive receptors in the project vicinity. Assumptions regarding construction activities, construction equipment, and duration of construction activities are based on information from LADWP's construction design and engineering specialists and from similar construction projects. The Federal Highway Administration's Roadway Construction

[2] Applies to operational activities, as opposed to construction (i.e., temporary) activities.

Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at a typical distance to the nearest noise-sensitive land uses. Input variables for RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two excavators, a loader, a dump truck), the duty cycle for each piece of equipment (e.g., percentage of hours the equipment typically works per day), and the distance from the noise-sensitive receiver. The RCNM has default duty cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty cycle values were utilized for this analysis. Special construction equipment and methods such as the use of helicopters is addressed separately. Short-term noise impacts were assessed by comparing construction noise levels to ambient noise levels in the project area and by evaluating the proposed project's compliance with applicable municipal codes. Groundborne vibration was assessed using guidance and methodologies from DOT (DOT 2006).

For operational noise effects, ambient noise measurements were conducted to quantify the existing daytime noise environment in the project area. The levels of operational noise from transmission lines were estimated using noise calculations for the existing and proposed transmission lines within the project alignment.

3.7.5 Impact Analysis

Threshold A: Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction Noise

Construction Vehicles and Equipment

Construction is expected to take approximately 4 years, beginning in 2019 and ending in 2023. During construction of the proposed project, activities would include (1) site preparation; (2) removing existing structures and conductors associated with the 115 kV line; (3) installing new transmission structures and conductors for the new 230 kV line; (4) switching station tie-ins and upgrades; and (5) site rehabilitation. These activities would be spread across numerous work areas along the alignment. For the most part, construction activities would require the use of standard construction equipment such as loaders, dozers, soil compaction equipment, and cranes. Additional equipment would include specialized stringing equipment as well as helicopters. The maximum number of daily workers within the alignment would be approximately 70 workers. Construction would generally occur on weekdays during the daytime. If necessary, weekend construction may also occur, and nighttime construction would be required for major roadway, freeway, and railroad crossings.

The range of maximum noise levels for various types of construction equipment at a distance of 50 feet is depicted in Table 3.7-5. The noise values represent maximum noise generation, or full-power operation of the equipment. Simultaneous operation of more than one piece of equipment would increase the sound level of the equipment operating individually. As an example, a loader and two dozers, all operating at full power and relatively close together, would generate a maximum sound level of approximately 90 dBA at 50 feet from their operating locations. As one increases the distance between equipment, and/or the separation of areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of separate noise sources added together. In addition, typical

equipment operating cycles may involve 2 minutes of full-power operation, followed by 3 or 4 minutes at lower levels. Noise in this analysis is usually expressed in terms of L_{eq}, which is the average sound level for any specific time period. L_{eq} is expressed in units of dBA. The L_{eq} from proposed project construction would generally be lower than the maximum noise levels expressed in Table 3.7-5, since maximum noise generation from construction would typically occur 50% of the time, at most. Noise levels from construction activities generally decrease at a rate of 6 dB per doubling of distance away from the activity.

Table 3.7-5. Construction Equipment Maximum Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Roller	74
Concrete vibrator	76
Pump	76
Saw	76
Backhoe	80
Air compressor	81
Generator	81
Compactor	82
Concrete pump	82
Crane, mobile	83
Concrete mixer	85
Dozer	85
Grader	85
Impact wrench	85
Loader	85
Pneumatic tool	85
Jackhammer	88
Truck	88
Paver	89

Source: DOT 2006.

The nearest off-site sensitive receptors to the project alignment are residences located in the Sylmar area (in the City of Los Angeles), adjacent to existing structures 248-3 and 248-4, which would be removed as part of this project. Several residences are located approximately 35 to 45 feet from existing structures 248-3 and 248-4, respectively, and approximately 120 to 140 feet from the corresponding replacement structure locations that are proposed nearby. Along the remainder of the project alignment, distances from noise-sensitive receivers to the nearest structure locations range from approximately 130 feet to 1,850 feet.

The Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at the nearest noise-sensitive land uses. RCNM is often used for non-roadway projects because the same types of equipment used for roadway projects are also used for other project types. Input variables for the RCNM consist of the receiver/land use type, the equipment type and number of each (e.g., two

graders, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage of hours the equipment typically works per day), and the distance between construction and the noise-sensitive receiver. No topographical or structural shielding was assumed in the modeling for this project. The RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns (FHWA 2008). Those default duty-cycle values were used for this noise analysis.

Using the Federal Highway Administration's RCNM construction noise model and construction information (types and number of construction equipment by phase), the estimated noise levels from construction were calculated and are shown in Table 3.7-6. The RCNM inputs and outputs are provided in Appendix F.

As presented in Table 3.7-6, the highest noise levels are predicted to occur at residences nearest to the existing and proposed transmission structures, when noise levels would be as high as 85 dBA L_{eq} to 87 dBA L_{eq} during removal of the existing transmission structure approximately 35 feet to 45 feet away. More typically, construction activity noise at the nearest receiver would range from approximately 52 dBA L_{eq} to 79 dBA L_{eq}. The existing daytime ambient noise levels for residential neighborhoods at these locations, as represented by the ST1 through ST5 measurements (see Table 3.7-2), ranged from approximately 57 to 64 dBA L_{eq}. As such, construction would temporarily increase noise levels at nearby sensitive receptors, relative to ambient noise levels under existing conditions.

Table 3.7-6. Construction Noise Modeling Summary Results

Receiver & Nearest Proposed Structure Location, by Construction Phase [1]	Construction Noise Level (dBA L_{eq})
Residences at Discovery Ridge Road (Santa Clarita) / Structure 1-3	*Nearest Receiver: 1,850 feet*
Removal of Existing Structure	52
Site Preparation	54
New Transmission Structure Installation	56
Residences at Phantom Trail (Santa Clarita) / Structure 2-1	*Nearest Receiver: 1,270 feet*
Removal of Existing Structure	56
Site Preparation	57
New Transmission Structure Installation	59
Residences at North Deer Springs Road (Santa Clarita)/Structure 2-4	*Nearest Receiver: 180 feet*
Removal of Existing Structure	73
Site Preparation	74
New Transmission Structure Installation	76
Residences at Bobwhite Circle (Santa Clarita) / Structure 3-2	*Nearest Receiver: 360 feet*
Removal of Existing Structure	66
Site Preparation	68
New Transmission Structure Installation	69
Residences at Urbandale Avenue (Santa Clarita) / Structure 3-4	*Nearest Receiver: 130 feet*
Removal of Existing Structure	75.3
Site Preparation	76.6
New Transmission Structure Installation	78.7

Table 3.7-6. Construction Noise Modeling Summary Results

Receiver & Nearest Proposed Structure Location, by Construction Phase [1]	Construction Noise Level (dBA L_{eq})
Residences at Sutters Pointe Drive (Santa Clarita) / Structure 4-2	*Nearest Receiver: 140 feet*
Removal of Existing Structure	74.6
Site Preparation	75.9
New Transmission Structure Installation	78
Residences at Alta Knoll Drive (Santa Clarita) / Structure 4-4	*Nearest Receiver: 265 feet*
Removal of Existing Structure	69.1
Site Preparation	70.4
New Transmission Structure Installation	72.5
Residences at Fairfield Way (Santa Clarita) / Structure 5-1	*Nearest Receiver: 700 feet*
Removal of Existing Structure	60.7
Site Preparation	61.9
New Transmission Structure Installation	64.1
Santa Clarita Aquatic Center (Santa Clarita) / Structure 6-2	*Nearest Receiver: 240 feet*
Removal of Existing Structure	70
Site Preparation	61.2
New Transmission Structure Installation	73.4
Golden Valley High School (Santa Clarita) / Structure 7-1	*Nearest Receiver: 550 feet*
Removal of Existing Structure	62.8
Site Preparation	64
New Transmission Structure Installation	66.1
Residences at Whitney Canyon Road (Santa Clarita) / Structure 9-4	*Nearest Receiver: 810 feet*
Removal of Existing Structure	59.4
Site Preparation	60.7
New Transmission Structure Installation	62.8
Residences at Nicklaus Drive (City of Los Angeles) / Structure 12-3	*Nearest Receiver: 420 feet*
Removal of Existing Structure	65.1
Site Preparation	66.4
New Transmission Structure Installation	68.5
Residences at Filbert Street (City of Los Angeles) / Structure 12-6	*Nearest Receiver: 45 feet to structure removal location; 120 feet to proposed structure location*
Removal of Existing Structure	84.5
Site Preparation	77.2
New Transmission Structure Installation	79.4
Residences at Carol Lane (City of Los Angeles) / Structure 12-7	*Nearest Receiver: 35 feet to structure removal location; 140 feet to proposed structure location*
Removal of Existing Structure	86.5
Site Preparation	75.9
New Transmission Structure Installation	78

Table 3.7-6. Construction Noise Modeling Summary Results

Receiver & Nearest Proposed Structure Location, by Construction Phase [1]	Construction Noise Level (dBA L_{eq})
Residences at Canyon Crest (City of Los Angeles) / Structure 13-3	*Nearest Receiver: 190 feet*
Removal of Existing Structure	72
Site Preparation	73.4
New Transmission Structure Installation	75.4
Sylmar Juvenile Courthouse (City of Los Angeles) / Structure 13-3	*Nearest Receiver: 300 feet*
Removal of Existing Structure	68
Site Preparation	69.3
New Transmission Structure Installation	71.4

Source: Dudek 2019; FHWA 2008
Notes: [1] The switching station tie-ins and upgrades phase is not included due to the distance between these activities and the nearest sensitive receiver. Additionally, construction noise from this phase would generally be less than noise produced by the other phases.

Although nearby off-site residences would be exposed to elevated construction noise levels, the increased noise levels would typically be relatively short term (approximately 1 day to 25 days per location) and would cease upon completion of project construction. It is anticipated that construction activities associated with the proposed project would take place primarily within the allowable hours of the City of Santa Clarita (7:00 a.m. to 7:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturday) and the City of Los Angeles (7:00 a.m. and 9:00 p.m. Monday through Friday, 8:00 a.m. and 6:00 p.m. on Saturday), and would not occur at any time on Sunday or on national holidays. In the event that construction is required to extend beyond these times, extended hours permits would be required and would be obtained by LADWP. As such, construction would not violate City of Santa Clarita or City of Los Angeles standards for construction[3].

However, construction noise levels would be substantially higher than existing ambient daytime noise levels, particularly for the construction activities proposed in proximity to the nearest adjacent noise-sensitive receivers (as shown in Table 3.7-6). For this reason, temporary noise impacts from construction would be considered potentially significant. However, MM-NOI-1 has been set forth to reduce construction noise associated with the proposed project and to ensure that nearby receptors are informed of construction activities.

The effectiveness of measures listed in MM-NOI-1 would vary from several decibels (which in general is a relatively small change) to 10 or more decibels (which subjectively would be perceived as a substantial change). Installation of a temporary noise barrier, for example, would vary in effectiveness depending upon the degree to which the line-of-sight between the source and receiver is broken. The noise reduction achieved by a barrier typically ranges from 5 dB to 10 dB. The noise reduction achieved by equipment silencers would range from several decibels to well over 10 decibels. Limiting equipment idling could reduce overall noise levels up to several decibels. However, the measures listed in MM-NOI-1, in conjunction, would result in a substantial decrease in construction noise. Upon implementation of MM-NOI-1 and due to the temporary nature of construction noise, impacts would be **less than significant with mitigation incorporated**.

[3] No noise-sensitive land uses located within unincorporated Los Angeles County would be in proximity of the proposed project.

Helicopters

As described in Chapter 2, helicopters would be used periodically throughout construction. Helicopters would be used for structure installations and structure removals in areas that would be difficult to reach with heavy-duty construction vehicles. Helicopters would also be used for conductor stringing and conductor removal. The helicopters used for structure installations and removals are expected to be heavy-duty helicopters that are suited for hauling transmission structure components. Helicopters used for conductor stringing and removal are expected to be smaller and lighter, as less power is required for conductor stringing/removal. Helicopter activities would be staged from six designated helicopter laydown areas along the alignment. These areas are listed in Table 3.7-7 and are shown on maps in Appendix B. Helicopter laydown areas would be used for helicopter lift off and landing. Helicopters may also pick up and drop off construction materials (namely transmission structure components) from the laydown areas. The nearest noise-sensitive land uses to the helicopter laydown areas are single-family residences, as shown in Table 3.7-7.

Structure installation via helicopter are expected to occur along three segments of the alignment: from structures 4-2 through 5-2; from structures 9-2 through 9-6; and from structures 10-3 through 12-1. Segments 9-2 through 9-6 and 10-3 through 12-1 extend through an undeveloped, mountainous area between I-210 and SR-14. This area includes Whitney Canyon Park and Elsmere Canyon Open Space, and the Angeles National Forest boundaries are approximately 1,500 feet west from this area of the alignment. As such, the nearest sensitive receptors to helicopter activities within these two segments would be recreationists. Public hiking trails are located along a portion of the transmission line corridor where it extends through Whitney Canyon Park and Elsmere Canyon Open Space. As such, there is the potential for hikers to be adjacent to helicopter construction activities. The segment extending from structures 4-2 through 5-2 has some surrounding residential developments. The closest residence along this segment is approximately 120 feet west of proposed structure location 4-2.

The locations where helicopters would be used for structure removal are currently unknown. However, they are expected to be similar in location and in nature to the structure installation sites that require helicopter use. As such, impacts would be similar.

Helicopter activities would be concentrated around the helicopter laydown areas and the structure installation/removal sites that require helicopter use. However, because helicopters would be used to install and remove conductor, some helicopter activity would occur along the entirety of the 12-mile project alignment.

Table 3.7-7. Proposed Helicopter Laydown Areas

Location [1]	Approximate Distance to nearest Noise-Sensitive Land Use (feet)
22000 Sierra Highway (22000 SW) helicopter laydown area	5,300
Cascades Development (CD) helicopter laydown area	850
Castaic Lake Water Agency 1 (CLWA1) helicopter laydown area	800
Castaic Lake Water Agency 2 (CLWA2) helicopter laydown area	100

Table 3.7-7. Proposed Helicopter Laydown Areas

Location [1]	Approximate Distance to nearest Noise-Sensitive Land Use (feet)
Metropolitan Water District (MWD) helicopter laydown area	2,800
Santa Clarita Watershed Recreation Conservation Authority (SCWRCA) helicopter laydown area	200 feet to a ranger residence[2]; 2,000 feet to the nearest residential neighborhood

Notes:

1 See Appendix B for maps showing the locations of these helicopter laydown areas.

2 The SCWRCA helicopter laydown area is adjacent to a residential structure that appears to be in use as a ranger residence for lands managed by the Santa Monica Mountains Conservancy. This structure it is not located on residentially zoned land and is used for the purposes of facilitating ranger patrol and presence in the area and for providing ranger amenities.

Helicopters used during construction would typically fly at low altitudes; therefore, potential temporary increases to ambient sound levels would occur in the area where helicopters are operating as well as along their flight path. Helicopters typically generate peak noise levels of approximately 78 to 88 dBA at 500 feet (FAA 1977). At any one location along the proposed project alignment, helicopter operations would typically occur for short periods several times per day. Operations would be limited to daytime working hours and would be short-term in nature. Each structure removal would take approximately 1 day. While structure installations may take longer, helicopter use is only expected to occur on one day during each installation. As such, for residences located within proximity to a helicopter installation or removal site (e.g., proposed structure location 4-2, located approximately 120 feet east of a residence), helicopter noise would last for approximately 1 day and would occur intermittently throughout that day (e.g., the helicopter would come and go from the site and would not hover continuously for the entire workday). During any helicopter maneuvers (or other construction activities) that could affect the hiking trails in Whitney Canyon Park and Elsmere Canyon Open Space, the affected trails would be temporarily closed. Warning signs would be placed on the trail, and construction workers may be stationed near the trail to ensure that the public does not enter the temporarily blocked areas, thereby increasing the distance between recreationists and construction activities, including helicopter maneuvers.

As with construction vehicle use, helicopter use during construction would be limited to the parameters for construction activities that are dictated by the cities of Los Angeles and Santa Clarita. For the City of Santa Clarita, allowable construction hours are between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays. For the City of Los Angeles, allowable construction hours are between 7:00 a.m. and 9:00 p.m. Monday through Friday and 8:00 a.m. and 6:00 p.m. on Saturdays. As specified by both jurisdictions, construction would not occur at any time on Sundays or on national holidays. In the event that construction is required to extend beyond these times, extended hours permits would be required and would be obtained by LADWP. LADWP would be required to adhere to any permit provisions that maybe imposed. As such, construction helicopter use would not violate City of Santa Clarita or City of Los Angeles standards for construction[4].

However, as with construction vehicle noise, helicopter use along the project alignment would intermittently increase noise levels above existing ambient daytime noise levels in the project area, particularly for helicopter maneuvers

4 No noise-sensitive land uses located within unincorporated Los Angeles County would be in proximity of the proposed project.

proposed in proximity to the nearest noise-sensitive receivers (see Table 3.7-7 and the discussions above). For this reason, noise impacts from construction helicopter use would be considered potentially significant. However, MM-NOI-1 would be implemented to reduce and control construction noise to the extent practicable. While some measures in MM-NOI-1 apply to construction vehicles and equipment only (and could not be implemented for helicopters), measures limiting construction hours would ensure that helicopters are used during daytime hours and are not used on Sundays or national holidays, unless permits are acquired by LADWP allowing extended hours. MM-NOI-1 would also ensure that nearby receptors are informed of construction helicopter activities, enabling affected receptors to plan accordingly. Upon implementation of MM-NOI-1, and due to the temporary and intermittent nature of helicopter noise during construction, impacts would be **less than significant with mitigation incorporated**.

Long-Term Operational Noise

Maintenance

Noise sources associated with operation of the proposed project would consist of regular inspection and maintenance. As with the existing 115 kV line, the 230 kV transmission line would be inspected several times annually by both ground and air patrols. Maintenance would be performed as needed. Because noise from such activities would be similar to that under the existing conditions, **no impacts** would occur from noise associated with inspection and maintenance.

Corona Noise

Noise would also be generated during operation by so-called "corona effect" noise. Corona is an electrical discharge associated with transmission lines produced by the ionization of fluid (most often humidity in the air) surrounding an electrically charged conductor. This phenomenon can produce low-level audible noise. Corona discharge is not a steady source of noise; rather, it varies with humidity conditions. Modeling of corona noise was conducted for the proposed project, to evaluate potential changes in corona noise that could potentially be produced by replacing the existing 115 kV line with a 230 kV line. Corona noise levels were estimated for the three existing transmission lines, as well as the proposed 230 kV line. The results of the corona effect noise analysis are provided in Table 3.7-8.

Table 3.7-8. Operational Noise Levels (dBA L_{50})

Existing Transmission Lines *Audible Noise Levels (dBA L_{50}) at 50 feet*		Existing plus Proposed Transmission Lines *Audible Noise Levels (dBA L_{50}) at 50 feet*	
Existing 115 kV Line (to be replaced)		*Proposed 230 kV Line*	
Fair Weather	17.0	Fair Weather	23.2
Wet Weather	26.7	Wet Weather	35.4
230 kV 4-Circuit line		*230 kV 4-Circuit line*	
Fair Weather	26.2	Fair Weather	26.2
Wet Weather	37.5	Wet Weather	37.5
500 kV DC line		*500 kV DC line*	
Fair Weather	51.4	Fair Weather	51.4
Wet Weather	45.4	Wet Weather	45.4

Table 3.7-8. Operational Noise Levels (dBA L_{50})

Existing Transmission Lines *Audible Noise Levels (dBA L_{50}) at 50 feet*		Existing plus Proposed Transmission Lines *Audible Noise Levels (dBA L_{50}) at 50 feet*	
Total Existing Audible Line Noise		*Total Post-Project Audible Line Noise*	
Fair Weather	51.4	Fair Weather	51.4
Wet Weather	46.1	Wet Weather	46.4

As shown in Table 3.7-8, the net change in noise levels would be negligible as a result of the replacement of the 115 kV line with the 230 kV line. Under fair weather conditions, there would be no increase in corona effect noise levels, and under wet weather conditions, the estimated noise increase would be approximately 0.3 dB. The effects of converting a 115 kV line to a 230 kV line within the transmission corridor are negligible because the existing 500 kV DC line (which would remain in service after the project is complete) generates substantially higher levels of corona noise than either the existing 115 kV line or the proposed 230 kV line. Due to the logarithmic nature of noise, the noise from the 500 kV DC line would need to be more than doubled in order to produce a noticeable increase in noise. As discussed in Section 3.7.1, a 3 dB change in noise level is barely perceptible; a doubling of the sound energy will result in a 3 dB increase in the noise level, all other things being equal. Furthermore, in the context of community noise, a change in noise levels of 1 dB or less is not audible. As such, the potential 0.3 dB change that would occur during four weather conditions would not produce an audible effect in the vicinity of the transmission corridor. Therefore, operational noise impacts due to corona would be **less than significant**.

Threshold B: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Construction activities may expose persons to excessive groundborne vibration or groundborne noise, causing a potentially significant impact. Based upon the DOT Transit Noise and Vibration Impact Assessment manual, heavier pieces of construction equipment, such as bulldozers, have peak particle velocities of approximately 0.089 inch/second or less at a distance of 25 feet (DOT 2006).

Groundborne vibration typically attenuates over short distances. At the distance from the nearest residence to the construction area (approximately 35 feet) and with the anticipated construction equipment, the vibration level would be approximately 82.6 VdB. At the closest sensitive receptors, vibration levels could temporarily exceed the vibration threshold of potential annoyance of 75 VdB; however, these vibration impacts would only occur intermittently during construction activities. Furthermore, the estimated worst-case vibration levels would not exceed the vibration threshold for "high annoyance" of 85 VdB. MM-NOI-1 would ensure that construction activities are limited to the daytime and would not occur on Sundays or holidays, to the extent feasible. MM-NOI-1 would also ensure that staging occurs 50 feet or more from vibration-sensitive land uses. Implementation of these measures would reduce vibration impacts at sensitive receptor locations to a less than significant level.

Construction can also affect nearby buildings by inflicting damage from vibration. However, construction vibration associated with this project would not result in structural building damage. Building damage typically occurs at

vibration levels of 0.5 inch/second or greater for buildings of reinforced-concrete, steel, or timber construction. The heavier pieces of construction equipment used for this project would include backhoes, front-end loaders, and flat-bed trucks. Pile driving, blasting, or other special construction techniques associated with particularly high levels of vibration would not be used for construction of the proposed project. At the closest sensitive receptors, located approximately 35 feet from proposed construction activity, the corresponding vibration level from heavy equipment would be approximately 0.0537 inches per second. Therefore, excessive groundborne vibration and groundborne noise with the potential to adversely affect nearby buildings would not be generated. Once operational, the project would not generate groundborne vibration. As such, no building damage would be expected to occur as a result of project-related vibration during construction or operation. Overall, upon compliance with MM-NOI-1, impacts would be **less than significant with mitigation incorporated**.

Threshold C: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

As discussed in Threshold A, the proposed project would replace an existing 115 kV transmission line with a 230 kV transmission line. Within the proposed transmission line alignment, two other existing transmission lines would continue to operate. As shown in Table 3.7-8, the proposed project would not result in a substantial increase in corona effect noise, during either fair or wet weather conditions. Therefore, permanent increases in ambient noise levels in the project vicinity above levels existing without the project would be **less than significant**.

Threshold D: Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

As discussed in Threshold A, the proposed project would result in temporary noise increases during the construction period. The temporary increases in ambient noise levels would vary depending on the location of the construction activities and the type of equipment being used. Temporary noise increases at adjacent noise-sensitive land uses from construction activities would be potentially significant, as explained in Threshold A. However, construction practices to minimize temporary increases in noise levels would be implemented, as outlined in MM-NOI-1. As such, impacts related to temporary or periodic increases in noise levels would be **less than significant with mitigation incorporated**.

3.7.6 Mitigation Measure(s)

No mitigation measures are required as part of the project. The following Best Management Practices (BMPs) would be implemented during project construction.

MM-NOI-1

Construction Noise Reduction. The Los Angeles Department of Water and Power and/or its construction contractor shall comply with the following measures during construction:

1. For construction activities within the City of Los Angeles, construction activities shall not occur between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, 6:00 p.m. and 8:00 a.m. on Saturdays, or on

Sundays or national holidays. For construction activities within the City of Santa Clarita, construction activities shall not occur between the hours of 7:00 p.m. and 7:00 a.m., Monday through Friday, 6:00 p.m. and 8:00 a.m. on Saturdays, or on Sundays or the following public holidays: New Year's Day, Independence Day, Thanksgiving, Christmas Day, Memorial Day, and Labor Day. In the event that construction is required to extend beyond these times, extended hours permits shall be required.

2. Equipment (e.g., portable generators) shall be shielded from sensitive uses using local temporary noise barriers or enclosures, or shall otherwise be designed or configured to minimize noise at nearby noise-sensitive receptors.
3. Staging of construction equipment shall not occur within 50 feet of any noise- or vibration-sensitive land uses.
4. All noise-producing equipment and vehicles using internal combustion engines shall be equipped with mufflers; 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. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
5. All mobile or fixed noise-producing equipment used for the project that are regulated for noise output by a local, state, or federal agency shall comply with such regulations.
6. Idling equipment shall be kept to a minimum and moved as far as practicable from noise-sensitive land uses.
7. Electrically powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible.
8. Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
9. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
10. Notice will be provided via mail, door hangers, or other means prior to construction to properties within approximately 500 feet of work areas where helicopter-aided construction will occur. The announcement will state where and when construction is expected to occur in the area. The announcement will also identify a public liaison person that can be contacted for construction-related noise concerns. Any complaints will be logged and investigated to facilitate resolution of the issue of concern as feasible.

3.7.7 Level of Significance After Mitigation

Implementation of MM-NOI-1 would ensure that noise from construction equipment is reduced to the extent practicable. The effectiveness of the measures listed in MM-NOI-1 would vary from several decibels (which in general is a relatively small change) to ten or more decibels (which would be perceived as a substantial change). The range of

effectiveness would vary based on the equipment in use, the original condition of the equipment, the specific location of the noise source and receiver, etc. Installation of a temporary noise barrier, for example, would vary in effectiveness depending upon the degree to which the line-of-sight between the source and receiver is broken. The noise reduction achieved by a barrier typically ranges from 5 to 10 dB. The noise reduction achieved by equipment silencers would range from several decibels to well over 10 decibels. Limiting equipment idling could reduce overall noise levels up to several decibels. However, the measures listed in MM-NOI-1, in conjunction, would result in a substantial decrease in construction noise.

The measures listed in MM-NOI-1 would also limit the hours of construction to daytime hours whenever feasible and would ensure that properties within the vicinity of helicopter-aided construction activities are alerted of construction activities and are provided with contact information to address any construction-related noise concerns. These measures would limit the hours of helicopter maneuvers and would also allow potentially affected receivers to plan accordingly. Upon implementation of MM-NOI-1, and due to the temporary nature of construction noise, impacts would be less than significant.

3.7.8 References Cited

Caltrans (California Department of Transportation). 2013. Transportation and Construction Vibration Guidance Manual. Division of Environmental Analysis, Environmental Engineering, Hazardous Waste, Air, Noise, Paleontology Office. September 2013. Sacramento, CA.

DOT (U.S. Department of Transportation Federal Transit Administration, Office of Planning and Environment). 2006. FTA-VA-90-1003-06. Transit Noise and Vibration Impact Assessment. (Prepared under contract by Harris, Miller, Miller and Hanson). Burlington, MA.

FAA (Federal Aviation Administration). 1977. Noise Characteristics of Eight Helicopters. H.C. True and E.J. Ricky, U.S. Department of Transportation, Federal Aviation Administration, Systems Research & Development Service. Final Report. July 1977.

FHWA (Federal Highway Administration). 2008. Roadway Construction Noise Model (RCNM), Software Version 1.1. U.S. Department of Transportation, Research and Innovative Technology Administration, John A. Volpe National Transportation Systems Center, Environmental Measurement and Modeling Division. Washington, D.C.

OPR (Office of Planning and Research). 2003. State of California General Plan Guidelines. Governor's Office of Planning and Research. October 2003.

SOURCE: Dudek 2018

Los Angeles Department of Water & Power

0 0.75 1.5 Miles

FIGURE 3.7-1

Noise Measurement Locations

PP1 and PP2 Transmission Line Conversion Project

INTENTIONALLY LEFT BLANK

3.8 Transportation and Traffic

This section describes the existing traffic/circulation setting of the project area; discusses associated regulatory requirements; and evaluates potential impacts on the transportation network associated with development of the proposed project.

Comments received in response to the Notice of Preparation (see Appendix A) included a letter from the California Department of Transportation (Caltrans), which lists potential permitting requirements for use of state transportation facilities during construction and encroachments onto state facilities for any project work that would occur on or in the vicinity of the Caltrans right of way. The comment letter also states that all environmental concerns related to encroachment must be addressed. Letters were also received from the Los Angeles County Fire Department, the Santa Clarita Valley Sheriff's Station, and the City of Santa Clarita requesting coordination in the event of any street closures. The Los Angeles County Fire Department requested that stations be notified at least three days in advance of any street closures that may affect fire and/or paramedic response and that three sets of plans for detours be provided with a tentative schedule of planned closures prior to the start of construction. The Santa Clarita Valley Sheriff's Station expressed concerns regarding construction-related traffic and the potential effects that it may have on commuters, pedestrians, emergency responders, and the station's patrol operations. The Santa Clarita Valley Sheriff's Station recommended preparation of a construction traffic management plan that would ensure safe management of vehicle, bicycle, and pedestrian traffic during construction and requested advance notification of temporary lane closures and lane realignments. The station also requested that one or more emergency lanes be provided through the project site at all times. The City of Santa Clarita specifically requested that LADWP work with their staff on any proposed road closures and implementation of traffic mitigation.

Issues pertaining to emergency access, street and lane closures, traffic-related permitting, and effects to pedestrians and cyclists have been discussed and analyzed in the Initial Study for the proposed project, which is attached to this EIR as Appendix A. During the Initial Study process, issues pertaining to traffic safety hazards, emergency access, public transit, pedestrians, and bicycles were determined to be less than significant. As such, these topics are not evaluated in this EIR section. As stated in the Initial Study, appropriate permits for roadway encroachments and oversize loads would be obtained by LADWP, and LADWP would adhere to permitting provisions as required. Any road closures would be coordinated with Caltrans or the applicable local jurisdiction, and access for emergency vehicles would be ensured throughout construction.

The Southern California Association of Governments (SCAG) also submitted a comment letter in response to the Notice of Preparation, which states that SCAG's 2016 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) sets forth goals that may be pertinent to the proposed project. This EIR addresses RTP/SCS consistency (see Section 3.6). However, the specific policies listed in the comment letter do not pertain to this project.

Documentation used for the analysis in this section includes review of traffic analysis policies and guidelines from Caltrans, the Los Angeles County Department of Public Works (DPW), the Los Angeles County Congestion

Management Program (CMP), City of Los Angeles Department of Transportation (LADOT), and the City of Santa Clarita General Plan Circulation Element. Sources consulted are listed in Section 3.8.8.

3.8.1 Existing Conditions

Study Area

The proposed alignment would stretch approximately 12 miles from Haskell Canyon, southward, to the community of Sylmar. The surrounding transportation network, including existing roadways, transit services, and pedestrian facilities discussed in this analysis will be referred to as the "study area."

Circulation Network

In addition to existing LADWP maintenance roads that provide access to the proposed alignment, key city, county, and state roadways and freeways in the study area are as follows:

- **Interstate 5 (I-5)**. I-5 is located south and west of the project alignment. This freeway is a north-south interstate highway that extends from San Ysidro, California in the south to Blaine, Washington in the north. Access to the project area from the I-5 freeway is provided via northbound and southbound on/off-ramps at Newhall Ranch Road, Roxford Street, Sepulveda Boulevard, and Balboa Boulevard. I-5 is classified as a State Freeway in the Los Angeles County CMP (LA CMP 2010).
- **Interstate 210 (I-210)**. I-210 is located south and east of the project alignment. This freeway is an east-west interstate highway that extends from its intersection with I-10 in Redlands in the east to its intersection with I-5 in Los Angeles in the west. Access to the project area from the I-210 freeway is provided via eastbound and westbound on/off-ramps at Yarnell Street. I-210 is also classified as a State Freeway in the Los Angeles County CMP.
- **State Route 14 (SR-14)**. SR-14 is located west and east of the project alignment and runs between two laydown areas. The freeway is a north-south highway that extends from its junction with I-5 near San Fernando and Santa Clarita in the south to its junction with US-395 to the north near Inyokern. Access to the project area from SR-14 is provided via northbound and southbound on/off-ramps at Newhall Avenue, Placerita Canyon Road, Golden Valley Road, and the Sierra Highway. SR-14 is also classified as a State Freeway in the Los Angeles County CMP.
- **Newhall Ranch Road**. Newhall Ranch Road is a six- to eight-lane, divided road that stretches from I-5 to Soledad Canyon Road, where the roadway becomes Golden Valley Road to its junction with SR-14. Newhall Ranch Road would provide access to northern sections of the proposed alignment via I-5 and intersections with Bouquet Canyon Road and Copper Hill Road. Newhall Ranch Road is identified as a major highway in the City of Santa Clarita General Plan Circulation Element (City of Santa Clarita 2011).
- **Copper Hill Road**. Copper Hill Road is a six- to eight-lane, divided road that stretches from Newhall Ranch Road to Bouquet Canyon Road. Access to northern sections of the proposed alignment, including the Haskell Switching Station (the northern terminus of the new 230 kV line), would be provided via Copper Hill Road. Copper Hill Road is identified as a major highway in the City of Santa Clarita General Plan Circulation Element.

- **Bouquet Canyon Road**. Bouquet Canyon Road is a four- to six-lane, divided road from Magic Mountain Parkway to Plum Canyon Road and becomes a two-lane, undivided road east to Leona Valley. Bouquet Canyon Road would provide access to the northern section of the proposed alignment. Bouquet Valley Road is identified as a major highway from Magic Mountain Parkway to Plum Canyon Road and a secondary highway from Plum Canyon Road to the Angeles National Forest boundary in the City of Santa Clarita General Plan Circulation Element.
- **Sierra Highway**. Sierra Highway is a four lane, undivided road that begins at The Old Road – San Fernando Road north of Sylmar and serves as a non-freeway connection between I-5 and SR-14. Sierra Highway becomes primarily a four lane, divided road north of Ramsen Street in Santa Clarita within the study area. Access to the southern section of the proposed alignment is provided via Placerita Canyon Road, Newhall Avenue, and other smaller maintenance roads. Sierra Highway is identified as a major highway in the City of Santa Clarita General Plan Circulation Element.
- **Golden Valley Road**. Golden Valley Road is a four lane, divided road that runs along an almost 2-mile stretch of the northern portion of the proposed alignment in the City of Santa Clarita. Access to this section of the project area is provided via Golden Valley Road's intersection with SR-14. Golden Valley Road is identified as a major highway in the City of Santa Clarita General Plan Circulation Element.

Traffic and Transportation Terminology

The following terms are used to characterize roadway operations and to measure and/or describe a project's effects on roadway operations.

Volume to Capacity Ratio (v/c ratio). The v/c ratio shows the number of vehicles currently using the roadway compared to the ideal maximum number of vehicles that can efficiently use the roadway.

Level of Service (LOS). LOS shows the efficiency of traffic operations at a given intersection. LOS is a measure of average operating conditions at an intersection during a peak hour. It is based on v/c ratio or delay measured in seconds. Levels range from LOS A to LOS F, with LOS A representing excellent (free-flow) conditions and LOS F representing extreme congestion.

Passenger Car Equivalent. Trucks typically take up more length on a roadway than passenger cars. As such, truck trips are often multiplied by a factor of 2.5 car trips per truck trip, to make sure that the additional length (and resulting traffic effects) are being considered in the analysis.

3.8.2 Relevant Plans, Policies, and Ordinances

State

California Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law, which creates a process to change the way that transportation impacts are analyzed under CEQA. SB 743 required the Governor's Office of Planning and Research

(OPR) to amend the CEQA Guidelines to provide an alternative to level of service (LOS) for evaluating transportation impacts. Under the new transportation guidelines, LOS, or automobile delay, will no longer be considered an environmental impact under CEQA.

The updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018. OPR's regulatory text indicates that a public agency may immediately commence implementation of the new transportation impact guidelines, and that the guidelines must be implemented statewide by July 1, 2020. The traffic analysis in this section relies on LOS to characterize impacts, since use of vehicle miles traveled (VMT) is not yet mandatory under CEQA, and LADWP has not elected to be governed immediately by the revised traffic and transportation analysis methodology. Furthermore, the NOP for the proposed project was released on January 24, 2018, which was prior to approval of the revised CEQA Guidelines.

California Department of Transportation

Caltrans is the public agency responsible for designing, building, operating, and maintaining California's state highway system, which consists of freeways, highways, expressways, toll roads, and the area between the roadways and property lines. Caltrans is also responsible for permitting and regulating the use of state roadways. Caltrans' construction practices require temporary traffic control planning during any activities that interfere with the normal function of a state roadway. Where applicable, the parameters set forth in Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002) were used in the traffic analysis.

Caltrans impact criteria state that a target LOS at the transition between LOS C and LOS D is recommended for state facilities. However, Caltrans also acknowledges that this target may not always be feasible, and if an existing State Highway facility is operating worse than the appropriate target LOS, the existing LOS should be maintained. Caltrans is currently phasing in VMT thresholds and analysis, per SB 743. Caltrans' guidance and thresholds for traffic impact studies have not yet be updated to reflect VMT thresholds and analysis methodology. The proposed project would not have the potential to increase VMT, since increases in vehicle trips would occur during construction only and, therefore, would be temporary. For these reasons, Caltrans LOS thresholds will be relied upon in this document as the Caltrans significance thresholds. Furthermore, as noted above, the NOP for the proposed project was released prior to approval of the revised CEQA Guidelines.

Local

The project alignment extends through unincorporated County of Los Angeles, City of Santa Clarita, and the City of Los Angeles. The following local/regional regulations pertaining to transportation are applicable to the proposed project.

Los Angeles County Metropolitan Transportation Authority (Metro)

The applicable congestion management program (CMP) for the project area and the surrounding metropolitan area is the Los Angeles County Metropolitan Transportation Authority's (Metro) 2010 CMP. This program monitors and sets performance indicators for a transportation network of numerous highway segments, freeways, and key roadway

intersections throughout Los Angeles County (called the CMP Highway and Roadway System). Along the project alignment, I-5, I-210, and SR-14 are part of the CMP Highway and Roadway System.

The CMP requires analysis of arterial monitoring intersections where a project will add 50 or more trips during either the morning peak traffic hour (AM peak hour) or evening peak traffic hour (PM peak hour) and CMP mainline freeway monitoring locations where the proposed project will add 150 or more trips (by direction) during either the AM or PM peak hour. The CMP indicates that a project would have a significant impact if project traffic increases the volume to capacity (v/c) ratio of a facility by 0.02 or more at a facility operating at LOS F.

County of Los Angeles

The County of Los Angeles Department of Public Works (DPW) uses LOS to assess the congestion of roadways in the transportation system. Based on a roadway's v/c ratio, a letter designation is assigned that represents the traffic flow conditions, or LOS. LOS D is the desired minimum LOS in the County. In some instances, an LOS below LOS D is deemed acceptable to further the County's general plan goals and policies, such as those that protect environmentally sensitive areas, promote active transportation, and encourage infill development, particularly within the County's designated transit-oriented districts. The traffic analysis in this section has been prepared consistent with the County's *Traffic Impact Analysis Report Guidelines* (December 2013).

As identified in the County's guidelines, an impact is considered significant if the project-related increase in the v/c ratio equals or exceeds the thresholds shown in Table 3.8-1.

Table 3.8-1. County of Los Angeles Traffic Impact Guidelines Significant Impact Criteria for Intersections

Pre-project		
LOS	*V/C*	Project V/C Increase
C	0.71 to 0.80	0.04 or more
D	0.81 to 0.90	0.02 or more
E/F	0.91 or more	0.01 or more

Source: Traffic Impact Analysis Report Guidelines, County of Los Angeles Department of Public Works, December 2013
LOS = level of service
V/C = volume to capacity

City of Los Angeles

Portions of the proposed alignment are located within the City of Los Angeles, which uses the significance criteria provided in the LADOT *Traffic Impact Study Guidelines* (December 2016). LADOT has adopted the following significance criteria to assess whether the addition of project trips would cause a significant impact on study area intersections: A significant impact would occur if the project-related increases in the v/c ratio would equal or exceed the thresholds shown in Table 3.8-2.

Table 3.8-2. Significance Criteria for Local Signalized Intersections

Level of Service	Final V/C Ratio	Project-Related Increase in V/C
C	0.701 to 0.800	Equal to or greater than 0.040
D	0.801 to 0.900	Equal to or greater than 0.020
E	0.901 or more	Equal to or greater than 0.010
F	Greater than 1.00	Equal to or greater than 0.010

Source: LADOT, *Traffic Impact Study Guidelines*, 2016.

City of Santa Clarita

The Circulation Element of the Santa Clarita General Plan provides objectives, policies, and programs regarding transportation, including the following LOS standard recommendation for the street and highway system:

> The Countywide General Plan does not specify an acceptable level of service for the purpose of long-range planning; however, in conformance with the Congestion Management Program, the preferred maximum acceptable level of service on arterial roads (i.e., major, secondary, and limited secondary highways) within the planning area is LOS E. The City strives to achieve LOS D or better on highways to the extent feasible given right-of-way and physical constraints, while recognizing that in higher density urban areas there is generally a tradeoff between vehicle LOS and other factors such as pedestrian mobility; therefore, a Level of Service F may be necessary at limited location to implement the General Plan. In residential neighborhoods, the City and County desire conditions of LOS C or better.

3.8.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to transportation and traffic are based on Appendix G of the CEQA Guidelines. Through the analysis in the Initial Study (see Appendix A), it was determined that the proposed project would not conflict with plans, ordinances, or policies establishing measures of effectiveness for the circulation system during operations (i.e., Threshold A, operations); would not conflict with the applicable congestion management program during operations (i.e., Threshold B, operations); would not result in significant impacts related to air traffic patterns (i.e., Threshold C); would not substantially increase hazards due to a design feature (i.e., Threshold D); would not result in significant impacts related to inadequate emergency access (i.e., Threshold E); and would not result in significant impacts related to conflicts with adopted policies, plans, or programs for alternative transportation facilities (i.e., Threshold F). As such, these issues are not further analyzed in the EIR. Based on the remaining thresholds, implementation of the proposed project would have a significant impact related to transportation and traffic if it would result in the following during construction:

A. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance or the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

B. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

3.8.4 Methodology

The project setting was developed by reviewing the existing transportation network in the project vicinity. Trip generation during the peak construction period was qualitatively analyzed to determine project-level impacts to the transportation network. Worker, vendor truck, and haul truck trips were calculated assuming that a maximum of two, equal-sized crews would operate during each phase of the proposed construction schedule. The peak construction period analyzes the scenario during which all crews are in operation at the same time, and all construction phases overlap.

3.8.5 Impact Analysis

Threshold A: Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance or 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?

Construction is expected to take approximately 4 years, beginning in 2019 and ending in 2023, and would include five construction phases: site preparation, demolition (removal of the existing 115 kV line), transmission structure installation and conductor stringing, switching station tie-ins and upgrades, and site rehabilitation. Due to the linear nature of the project area, there is the potential for all phases to overlap during peak construction and for each phase to involve approximately two construction crews working simultaneously in different work areas along the alignment. (These assumptions are conservative, as they result in a slightly greater number of workers present along the alignment at a given time, relative to the construction scenario described in Chapter 2 of this EIR.) Construction activities would typically occur on weekdays during the daytime hours (8-hour construction days are assumed). In the event that construction is required to extend beyond these times, extended hours permits may be required. Nighttime and weekend construction, while infrequent, could be required for major roadway, freeway, and railroad crossings. Approval from the cities of Los Angeles and Santa Clarita, Los Angeles County, and Caltrans would be required for nighttime and/or weekend work within their respective jurisdictions. Traffic generated by the construction phase of the project would be temporary, and this traffic would cease once construction of the proposed project is completed.

LADWP would be required to obtain applicable encroachment permits from affected jurisdictions (City of Los Angeles, City of Santa Clarita, Los Angeles County, Caltrans, the California Public Utilities Commission [railroad crossings]) for any work conducted within the rights-of-way (ROW) of public transportation facilities (i.e., major roadway, freeway, and railroad crossings). LADWP would be required to adhere to all construction-related regulations of affected jurisdictions.

Based on estimates of the maximum number of construction workers and vendor and haul trucks for the peak construction phase, Table 3.8-3 provides the project trip generation for the peak construction phase, for each work crew.

Table 3.8-3. Peak Construction Trip Generation Estimates

Vehicle Type	Daily Quantity		Daily Trips[1]	AM Peak Hour			PM Peak Hour		
				In	*Out*	*Total*	*In*	*Out*	*Total*
Phase 1 – Site Preparation									
Crew 1									
Construction Workers	10	Workers	20	10	0	10	0	10	10
Vendor Trucks[2]	2	Trucks	4	1	1	2	1	1	2
Haul Trucks	0	Trucks	0	0	0	0	0	0	0
Subtotal Crew 1			*24*	*11*	*1*	*12*	*1*	*11*	*12*
Crew 2									
Construction Workers	10	Workers	20	10	0	10	0	10	10
Vendor Trucks[2]	2	Trucks	4	1	1	2	1	1	2
Haul Trucks	0	Trucks	0	0	0	0	0	0	0
Subtotal Crew 2			*24*	*11*	*1*	*12*	*1*	*11*	*12*
Subtotal Phase 1			48	22	2	24	2	22	24
Phase 2 – Demolition									
Crew 1									
Construction Workers	5	Workers	10	5	0	5	0	5	5
Vendor Trucks[2]	5	Trucks	10	2	1	3	2	1	3
Haul Trucks	1	Trucks	2	1	0	1	0	1	1
Subtotal Crew 1			*22*	*8*	*1*	*9*	*2*	*7*	*9*
Crew 2									
Construction Workers	5	Workers	10	5	0	5	0	5	5
Vendor Trucks[2]	5	Trucks	10	2	1	3	2	1	3
Haul Trucks	1	Trucks	2	1	0	1	0	1	1
Subtotal Crew 2			*22*	*8*	*1*	*9*	*2*	*7*	*9*
Subtotal Phase 2			44	16	2	18	4	14	18
Phase 3 – Transmission Structure Installation & Conductor Stringing									
Crew 1									
Construction Workers	6	Workers	12	6	0	6	0	6	6
Vendor Trucks[2]	14	Trucks	28	5	4	9	5	4	9
Haul Trucks	1	Trucks	2	1	0	1	0	1	1
Subtotal Crew 1			*42*	*12*	*4*	*16*	*5*	*11*	*16*
Crew 2									
Construction Workers	6	Workers	12	6	0	6	0	6	6
Vendor Trucks[2]	14	Trucks	28	5	4	9	5	4	9
Haul Trucks	1	Trucks	2	1	0	1	0	1	1
Subtotal Crew 2			*42*	*12*	*4*	*16*	*5*	*11*	*16*
Subtotal Phase 3			84	24	8	32	10	22	32

Table 3.8-3. Peak Construction Trip Generation Estimates

Vehicle Type	Daily Quantity		Daily Trips[1]	AM Peak Hour			PM Peak Hour		
				In	*Out*	*Total*	*In*	*Out*	*Total*
Phase 4 – Switching Station Tie-ins and Upgrades									
Crew 1									
Construction Workers	15	Workers	30	15	0	15	0	15	15
Vendor Trucks[2]	8	Trucks	16	3	2	5	3	2	5
Haul Trucks	0	Trucks	0	0	0	0	0	0	0
Subtotal Crew 1			*46*	*18*	*2*	*20*	*3*	*17*	*20*
Crew 2									
Construction Workers	15	Workers	30	15	0	15	0	15	15
Vendor Trucks[2]	8	Trucks	16	3	2	5	3	2	5
Haul Trucks	0	Trucks	0	0	0	0	0	0	0
Subtotal Crew 2			*46*	*18*	*2*	*20*	*3*	*17*	*20*
Subtotal Phase 4			92	36	4	40	6	34	40
Phase 5 – Site Rehabilitation									
Crew 1									
Construction Workers	2	Workers	4	2	0	2	0	2	2
Vendor Trucks[2]	3	Trucks	6	1	1	2	1	1	2
Haul Trucks	0	Trucks	0	0	0	0	0	0	0
Subtotal Crew 1			*10*	*3*	*1*	*4*	*1*	*3*	*4*
Crew 2									
Construction Workers	2	Workers	4	2	0	2	0	2	2
Vendor Trucks[2]	3	Trucks	6	1	1	2	1	1	2
Haul Trucks	0	Trucks	0	0	0	0	0	0	0
Subtotal Crew 2			*10*	*3*	*1*	*4*	*1*	*3*	*4*
Subtotal Phase 5			20	6	2	8	2	6	8
Project Total			*288*	*104*	*18*	*122*	*24*	*98*	*122*

Source: Dudek 2018

1 Daily trips represent the number of trips to and from the project site (i.e., two trips represent one truck traveling to the work area and leaving the work area)

2 Assumes trucks are spread evenly throughout an 8 hour workday, equating to a minimum of approximately 30% of vendor truck trips occur during AM and PM peak hours

As shown in Table 3.8-3, the peak construction phase of the project is expected to generate a total of approximately 288 daily trips, 122 AM peak-hour trips (104 inbound and 18 outbound), and 122 PM peak-hour trips (24 inbound and 98 outbound). With the application of passenger-car equivalence (PCE) factors to truck trips, the peak construction phase of the project would generate 432 PCE daily trips, with 170 PCE trips during the AM peak hour (130 inbound and 40 outbound) and 170 PCE trips during the PM peak hour (42 inbound and 128 outbound). A detailed trip generation spreadsheet is provided in Appendix G of this EIR, showing both non-PCE and PCE calculations.

It should be noted that while the trip generation estimates of the peak construction phase include traffic destined to/from the project area, individual work crews would work in different, separate work areas along the proposed

alignment. The duration of construction activities at each work area would range from approximately 1 day to 25 days. Therefore, the trip generation estimates would not be concentrated in one particular area of the alignment. Rather, trips would be spread out across the 12-mile alignment. Traffic generated by the construction phase of the project would be temporary, and this traffic would cease once construction of the proposed project is completed.

Phase 4, Switching Station Tie-Ins and Upgrades, would generate the highest volume of construction-related traffic, relative to the other phases. This phase would generate a total of 30 worker trips and 16 vendor trips each day per crew. Each crew would have 15 workers arriving during the AM peak hour and 15 workers leaving during the PM peak hour. Each crew would have 5 vendor truck trips during the AM peak hour and 5 vendor truck trips during the PM peak hour. Therefore, each of the two crews in Phase 4 would generate a total of 20 vehicles in the AM peak hour and 20 vehicles in the PM peak hour. All other phases would generate fewer AM and PM peak hour trips than Phase 4.

Given the project's maximum construction trip generation of 20 AM peak hour trips and 20 PM peak hour trips per crew (Phase 4), the traffic generated by project construction would not generate enough peak hour traffic volumes (20 peak hour trips or less; or, 25 peak hour trips when adjusted with PCE) to create a significant traffic impact per the LOS standards of the City and County of Los Angeles, the City of Santa Clarita, or Caltrans. See Section 3.8.2, which describes the significance thresholds. As described in Section 3.8.2, the City and County of Los Angeles have significance thresholds that are based on project-related increases in intersection v/c ratios. Intersections within the jurisdictions of the City and County of Los Angeles would not experience significant v/c increases with the addition of project traffic, due to the minimal and dispersed nature of project construction traffic. As described in Section 3.8.2, the City of Santa Clarita and Caltrans have significance thresholds that are based on degradation of LOS. Intersections within the jurisdictions of the City of Santa Clarita and Caltrans would not have a degradation in LOS beyond their current LOS levels as a result of project traffic, due to the minimal and dispersed nature of project construction traffic. Furthermore, traffic generated by the construction phase of the project would be limited to the 4-year construction period and would be dispersed throughout the highway and roadway system along the 12-mile project alignment. Project-related traffic would cease once construction is complete. For these reasons, project-related traffic would not cause a permanent increase in vehicles on project area roadways and would not adversely affect or conflict with the performance standards of the jurisdictions in the project area. Impacts would be **less than significant**.

Threshold B: Would the project 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?

The Los Angeles County CMP requires evaluation of all CMP arterial monitoring intersections where the project would add 50 or more new peak-hour trips, and/or evaluation of all mainline freeway segments where the project would add 150 or more trips, in either direction. Along the project alignment, the I-5, I-210, and SR-14 freeways, as well as the Sierra Highway arterial within the study area, are part of the CMP Highway and Roadway System.

As shown in Table 3.8-3 above, construction of the proposed project would generate temporary trips as high as 20 trips in the AM or PM peak hour (25 trips when adjusted with PCE) for any one crew. As no more than one crew would operate at a work area along the proposed alignment at one time, construction traffic would be spread out

across the transportation facilities within the study area surrounding the 12-mile project alignment. The project would not require a CMP analysis, as the project's work crews would generate less than 50 peak hour trips to any CMP-monitored arterials and intersections, and less than 150 peak hour trips to any CMP-monitored freeway mainline segments; and, the temporary construction traffic would not increase the v/c ratio of any CMP facilities by 0.02 v/c or higher. Therefore, construction impacts to CMP facilities would be **less than significant**.

3.8.6 Mitigation Measure(s)

Impacts were determined to be less than significant and, therefore, no mitigation measures are required.

3.8.7 Level of Significance After Mitigation

Impacts were determined to be less than significant and no mitigation measures are required.

3.8.8 References Cited

California Department of Transportation (Caltrans). 2002. "Guide for the Preparation of Traffic Impact Studies." Accessed January 8, 2019. http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf.

City of Santa Clarita. 2011. "City of Santa Clarita General Plan Circulation Element." City of Santa Clarita. June 2011. Accessed January 4, 2019. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/4%20-%20Circulation%20Element.pdf.

Los Angeles Congestion Management Program (LA CMP). 2010. "2010 Congestion Management Program." Accessed January 4, 2019. http://media.metro.net/projects_studies/cmp/images/CMP_Final_2010.pdf.

Los Angeles County Department of Public Works (LA County). 2013. "Traffic Impact Analysis Report Guidelines." January 1, 1997. Revised December 2013. Accessed January 8, 2019. http://dpw.lacounty.gov/traffic/traffic%20impact%20analysis%20guidelines.pdf.

Los Angeles Department of Transportation (LADOT). 2016. "Transportation Impact Study Guidelines." December 2016. Accessed January 8, 2019. https://ladot.lacity.org/sites/g/files/wph266/f/COLA-TISGuidelines-010517.pdf.

INTENTIONALLY LEFT BLANK

3.9 Tribal Cultural Resources

This section discusses potential impacts to tribal cultural resources (TCRs) resulting from implementation of the proposed project.

Comments received in response to the Notice of Preparation (see Appendix A) included a letter from the Native American Heritage Commission (NAHC) describing tribal consultation requirements and listing recommendations for cultural resources assessments. Recommendations included conducting a search of the California Historical Research Information System (CHRIS); conducting a field survey (if determined necessary based on the CHRIS records search results); preparing a professional report detailing the findings of the field survey and records search; conducting a Sacred Lands File (SLF) search and Native American tribal outreach; and, including provisions for the inadvertent discovery of cultural resources during construction and the protection of such resources. As demonstrated in this section, a cultural resources assessment has been conducted for the proposed project, and this assessment adheres to these recommendations. The assessment is attached to this EIR as Appendix E.

The analysis in this section is based on a review of existing cultural resources; technical data; applicable laws, regulations, and guidelines pertaining to TCRs; and information from the Cultural Resources Assessment contained in Appendix E of this EIR. Other sources consulted are listed in Section 3.9.8.

3.9.1 Existing Conditions

This section documents the results of a CHRIS search conducted at the South Central Coastal Information Center (SCCIC), a search of the NAHC SLF and tribal coordination, and tribal consultation completed by LADWP pursuant to California Assembly Bill (AB) 52 for the proposed project.

California Historical Resources Information System Records Search

On February 23, 2017, Dudek completed a search of the CHRIS at the SCCIC for the project alignment and surrounding 1.0 mile. This search included mapped prehistoric, historical, and built-environment resources; Department of Parks and Recreation site records; technical reports; archival resources; and ethnographic references. Additional consulted sources included historical maps of the proposed project area, the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, the Archaeological Determinations of Eligibility, the LADWP Records Center, and the LADWP Photographic Collection accessed via the Los Angeles Public Library online archives. The confidential records search results are on file at the offices of LADWP.

Previously Conducted Cultural Resources Studies

The SCCIC records indicate that 174 previous cultural resources technical investigations have been conducted within 1.0-mile of the project alignment. Of these, 13 previous studies overlap with the project alignment while the remaining 161 are within the records search buffer. See Appendix E for a list of the previous studies overlap with the project alignment and the records search buffer.

Previously Recorded Cultural Resources

The SCCIC records indicate that 71 resources have been recorded within 1.0-mile of the project alignment. Of these 71 resources, 13 have been previously identified within or intersecting with the project alignment. The remaining 58 resources have been recorded within the surrounding search buffer. See Appendix E for a complete list of the resources recorded within the project area and surrounding search buffer.

The 13 resources that are within, or intersect with, the project alignment are comprised of five road alignments (P-19-002145/CA-LAN-002145H, P-19-002150/CA-LAN-002150H, P-19-186912, P-19-188007, and P-19-188492), one transmission line (P-19-186861), the Los Angeles Aqueduct (P-19-002105/CA-LAN-002105H), and the project alignment itself (P-19-002132/CA-LAN-002132H - San Francisquito PP1 and PP2 Transmission Lines). The remaining five resources consist of three homesteads (P-19-003131/CA-LAN-003131H, P-19-004720/CA-LAN-004720H, and P-19-004721/CA-LAN-004721H), one transmission tower that was determined to be part of the project alignment (P-190022), and one prehistoric lithic scatter (P-19-100253).

Of the 13 resources that are within, or intersect with, the project alignment, eight have not been evaluated for the CRHR or NRHP (P-19-002145/CA-LAN-002145H, P-19-002150/CA-LAN-002150H, P-19-003131/CA-LAN-003131H, P-19-004720/CA-LAN-004720H, P-19-004721/CA-LAN-004721H, P-19-100253, P-19-186912, and P-19-188492), two have been determined ineligible (P-19-188007 and P-19-190022), two have been determined eligible (P-19-002132/CA-LAN-002132H and P-19-002105/CA-LAN-002105H), and one (P-19-186861) is listed as a contributing element to a district. No previously recorded TCRs listed in the CRHR or a local register were identified during the records search.

Native American Coordination

Sacred Lands File Search and Tribal Outreach

Dudek contacted the NAHC on February 14, 2017, to request a search of the SLF for the proposed project. The NAHC responded via email on February 24, 2017, indicating that the search did not identify any Native American resources near the project area. The NAHC also provided a list of 16 Native American groups and/or individuals who may have knowledge of cultural resources in the project area. On March 24, 2017, Dudek mailed letters to each of the 16 individuals listed on the NAHC consultation list. Additional details on this outreach is provided in Appendix E of this EIR. No Native American cultural resources were identified during the tribal outreach process. This outreach was conducted for informational purposes only and did not constitute formal government-to-government consultation as specified by AB 52, which is discussed in detail in the following section.

Assembly Bill 52

A project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment (PRC Section 21084.2). Under AB 52, a TCR must have tangible, geographically defined properties that can be impacted by project implementation. The proposed project is subject to compliance with AB 52.

On September 2, 2017, LADWP sent notification of the proposed project to all California Native American tribal representatives that have requested project notifications from LADWP pursuant to AB 52 and that are on file with the NAHC as being traditionally or culturally affiliated with the geographic area. These notification letters included a project map and description inquiring if the tribe would like to consult to discuss the project and the potential to impact any TCRs. AB 52 allows tribes 30 days after receiving notification to request consultation. If a response is not received within the allotted 30 days, it is assumed that consultation is declined. To date, government-to-government consultation initiated by LADWP has not resulted in the identification of a TCR within or near the project area. Table 3.9-1 summarizes the results of the AB 52 process for the proposed project. Correspondence related to confidential AB 52 consultation is on file at the offices of LADWP.

Table 3.9-1. Assembly Bill 52 Native American Tribal Outreach Results

Native American Tribal Representatives	Method and Date of Notification	Response to LADWP Notification Letters	Consultation Date
Jairo Avila, Tribal Historic and Cultural Preservation Officer Fernandeño Tataviam Band of Mission Indians (Tribe)	Certified Mail Sent: 9/22/2017 Delivery confirmation: 9/27/2017	10/5/2018: via email; response states the project area is sensitive for cultural resources and recommends that a Native American archaeological representative from the Fernandeño Tataviam Band of Mission Indians be present during all ground disturbing activities. Mr. Avila requested LADWP to include mitigation measures provided by the Tribe). The tribe requested further consultation. Consultation is on going at the time of this writing. 3/14/2018: via email. Response requests consulting party status and discusses cultural sensitivity and potential to encounter archaeological resources within the project area and vicinity. 11/2/2017: via phone and email; response requests consultation and stated that the tribe would provide a formal email requesting consultation.	11/2/2017: Phone call
Andrew Salas, Chairperson Gabrieleno Band of Mission Indians - Kizh Nation	Certified Mail Sent: 9/22/2017 Delivery confirmation: 9/27/2017	9/27/2017: via mail; response requests to initiate formal tribal consultation; LADWP responded to this request via certified mail on 10/3/2017.	10/25/2017: Conference Call
Anthony Morales, Chairperson Gabrieleno/Tongva San Gabriel Band of Mission Indians	Certified Mail Sent: 9/22/2017 Delivery confirmation: 9/27/2017	11/2/2017: via phone; Chairperson Morales expressed interest in participating in monitoring.	--

Table 3.9-1. Assembly Bill 52 Native American Tribal Outreach Results

Native American Tribal Representatives	Method and Date of Notification	Response to LADWP Notification Letters	Consultation Date
Sandonne Goad, Chairperson Gabrielino/Tongva Nation	Certified Mail Sent: 9/22/2017 Delivery confirmation: 9/27/2017 Follow up call: 11/2/2017	No response	--
Robert Dorame, Chairperson Gabrielino Tongva Indians of California Tribal Council	Certified Mail Sent: 9/22/2017 Delivery confirmation: 9/27/2017 Follow up call: 11/2/0217	11/2/2017: via phone; Chairperson Dorame requested project information be sent via email. LADWP complied with this request.	--
Charles Alvarez Gabrielino-Tongva Tribe	Certified Mail Sent: 9/22/2017 Delivery confirmation: none Follow up call: 11/2/0217	No response	--
John Valenzuela San Fernando Band of Mission Indians	Certified Mail Sent: 9/22/2017 Delivery confirmation: 9/27/2017 Follow up call: 11/2/0217	No response	--

Cultural Resources Survey

Intensive-level pedestrian surveys of the project area were conducted in April 2017, January 2018, and January 2019. The surveys were conducted to identify and record any cultural resources that may occur in the project area. The intensive-level surveys utilized standard archaeological procedures in accordance with Secretary of Interior's standards and guidelines for a cultural resources inventory. Where vegetation allowed and slope was 30% or less, pedestrian transects of 49-foot intervals were utilized. Discretionary pedestrian surveys were utilized in areas with a slope over 30% and in heavily vegetated areas where systematic survey was not possible. Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials and to record locational information. The survey area and cultural constituents were photographed using a digital camera.

The CHRIS records search identified 13 previously recorded cultural resources within the project area. Twelve of the 13 previously-recorded resources (P-19-002105/CA-LAN-002105H, P-19-002132/CA-LAN-002132H, P-19-002145/CA-LAN-002145H, P-19-002150/CA-LAN-002150H, P-19-003131/CA-LAN-003131H, P-19-004720/CA-LAN-004720H, P-19-004721/CA-LAN-004721H, P-19-186861, P-19-186912, P-19-188007, P-19-188492, and P-19-190022) were relocated during the pedestrian survey. Site P-19-100253 could not be relocated. As stated above, none of these previously recorded resources have been identified as TCRs. One newly identified archaeological site and three Archaeologically Sensitive Regions (ASRs) were identified during the pedestrian survey. In these areas, artifacts

consistent with historic-era refuse scatters were observed. These areas have not been identified as TCRs. Additional details on these newly recorded sites can be found in Appendix E of this EIR.

3.9.2 Relevant Plans, Policies, and Ordinances

State

California Environmental Quality Act

As described further, the following CEQA statutes (PRC Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and TCRs:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5(b)). If a site is listed or eligible for listing in the CRHR, included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is an "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; 14 CCR 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the

significance of an historical resource would be materially impaired" (14 CCR 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following:

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA (14 CCR 15064.5(b)(2)).

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2(a)–(c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2(g)).

Impacts on non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); 14 CCR 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as a TCR (PRC Sections 21074(c) and 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. Described as follows, these procedures are detailed in PRC Section 5097.98.

The California Register of Historical Resources

In California, the term "historical resource" includes, but is not limited to, "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated as follows. According to Public Resources Code (PRC) Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California State Assembly Bill 52

AB 52 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that TCRs must be considered under CEQA and also provided for additional Native American consultation requirements. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American tribe. A TCR is either:

- On the CRHR or a local historic register; Eligible for the CRHR or a local historic register; or

- 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 Section 5024.1.

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or EIR.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a TCR has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to TCRs, the consultation shall include those topics (PRC Section 21080.3.2(a)). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3(a)).

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (Section 7050.5(b)). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact NAHC within 24 hours (Section 7050.5(c)). NAHC will notify the "most likely descendant." With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

County of Los Angeles General Plan 2035

As depicted on Figure 2-3, portions of the project alignment traverse unincorporated County of Los Angeles lands. Therefore, the County of Los Angeles General Plan 2035 (County of Los Angeles 2015) is a relevant plan for those portions of the alignment. The Conservation and Natural Resources Element provides objectives, policies, and programs regarding cultural resources including the following:

Policy C/NR 14.1
Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.

Policy C/NR 14.2
Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.

Policy C/NR 14.4
Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).

Policy C/NR 14.5
Promote public awareness of historic, cultural, and paleontological resources.

Policy C/NR 14.6
Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

City of Santa Clarita General Plan

The Conservation and Open Space Element of the City of Santa Clarita General Plan identifies cultural resources in the City and provides objectives, policies, and programs to protect such resources, including those listed below (City of Santa Clarita 2011).

Goal CO 5
Protection of historical and culturally significant resources that contribute to community identity and a sense of history.

Objective CO 5.1
Protect sites identified as having local, state, or national significance as a cultural or historical resource.

Policy CO 5.1.1
For sites identified on the Cultural and Historical Resources Map (Exhibit CO-6), review appropriate documentation prior to issuance of any permits for grading, demolition, alteration, and/or new development, to avoid significant adverse impacts. Such documentation may include cultural resource reports, environmental impact reports, or other information as determined to be adequate by the reviewing authority.

Policy CO 5.1.2
Review any proposed alterations to cultural and historic sites identified in Table CO-1 or other sites which are so designated, based on the guidelines contained in the Secretary of the Interior's Standards for the Treatment of Properties (Title 36, Code of Federal Regulations, Chapter 1, Part 68, also known as 36 CFR 68), or other adopted City guidelines.

Objective CO 5.3

Encourage conservation and preservation of Native American cultural places, including prehistoric, archaeological, cultural, spiritual, and ceremonial sites on both public and private lands, throughout all stages of the planning and development process.

Policy CO 5.3.2

For any proposed development project that may have a potential impact on Native American cultural resources, provide notification to California Native American tribes on the contact list maintained by the Native American Heritage Commission that have traditional lands within the City's jurisdiction, and consider the input received prior to a discretionary decision.

City of Los Angeles General Plan

The Conservation Element of the City of Los Angeles General Plan (City of Los Angeles 2001) provides objectives, policies, and programs regarding cultural resources including the following:

Cultural and Historical Objective

Protect important cultural and historical sites and resources for historical, cultural, research, and community educational purposes.

3.9.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to tribal cultural resources are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to tribal cultural resources would occur if the project would:

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:

   i. 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

   ii. 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.

3.9.4 Methodology

The project setting was developed by reviewing information on existing cultural resources and technical data in the project vicinity. The review was supplemented with the results of Native American coordination and pedestrian surveys. The methods and results herein were derived from the Cultural Resources Assessment that is included in this EIR as Appendix E.

3.9.5 Impact Analysis

Threshold A: 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:

i. 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)?

A CHRIS records search was conducted at the SCCIC on February 23, 2017, for the project alignment and surrounding one-mile buffer (the one-mile buffer includes off-site laydown areas). The CHRIS search included a review of mapped prehistoric, historical, and built-environment resources; Department of Parks and Recreation site records; technical reports; archival resources; and ethnographic references. Additional consulted sources included historical maps of the project site, the NRHP, the CRHR, the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, the Archaeological Determinations of Eligibility, the LADWP Records Center, and the LADWP Photographic Collection accessed via the Los Angeles Public Library online archives. The confidential records search results are on file at the offices of LADWP. No previously recorded TCRs listed in the CRHR or a local register were identified within the project area. Further, no TCRs have been identified by California Native American tribes as part of the AB 52 process. As such, impacts would be **less than significant**.

ii. 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.

The NAHC provided LADWP with a list of seven tribes and/or individuals who may have knowledge of cultural resources in the project area. On September 2, 2017, LADWP mailed certified notification letters to all seven contacts provided by the NAHC. Four responses were received via email and/or phone call by LADWP as part of the AB 52 consultation process. These responses are described below.

- On March 14, 2017, Jairo Avila, Tribal Historic and Cultural Preservation Officer of the Fernandeno Tataviam Band of Mission Indians (Tribe), requested consulting party status and stated that the project area is culturally sensitive and may have potential for discoveries of cultural resources. Although the letter did not identify any TCRs or other known cultural resources that could be directly impacted by the project, Mr. Avila requested

that LADWP incorporate measures provided by the Tribe to protect resources in the event that they are discovered during construction.

- One response was received from Chairperson Andrew Salas from the Gabrieleno Band of Mission Indians – Kizh Nation on September 27, 2017. Chairperson Salas requested consulting party status and a follow-up conference call was conducted on October 25, 2017, between LADWP and Mr. Salas in response to the consultation request.
- On November 2, 2017, Chairperson Anthony Morales from the Gabrieleno/Tongva San Gabriel Band of Mission Indians responded via phone call. During the call, Chairperson Morales expressed interest in participating in monitoring activities associated with the project.
- A response was received on November 2, 2017, via phone call from Chairperson Robert Dorame from the Gabrielino Tongva Indians of California Tribal Council. During that call, Chairperson Dorame requested that project information be sent to him via email.

LADWP has determined that no TCRs are present in the project area. However, the AB 52 consultation between LADWP and Mr. Avila suggests that there is still some potential for unknown subsurface TCRs to be impacted by the project. In the event that unknown subsurface TCRs are uncovered during construction ground disturbance, and such resources are not identified and avoided or properly treated, a potentially significant impact could result. However, mitigation measures MM-TCR-1, MM-TCR-2, MM-TCR-3, and MM-TCR-4 would protect TCRs, in the event that any were discovered during project construction. Upon implementation of MM-TCR-1, MM-TCR-2, MM-TCR-3, and MM-TCR-4, impacts would be **less than significant with mitigation incorporated**.

3.9.6 Mitigation Measure(s)

While no TCRs have been identified that may be affected by the project, the following approach for the unanticipated discovery of TCRs has been included to reduce potential impacts to previously uncovered resources, in the event that they are present in areas of construction ground disturbance.

MM-TCR-1

Construction Monitoring. A Native American monitor shall be present to accompany archaeologists during any necessary archaeological fieldwork (such as survey, test excavations, data recovery) that may be required, and to observe initial ground disturbance during construction, including clearing/grubbing, grading, excavation, trenching, and auguring.

(1) The Los Angeles Department of Water and Power (LADWP) will provide the archaeologist and the interested Tribe(s) with a weekly construction schedule identifying all ground disturbing activities within the monitoring area.

(2) The Native American Monitor shall photo-document ground disturbing activities and maintain a daily monitoring log that contains descriptions of the daily construction activities, locations with diagrams, soils, and documentation of tribal cultural resources identified. The monitoring log and

photo documentation, accompanied by a photo key, shall be submitted to LADWP upon completion of the aforementioned earthwork activity.

(3) In the event that Native American cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards shall assess the find (MM-TCR-4). If the unanticipated resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in MM-CUL-1. The archaeologist and Tribal monitor will have the authority to request ground disturbing activities cease within the area of a discovery. Work on the other portions of the project outside of the buffered area may continue during this assessment period.

(4) A sufficient number of archaeological and Tribal monitors shall be present each work day to ensure that simultaneously occurring ground disturbing activities receive thorough levels of monitoring coverage.

MM-TCR-2

Pre-Construction Meeting. Prior to project implementation, a pre-construction meeting shall be held with Los Angeles Department of Water and Power and field personnel, the archaeologist, and Tribal Representative(s). This meeting shall outline all processes for monitoring on the project, review the laws protecting cultural resources, and discuss specific cultural concerns associated with the project area.

MM-TCR-3

Human Remains. If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5 and that code shall be enforced for the duration of the project.

(1) Inadvertent discoveries of human remains and/or funerary object(s) are subject to California State Health and Safety Code Section 7050.5, and the subsequent disposition of those discoveries shall be decided by the Most Likely Descendant (MLD), as determined by the NAHC, should those findings be determined as Native American in origin.

MM-TCR-4

Cultural Resources Treatment Plan. If significant Native American cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, a qualified archaeologist shall be retained to develop an cultural resources Treatment Plan, the drafts of which shall be provided to the interested Tribe(s) for review and comment.

(1) All in-field investigations, assessments, and/or data recovery enacted pursuant to the finalized Treatment Plan shall be monitored by a Native American monitor.

(2) LADWP shall, in good faith, consult with the interested Tribe(s) on the disposition and treatment of any artifacts or other cultural materials encountered during the project.

3.9.7 Level of Significance After Mitigation

If tribal cultural resources are uncovered during construction ground disturbance, implementation of MM-TCR-1, MM-TCR-2, MM-TCR-3, and MM-TCR-4 would ensure that such resources are detected, evaluated for significance, and either avoided or treated properly so as to avoid damage or destruction. As such, implementation of MM-TCR-1, MM-TCR-2, MM-TCR-3, and MM-TCR-4 would ensure that impacts to tribal cultural resources would be less than significant.

3.9.8 References Cited

City of Los Angeles. 2001. "Conservation Element" in City of Los Angeles General Plan. Adopted by City Council September 26, 2001. Accessed January 10, 2019. https://planning.lacity.org/GP_elements.html.

City of Santa Clarita. 2011. "Conservation and Open Space Element" in City of Santa Clarita General Plan. June 2011. Accessed May 1, 2018. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/SantaClaritaGP.html.

County of Los Angeles. 2015. Los Angeles County General Plan 2035. Adopted October 6, 2015. Accessed November 29, 2018. http://planning.lacounty.gov/generalplan/generalplan.

3.10 Energy

This section describes the energy resources present in the proposed project area; discusses applicable federal, state, and regional regulations pertaining to energy; and evaluates the potential effects on energy associated with development of the proposed project.

No comments were received in response to the Notice of Preparation (see Appendix A) with respect to energy consumption. Sources consulted for this analysis are listed in Section 3.10.8.

3.10.1 Existing Conditions

The environmental setting for the proposed project related to electricity, natural gas, and petroleum, including associated service providers, supply sources, and estimated consumption, is discussed below. In summary, in 2016 (the latest calendar year for which data is uniformly available for all three types of energy sources), California's estimated annual energy use included the following:

- Approximately 256,846 gigawatt hours of electricity (Energy Information Administration (EIA) 2018a)
- Approximately 22 billion therms of natural gas (approximately 6 billion cubic feet of natural gas per day) (EIA 2018b)
- Approximately 16 billion gallons of gasoline (California Energy Commission (CEC) 2017a)

Electricity

Electricity usage in California varies substantially by the types of uses in a building, types of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita has remained stable for more than 30 years, while the national average has steadily increased (CEC 2015).

LADWP is the utility provider for the City of Los Angeles (City). LADWP provides electric services to 1.5 million customers, located in the City and in the Owens Valley. According to LADWP, customers consumed approximately 24 billion kilowatt-hours (kWh) of electricity in 2016 (CEC 2018), as shown in Table 3.10-1.

Table 3.10-1. LADWP Electricity Consumption

Type of Use	Electricity Consumption (Millions of kWh)
Agricultural and water pump	29.11
Residential	8,230.37
Commercial Buildings	11,626.86
Commercial other	948.44
Industry	2,317.65
Mining and construction	213.70
Streetlight	128.67
Total Consumption	23,494.80

Source: CEC 2018.
Notes: kWh = kilowatt hour

LADWP receives electric power from a variety of sources. According to the LADWP Briefing Book 2017-2018, 29% of LADWP's power came from renewable energy sources in 2016, including biomass/waste, geothermal, small hydroelectric, solar, and wind sources (LADWP 2017).

Based on recent energy supply-and-demand projections in California, statewide annual peak electricity demand is projected to grow an average of 890 megawatts per year for the next decade, or 1.4% annually, and consumption per capita is expected to remain relatively constant at 7,200–7,800 kWh per person (CEC 2015).

Natural Gas

Statewide

Natural gas is used for cooking and space heating, for generating electricity, and as an alternative transportation fuel. The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers accounted for approximately 30% of the natural gas delivered by California utilities in 2016. Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 70% of the natural gas delivered by California utilities in 2016 (EIA 2018b).

The California Public Utilities Commission (CPUC) regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. California gas utilities may soon also begin receiving biogas into their pipeline systems (CPUC 2017).

In 2012, California customers received 35% of their natural gas supply from basins located in the southwestern United States, 16% from Canada, 40% from the Rocky Mountains, and 9% from basins located within California (CPUC 2017). Natural gas from out-of-state production basins is delivered into California through the interstate natural gas pipeline system. The major interstate pipelines that deliver out-of-state natural gas to California are the Gas Transmission Northwest Pipeline, Kern River Pipeline, Transwestern Pipeline, El Paso Pipeline, Ruby Pipeline, Southern Trails Pipeline, and Mojave Pipeline. The North Baja–Baja Norte Pipeline takes gas off the El Paso Pipeline at the California/Arizona border and delivers it through California into Mexico. The Federal Energy Regulatory Commission regulates the transportation of natural gas on interstate pipelines, and CPUC often participates in Federal Energy Regulatory Commission regulatory proceedings to represent the interests of California natural gas consumers (CPUC 2017).

Most of the natural gas transported through interstate pipelines, as well as some California-produced natural gas, is delivered through the Pacific Gas & Electric (PG&E) and Southern California Gas (SoCalGas) intrastate natural gas transmission pipeline systems (commonly referred to as California's "backbone" natural gas pipeline system). Natural gas on the backbone pipeline system is then delivered into local transmission and distribution pipeline systems or to natural gas storage fields. Some large noncore customers take natural gas directly off the high-pressure backbone pipeline system, and some core customers and other noncore customers take natural gas off the utilities' distribution pipeline systems. CPUC has regulatory jurisdiction over 150,000 miles of utility-owned natural gas pipelines, which transported 82% of the natural gas delivered to California's gas consumers in 2012 (CPUC 2017).

PG&E and SoCalGas own and operate several natural gas storage fields that are located in Northern and Southern California. These storage fields and four independently owned storage utilities (Lodi Gas Storage, Wild Goose Storage, Central Valley Storage, and Gill Ranch Storage) help meet peak-season natural gas demand and allow California natural gas customers to secure natural gas supplies more efficiently (CPUC 2017).

California's regulated utilities do not own any natural gas production facilities. All natural gas sold by these utilities must be purchased from suppliers and/or marketers. The price of natural gas sold by suppliers and marketers was deregulated by the Federal Energy Regulatory Commission in the mid-1980s and is determined by market forces. However, CPUC decides whether California's utilities have taken reasonable steps to minimize the cost of natural gas purchased on behalf of its core customers (CPUC 2017).

SoCalGas

The City of Los Angles, the City of Santa Clarita, and the County of Los Angeles (including the proposed project area) are served by SoCalGas. SoCalGas serves 21.6 million customers in a 20,000-square-mile service area that includes over 500 communities (SoCalGas 2018). Table 3.10-2 presents the total natural gas consumption by SoCalGas in 2016 (the most recent year for which data is available). In 2016, SoCalGas delivered 5,123 million therms of natural gas, with the majority going to residential uses.

Table 3.10-2. SoCalGas Natural Gas Consumption

Type of Use	Natural Gas Consumption (Millions of Therms)
Agricultural and water pump	77.07
Residential	2136.02
Commercial buildings	896.65
Commercial other	56.61
Industry	1,720.06
Mining and construction	236.80
Total Consumption	5,123.20

Source: CEC 2018.

Demand for natural gas can vary depending on factors such as weather, price of electricity, the health of the economy, environmental regulations, energy-efficiency programs, and the availability of alternative renewable energy sources. As previously indicated, natural gas is available from a variety of in-state and out-of-state sources and is provided throughout the state in response to market supply and demand. Complementing available natural gas resources, biogas may soon be available through existing delivery systems, thereby increasing the availability and reliability of resources.

Petroleum

According to the California Energy Commission (CEC), transportation accounts for the majority of California's total energy consumption (CEC 2018). There are more than 35 million registered vehicles in California, and those vehicles

consume an estimated 18 billion gallons of fuel each year (CEC 2017b; Department of Motor Vehicles (DMV) 2018). Gasoline and other vehicle fuels are commercially provided commodities.

Petroleum currently accounts for approximately 92% of California's transportation energy consumption (CEC 2017b). However, technological advances, market trends, consumer behavior, and government policies could result in significant changes in fuel consumption by type and in total. At the federal and state levels, various policies, rules, and regulations have been enacted to improve vehicle fuel efficiency, promote the development and use of alternative fuels, reduce transportation-source air pollutants and greenhouse gas (GHG) emissions, and reduce vehicle miles traveled. Market forces have driven the price of petroleum products steadily upward over time, and technological advances have made use of other energy resources or alternative transportation modes increasingly feasible.

Largely as a result of and in response to these multiple factors, gasoline consumption within the state has declined in recent years, and availability of other alternative fuels/energy sources has increased. The quantity, availability, and reliability of transportation energy resources have increased in recent years, and this trend may likely continue and accelerate (CEC 2017b). Increasingly available and diversified transportation energy resources act to promote continuing reliable and affordable means to support vehicular transportation within the state.

3.10.2 Relevant Plans, Policies, and Ordinances

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Intermodal Surface Transportation Efficiency Act of 1991

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of intermodal transportation systems to maximize mobility and address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, metropolitan planning organizations adopted policies defining the social, economic, energy, and environmental values guiding transportation decisions.

Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century was signed into law in 1998 and builds on the initiatives established in the ISTEA legislation, previously discussed. The act authorizes highway, highway safety, transit, and other efficient surface transportation programs. The act continues the program structure established for highways and transit under ISTEA such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of transportation decisions. The act also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of intelligent transportation systems to help improve operations and management of transportation systems and vehicle safety.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation requires ever-increasing levels of renewable fuels (the RFS) to replace petroleum (EPA 2013, 2015). The U.S. Environmental Protection Agency is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains at least a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in GHG emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as "RFS2" and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel and set separate volume requirements for each one.
- EISA required the U.S. Environmental Protection Agency to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

State

Warren-Alquist Act

The California Legislature passed the Warren-Alquist Act in 1974. The Warren-Alquist Act was created and gives statutory authority to the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for both buildings constructed and appliances sold in California.
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high demand projections, and transferred it to the more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

Senate Bill 1078 (2002)

This bill established the California Renewable Portfolio Standard (RPS) Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill required the CEC to certify the renewable energy resources that are considered eligible for the RPS Program, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

Senate Bills 107 (2006), X1-2 (2011), 350 (2015), and 100 (2018)

Senate Bill (SB) 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% shall come from renewables; by December 31, 2016, 25% shall come from renewables; and by December 31, 2020, 33% shall come from renewables.

SB 350 (2015) requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 33% RPS in 2020 and the 50% RPS in 2030.

SB 100 (2018) increased the standards set forth in SB 350. SB 100 states that 44% of the total electricity sold to retail customers in California per year must be secured from qualifying renewable energy sources by December 31, 2024. This percentage will increase to 52% by December 31, 2027, and 60% by December 31, 2030. SB 100 also sets forth a state policy that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. The bill also requires that achieving 100% zero-carbon electricity does not increase carbon emissions elsewhere in the western grid and that this requirement is not fulfilled through resource shuffling.

Assembly Bill 1007 (2005)

Assembly Bill (AB) 1007 (2005) required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with the other state, federal, and local agencies. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted SB 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, CARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focus on increasing energy efficiencies and the use of renewable resources and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources. Additional information on AB 32 and SB 32 is provided in Section 3.6 of this EIR.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically (every 3 years) to incorporate and consider new energy efficiency technologies and methodologies. The current Title 24 standards are the 2016 Title 24 Building Energy Efficiency Standards, which became effective January 1, 2017. The 2019 Title 24 Building Energy Efficiency Standards, which will be effective January 1, 2020, will further reduce energy used and associated GHG emissions compared to current standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards;

once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018).

Title 24 also includes Part 11, the California Green Building Standards Code (CALGreen). CALGreen institutes mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings, as well as schools and hospitals. The 2016 version of CALGreen became effective on January 1, 2017. The mandatory standards require the following:

- 20% mandatory reduction in indoor water use
- 50% diversion of construction and demolition waste from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency

Integrated Energy Policy Report

CEC is responsible for preparing integrated energy policy reports, which identify emerging trends related to energy supply, demand, conservation, public health and safety, and maintenance of a healthy economy. The CEC's 2015 Integrated Energy Policy Report discusses the state's policy goal to require that new residential construction be designed to achieve zero net energy (ZNE) standards by 2020 and that new non-residential construction be designed to achieve ZNE standards by 2030. Refer to Section 3.6 of this EIR for additional information on the state's ZNE objectives.

State Vehicle Standards

AB 1493 was enacted in 2002 in a response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state to be vehicles whose primary use is noncommercial, personal transportation. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. The 2009–2012 standards reduced GHG emissions by approximately 22% compared to the GHG emissions from the 2002 fleet. The 2013–2016 standards resulted in a reduction of approximately 30% relative to the 2002 fleet emissions.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines controls for smog, soot, and global warming gases with requirements for greater numbers of zero-emission vehicles into a single package of standards called "Advanced Clean Cars." By 2025, when the rules will be fully implemented, global warming gas emissions for new automobiles are expected to decrease by 34%, and smog-forming emissions from new automobiles are expected to decrease by 75% (CARB 2011).

Although the focus of the state's vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of these standards is a reduced demand for petroleum-based fuels.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates. As codified in California Government Code, Section 65080, SB 375 requires Metropolitan Planning Organizations, such as the Southern California Association of Governments (SCAG), to include a Sustainable Communities Strategy (SCS) in its Regional Transportation Plan (RTP). The main focus of the SCS is to plan for growth in a fashion that will ultimately reduce GHG emissions. The SCS is also a part of a bigger effort to address other development issues, including transit and vehicle miles traveled, which influence the consumption of petroleum-based fuels.

Local

Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated Metropolitan Planning Organization for the Southern California region and is the largest Metropolitan Planning Organization in the United States. With respect to air quality planning, GHG emissions, and other regional issues, SCAG has prepared the 2016 RTP/SCS (SCAG 2016). Specifically, the 2016 RTP/SCS links the goals of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging all residents affected by socioeconomic, geographic, and commercial limitations to be provided with fair access. See Section 3.2 in this EIR for additional details on SCAG.

City of Los Angeles Sustainable City Plan

In April 2015, the City of Los Angeles's Sustainable City Plan was released. The plan sets the course for a cleaner environment and a stronger economy, with a commitment to equity as its foundation. The plan is made up of short-term (by 2017) and longer-term (by 2025 and 2035) targets in 14 categories that will advance the City of Los Angeles's environment, economy, and equity (City of Los Angeles 2015). The plan is focused on reducing GHG emissions in the City. Because energy use in buildings is a primary source of GHG emissions in the City, many of the strategies to reduce GHG emissions would provide co-benefits resulting in reductions to energy use within the City. See Section 3.6 in this EIR for additional information on the City of Los Angeles's Sustainable City Plan.

City of Santa Clarita Climate Action Plan

The City of Santa Clarita's City Council adopted a Climate Action Plan (CAP) in August 2012 and certified an accompanying EIR. The CAP meets the criteria in CEQA Guidelines 15183.5(b) for a "plan to reduce GHG emissions." The CAP commits the City to reduce community-wide GHG emissions by 4% below 2005 levels by 2020, consistent with the California Global Warming Solutions Act of 2006 (AB 32) and the related scoping plans. Similar to the City of Los Angeles's Sustainable Plan, the CAP is focused on reductions of GHG emissions within the City of Santa Clarita. Because energy use in buildings is a primary source of GHG emissions, many of the strategies to reduce GHG emissions

would provide co-benefits resulting in reductions to energy use within the City of Santa Clarita (City of Santa Clarita 2012). See Section 3.6 in this EIR for additional information on the City of Santa Clarita's CAP.

County of Los Angeles Community Climate Action Plan

The County adopted the Community Climate Action Plan (CCAP) in August 2015 (County of Los Angeles 2015). The County's CCAP is intended to address the main sources of the emissions that cause climate change, which include emissions from the energy consumed in buildings and in transportation, as well as the solid waste sent to landfills. The purpose of the County's CCAP is to guide the development, enhancement, and implementation of actions that would reduce the County's GHG emissions by 11% below existing (2010) levels by 2020. As with the City of Los Angeles and City of Santa Clarita climate planning efforts, implementation of the CCAP is anticipated to reduce GHG emissions as well as energy use in the County. See Section 3.6 in this EIR for additional information on the County's CCAP.

3.10.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to energy are based on Appendix G of the CEQA Guidelines, per updates approved on December 28, 2018. (The previous version of the CEQA Guidelines did not include specific threshold questions for the category of energy.) A significant impact related to energy would occur if the project would:

A. Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

B. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.10.4 Methodology

California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate potential proposed project-generated energy demand during construction. Construction of the proposed project would result in energy use primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, worker vehicles, and helicopters. Construction details discussed in Section 3.2 that were used in the air quality analysis are also applicable for the estimation of construction-related energy demand (see Section 3.2 for a discussion of construction emissions calculation methodology and assumptions). For operational energy use, proposed maintenance activities to service the 230 kV line would be similar in nature and scale to existing activity. Therefore, operational energy use was not estimated.

3.10.5 Impact Analysis

Threshold A: Would the project result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction Energy Use

Electricity

Temporary electric power for as-necessary lighting and electronic equipment would be provided by LADWP. The amount of electricity used during construction would be minimal, because typical demand would stem from electricity required to power several construction trailers, which would be used by managerial staff during the hours of construction activities, in addition to electrically powered hand tools. The majority of the energy used during construction would be from petroleum rather than electricity. The electricity used for construction activities would be temporary and minimal; therefore, proposed project construction would not result in wasteful, inefficient, or unnecessary consumption of electricity. Impacts would be **less than significant**.

Natural Gas

Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel, aviation gasoline, and gasoline, which are discussed under the subsection "Petroleum." Any minor amounts of natural gas that may be consumed as a result of proposed project construction would be temporary and negligible and would not have an adverse effect; therefore, proposed project construction would not result in wasteful, inefficient, or unnecessary consumption of natural gas. Impacts would be **less than significant**.

Petroleum

Petroleum would be consumed throughout construction. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction. Transportation of construction materials and construction workers would also result in petroleum consumption. Heavy-duty construction equipment, vendor trucks, and haul trucks would use diesel fuel. Construction workers would likely travel to and from the project area in gasoline-powered vehicles. Helicopters would use aviation gasoline.

Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. Construction is expected to take approximately 4 years, beginning in 2019 and ending in 2023. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2016). The estimated diesel fuel use from construction equipment is shown in Table 3.10-3.

Table 3.10-3. Construction Equipment Diesel Demand

Construction Phase	Pieces of Off-Road Equipment	CO_2 Emissions (MT)	kg CO_2/Gallon of Diesel Fuel	Gallons of Diesel Fuel
Switching Station Tie-ins and Upgrades	6	1,038.82	10.21	101,745.35
Demolition (Removal of 115 kV Line)	9	2173.39	10.21	212,868.76
Site Preparation	8	1,797.59	10.21	176,061.70
Site Rehabilitation	0	0	10.21	0
Transmission Structure Installation and Conductor Stringing	6	640.71	10.21	62,753.18
			Total	553,428.99

Sources: Appendix C (pieces of equipment and equipment CO_2); The Climate Registry 2016 (kg/CO_2/gallon).
Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton

Fuel consumption from worker, vendor, and haul truck trips is estimated by converting the total CO_2 emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline fueled, and vendor/hauling vehicles are assumed to be diesel fueled. Fuel consumption from helicopter use is estimated by converting their total CO_2 emissions to gallons using the conversion factors from CO_2 to gallons of aviation gasoline. Calculations for total worker, vendor, hauler, and helicopter fuel consumption are provided in Table 3.10-4, Table 3.10-5, Table 3.10-6, and Table 3.10-7, respectively.

Table 3.10-4. Construction Worker Vehicle Gasoline Demand

Construction Phase	Worker Vehicle Trips	Vehicle CO_2 Emissions (MT)	kg CO_2/Gallon of Gasoline	Gallons of Gasoline
Switching Station Tie-ins and Upgrades	66,540	314.53	8.78	35,823.46
Demolition (Removal of 115 kV Line)	19,580	91.73	8.78	10,447.61
Site Preparation	39,160	183.46	8.78	20,895.22
Site Rehabilitation	7,832	36.69	8.78	4,178.82
Transmission Structure Installation and Conductor Stringing	23,496	110.08	8.78	12,537.59
			Total	83,882.69

Sources: Appendix C (construction worker CO_2); The Climate Registry 2016 (kg/CO_2/gallon).
CO_2 = carbon dioxide; kg = kilogram; MT = metric ton

Table 3.10-5. Construction Vendor Truck Diesel Demand

Construction Phase	Vendor Truck Trips	Vehicle CO_2 Emissions (MT)	kg/CO_2/Gallon of Diesel	Gallons of Diesel
Switching Station Tie-ins and Upgrades	35,488	429.94	10.21	42,109.70
Demolition (Removal of 115 kV Line)	19,580	236.53	10.21	23,166.50
Site Preparation	7,832	94.65	10.21	9,270.32
Site Rehabilitation	11,748	141.96	10.21	13,904.02

Table 3.10-5. Construction Vendor Truck Diesel Demand

Construction Phase	Vendor Truck Trips	Vehicle CO_2 Emissions (MT)	kg/CO_2/Gallon of Diesel	Gallons of Diesel
Transmission Structure Installation and Conductor Stringing	39,160	662,47	10.21	64,884.43
			Total	153,334.97

Sources: Appendix C (vendor truck CO_2); The Climate Registry 2016 (kg/CO_2/gallon).
Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton

Table 3.10-6. Construction Haul Truck Diesel Demand

Construction Phase	Haul Truck Trips	Vehicle CO_2 Emissions (MT)	kg CO_2/Gallon of Diesel	Gallons of Diesel
Switching Station Tie-ins and Upgrades	0	0	10.21	0
Demolition (Removal of 115 kV Line)	300	11.05	10.21	1,082.27
Site Preparation	0	0	10.21	0
Site Rehabilitation	0	0	10.21	0
Transmission Structure Installation and Conductor Stringing	40	17.41	10.21	1,705.19
			Total	2,787.46

Sources: Appendix C (haul truck CO_2); The Climate Registry 2016 (kg/CO_2/gallon).
Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton

Table 3.10-7. Construction Helicopter Fuel Demand

Construction Phase	Pieces of Equipment	Helicopter CO_2 Emissions (MT)	kg CO_2/Gallon of Fuel	Gallons of Fuel
Conductor stringing helicopter	1	109.64	8.31	13,193.31
Transmission structure removal/ installation helicopter	1	376.67	8.31	45,327.48
			Total	58,520.79

Sources: Appendix C (helicopter CO_2); The Climate Registry 2016 (kg/CO_2/gallon).
Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton

As shown in Tables 3.10-4 through 3.10-7, the proposed project is estimated to consume 851,955 gallons of petroleum during construction. By comparison, approximately 58.7 trillion gallons of petroleum would be consumed in California over the course of the proposed project's construction period, based on the California daily petroleum consumption estimate of approximately 52.9 million gallons per day (EIA 2017). The proposed project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Compliance with this measure may result in further reductions in the amount of fuel that is used during construction, since diesel-powered equipment would not likely be running for full work days. Therefore, because petroleum use during construction would be temporary and minimal and would not be wasteful or inefficient, impacts would be **less than significant**.

Operational Energy Use

Maintenance

As discussed in in Chapter 2 of this EIR, maintenance activities for the proposed 230 kV transmission line would be similar in scope and scale to the maintenance activities that are currently conducted for the existing line that would be removed. Therefore, maintenance activities would be similar to existing baseline conditions, and proposed energy demand for maintenance would be similar to existing conditions. In fact, energy used for maintenance purposes would decrease over time, as worker vehicles and equipment becomes increasing efficient, in accordance with the energy efficiency and GHG reduction standards summarized in Section 3.10.2. As such, energy use for maintenance purposes would not substantially change under the proposed project, and **no impacts** would occur as a result of project maintenance.

Electrical Transmission

As described throughout this EIR, the proposed project is a transmission line project that would replace an existing 115 kV line with a 230 kV line, thereby accommodating increased loads in the South of Haskell Corridor. One of the key purposes of the project is to assist LADWP in reducing GHG emissions and increasing its renewable energy portfolio. As such, the proposed project would not deliver additional electricity to the Los Angeles basin for the purpose of expanding electricity use in LADWP's service area. Rather, the proposed project would contribute to an overall effort to replace existing non-renewable electricity sources with renewable electricity sources. As such, the proposed project is not anticipated to have a material effect on the amount of electricity available in the LADWP service area and, therefore, would not cause an increase in energy use. Furthermore, the energy transmitted by the proposed project would be produced by renewable resources. Use of this energy would not result in wasteful or inefficient consumption of energy resources; rather, it would contribute towards the achievement of the goals and policies described in Section 3.10.2 that are intended to reduce the use of nonrenewable resources. Additionally, the regulatory framework that includes GHG reduction measures and RPS requirements also includes a variety of measures to reduce overall energy demand. As such, when the renewable energy from the proposed project comes online in the mid-2020s, electricity use in the Los Angeles basin is expected to be more efficient and less wasteful. For these reasons, operation of the proposed project would not cause wasteful, inefficient, or unnecessary consumption of energy, resulting in a potentially significant environmental impact, and **no impact** would occur.

Threshold B: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The proposed project would follow applicable energy standards and regulations during the construction phases. In addition, the proposed project would be built and operated in accordance with all existing, applicable regulations at the time of construction. Additionally, as discussed in Chapter 2 of this EIR, one of the project's primary objectives is to allow for increased transmission of renewable energy from the Tehachapi Mountains and Mojave Desert areas to the Los Angeles basin. The project would help LADWP meet its GHG reduction goals by increasing the amount of energy use in the City of Los Angeles that is generated by renewable resources. While energy consumption would be required

during construction, operation of the project would ultimately assist in the implementation of state and local plans for renewable energy. As such, impacts related to conflicts with plans for renewable energy and energy efficiency would be **less than significant**.

3.10.6 Mitigation Measure(s)

Impacts were determined to be less than significant and, therefore, no mitigation measures are required.

3.10.7 Level of Significance After Mitigation

Impacts were determined to be less than significant and no mitigation measures are required.

3.10.8 References Cited

77 FR 62624–63200. Final Rule: "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards." October 15, 2012.

CAPCOA (California Air Pollution Control Officers Association). 2017. *California Emissions Estimator Model (CalEEMod) User's Guide*. Version 2016.3.2. Prepared by BREEZE Software, a Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts. November 2017. Accessed April 2018. http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6.

CARB (California Air Resources Board). 2011. *Facts About the Advanced Clean Cars Program*. Revised November 9, 2011. Accessed April 2018. https://www.arb.ca.gov/msprog/zevprog/factsheets/advanced_clean_cars_eng.pdf.

CEC. 2015. *2016 Building Energy Efficiency Standards Frequently Asked Questions*. Accessed April 2018. http://energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.

CEC. 2017a. *California Energy Demand Updated Forecast, 2017–2027*. CEC-200-2014-009-CMF. January 2017. Accessed May 2018. http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-05/TN215745_20170202T125433_FINAL_California_Energy_Demand_Updated_Forecast_20172027.pdf.

CEC. 2017b. *2016 Weekly Fuels Watch Report*. Accessed April 2018. http://www.energy.ca.gov/almanac/petroleum_data/fuels_watch/reports/2016_Weekly_Fuels_Watch_RPT.xlsx.

CEC. 2018. "Electricity Consumption by Entity." Accessed July 2018. http://www.ecdms.energy.ca.gov/elecbyutil.aspx.

City of Los Angeles. 2015. *Sustainable City Plan*. April. Accessed October 2017. https://www.lamayor.org/sites/g/files/wph446/f/landing_pages/files/The%20pLAn.pdf.

City of Santa Clarita 2012. *Climate Action Plan*. August 2012. http://greensantaclarita.com/files/2012/10/APPROVED-CAP-AUGUST-2012.pdf.

County of Los Angeles 2015. *Community Climate Action Plan.* August 2015. http://planning.lacounty.gov/assets/upl/project/ccap_final-august2015.pdf.

CPUC. 2017. "Natural Gas and California." January 2017. Accessed April 2018. http://www.cpuc.ca.gov/natural_gas/.

DMV (California Department of Motor Vehicles). 2018. *Statistics for Publication, January through December 2017*. March 2018. https://www.dmv.ca.gov/portal/wcm/connect/5aa16cd3-39a5-402f-9453-0d353706cc9a/official.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=5aa16cd3-39a5-402f-9453-0d353706cc9a.

EIA (U.S. Energy Information Administration). 2017. California Profile Data. Updated October 19, 2017. Accessed December 2018. https://www.eia.gov/state/data.php?sid=CA#ConsumptionExpenditures.

EIA (U.S. Energy Information Administration). 2018a. "California Electricity Profile 2016." EIA, Electricity. Released January 25, 2018. Accessed April 2018. https://www.eia.gov/electricity/state/california/index.php.

EIA. 2018b. "Natural Gas Consumption by End Use (California, 2016)." EIA, Natural Gas. Released January 31, 2018. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.

EPA (U.S. Environmental Protection Agency). 2013. "Renewable Fuel Standard (RFS)." Last updated December 10, 2013. Accessed April 2018. http://www.epa.gov/otaq/fuels/renewablefuels/.

EPA. 2015. "Overview for Renewable Fuel Standard." Last updated September 28, 2015. Accessed April 2018. https://www.epa.gov/renewable-fuel-standard-program/program-overview-renewable-fuel-standard-program.

LADWP (Los Angeles Department of Water and Power) 2017. *Briefing Book 2017-2018*. August 2017. Accessed December 2018. https://s3-us-west-2.amazonaws.com/ladwp-jtti/wp-content/uploads/sites/3/2017/09/08143247/Briefing-Book-Rolling-PDF.pdf.

SCAG (Southern California Association of Governments). 2012. *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy*. Adopted April 2012. Accessed December 2016. http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx.

SCAG. 2016. *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*. Adopted April 2016. Accessed December 2016. http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

SoCalGas (Southern California Gas). 2018. Company Profile. Accessed April 2018. https://www.socalgas.com/about-us/company-profile.

The Climate Registry. 2016. Default Emission Factors. April 19, 2016. Accessed December 2017. https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf.

3.11 Electric and Magnetic Fields

This section provides information regarding electric and magnetic fields (EMFs) associated with electric utility lines. Comments received in response to the Notice of Preparation (see Appendix A) included concerns regarding health effects of the proposed increase in voltage for individuals living near the project alignment. This section does not consider potential health risks associated with EMF exposure, specifically exposure to magnetic fields, as there is no consensus in the scientific community regarding health risks associated with EMF exposure and, therefore, conclusions regarding this concern cannot be reached in this discussion. However, information regarding research on EMF associated with utilities facilities is presented in this section to allow an understanding of the issue by the public and decision makers.

Information contained in this section is based on the *Electric and Magnetic Field Scientific and Regulatory Review* prepared for the proposed project by Golder Associates Inc. (see Appendix H). Other sources consulted are listed in Section 3.11.7.

3.11.1 Defining Electric and Magnetic Fields

Electric fields and magnetic fields are distinct phenomena that occur both naturally and as a result of human activity across a broad spectrum. Naturally occurring electric and magnetic fields are caused by atmospheric conditions and Earth's geomagnetic field. The fields caused by human activity result from technological application of the electromagnetic spectrum for uses such as communications; appliances; and the generation, transmission, and local distribution of electricity. Electric and magnetic fields are vector quantities that have the properties of direction and amplitude (field strength).

Electric power in California (as in the rest of North America) is predominantly transmitted in the form of a 60-Hertz (Hz) alternating current carried through electric circuits. The electric charges move back and forth 60 times per second. As the electrons move, they generate two types of distinct fields: electric fields and magnetic fields. Electric fields are created by the energy in the electrons and in the surrounding area; magnetic fields are generated by the movement of those charges. Electric and magnetic fields are distinct forces at 60 Hz, but because of their mutual occurrence, are often referred to as electromagnetic fields (also termed EMF) (Appendix H).

The frequency associated with electricity transmission and use usually generates extremely low frequency fields, compared to the much higher frequencies associated with radio and television waves, ionizing radiation (ultraviolet and X-rays), and cellular telephone signals (Appendix H).

Electric Fields

Electric fields from power lines are created whenever the lines are energized. Electric field strength is directly proportional to the voltage of the line. Electric field strength is typically described in units of kilovolt per meter (kV/m). Electric field strength attenuates (gets weaker) rapidly as the distance from the source increases. Electric fields are reduced at many receptors because they are effectively shielded by most objects or materials such as trees or houses (Appendix H).

Unlike magnetic fields, which penetrate almost everything and are unaffected by buildings, trees, and other obstacles, electric fields are distorted by any object that is within the electric field, including the human body. Measuring an electric field with electronic instruments is difficult because the devices themselves alter the levels recorded. Determining an individual's exposure to electric fields requires an understanding of many variables, including the electric field itself, how effectively a person is grounded, and a person's body surface area within the electric field.

Electric fields in the vicinity of power lines can cause phenomena similar to the static electricity experienced on a dry winter day or with clothing just removed from a clothes' dryer. When a person touches long metal fences, pipelines, or large vehicles within the vicinity of a power line, the person could experience nuisance electric discharges.

Magnetic Fields

Magnetic fields from power lines are created whenever current flows through power lines at any voltage. Magnetic field strength is proportional to the amount of unbalanced current (amps) present at the point of measurement. The non-symmetrical configuration of the conductors on overhead transmission lines creates an imbalance that creates a magnetic field that is measurable more than a few feet away and decreases as the distance between the conductors and the point of measurement increases. Magnetic field strength is typically measured in milligauss (mG) and in microTeslas (μT). Similar to electric field strength, magnetic field strength attenuates rapidly with distance from the source. Unlike electric fields, magnetic fields are not shielded by most objects or materials (Appendix H).

Comparison of Electric and Magnetic Fields

The nature of electric and magnetic fields can be illustrated by considering a household appliance. When the appliance is energized by plugging it into an outlet but not turned on (so no current would be flowing through it), an electric field would be generated around the cord and appliance, but no magnetic field would be present. If the appliance is switched on, the electric field would still be present, and a magnetic field would be created. The electric field strength is directly related to the magnitude of the voltage from the outlet, and the magnetic field strength is directly related to the magnitude of the current flowing in the cord and appliance. Figure 1 in Appendix H summarizes the physics governing EMF generation from electric circuits.

3.11.2 Sources of Electric and Magnetic Fields in the Project Area

EMF exposure to the public in developed areas varies over a range of field intensities and durations due to sources in home and work environments, electric power distribution, and proximity to transmission lines.

The proposed project is a transmission line replacement project in northwestern Los Angeles County. The transmission line replacement would occur within a transmission corridor that currently contains three existing transmission lines: a 500 kV DC line, the 115 kV line that is proposed for replacement as part of this project, and 230 kV lines supported by 4-circuit towers, all of which are current sources of EMF in the project area. All three existing transmission lines are supported by lattice transmission towers (see Figure 2-2 of this EIR for representative images of the existing transmission lines). Land uses adjacent to the transmission corridor include

residential neighborhoods, schools, industrial uses, commercial uses, public facilities, and parks/open space (see Figure 2-3 of this EIR, which shows the land use designations surrounding the transmission corridor). Therefore, residents, students, workers, bicyclists, pedestrians, and motorists may live near or pass within the vicinity of the transmission lines within the corridor, resulting in public exposure to EMFs. The nearest school property is approximately 250 feet from the transmission corridor, and the residences nearest to the 115 kV transmission structures are approximately 35 feet to 45 feet away.

3.11.3 Scientific Background

Electric and Magnetic Field Research

For more than 40 years, researchers have questioned the potential effects that EMFs from power lines may have on the environment. Early studies focused primarily on interactions with the electric fields from power lines. The subject of magnetic field interactions began to receive additional public attention in the 1980s as research increased. A substantial amount of research investigating both electric and magnetic fields has been conducted over the past several decades; however, much of the body of national and international research regarding EMFs and public health risks remains contradictory or inconclusive.

Electric fields are deflected by solid objects, whereas magnetic fields can move through such objects. Therefore, health effects in humans are more a factor of magnetic field proximity and strength, as opposed to electric fields, which are blocked by walls, plants, clothing, and even skin. This section will generally use the term "EMF" to maintain consistency with the scientific literature, but note that most health effects studies discussed below describe the strength of EMF in terms of magnetic field (mG or μT) (Appendix H).

Epidemiological studies on EMFs have provided mixed results. Some studies show an apparent relationship between EMF and health effects, while other similar studies do not. Laboratory studies and studies investigating a possible mechanism for health effects (mechanistic studies) provide little or no evidence to support a link between EMF and health effects (see Appendix H, Section 2.1, for a more detailed description of EMF studies).

The discussion of possible health effects from EMF exposure was initiated in the 1960s by a report of health issues in Russian electrical utility workers and ignited in 1979 by an epidemiological report linking EMF and childhood leukemia. Research into effects associated with EMF exposure in the ensuing decades has been in the form of laboratory studies involving animals or cells and epidemiological studies. (Epidemiology is the study of the rate, or incidence, of a disease in a population, compared with the incidence of an exposure (for example, EMF exposure).) It is important to note that epidemiologists do not conclude causation from their findings but rather report associations between disease rates and exposure rates (Appendix H).

Research on ambient magnetic fields in homes and buildings in several western states found average magnetic field levels within rooms to be approximately 1 mG. In a room with appliances present, the measured values ranged from 9 mG to 20 mG (Severson et al. 1988; Silva et al. 1988). Immediately adjacent to appliances (within 0.5 feet), field values are much higher, as illustrated in Table 3.11-1. This table indicates typical sources and

levels of electric and magnetic field exposure that the general public experiences from appliances. By comparison, the magnetic field generated by a 230 kV, 60-Hz transmission line (such as the one that would be installed upon project implementation) is approximately 60 mG (6 μT) directly beneath the line and 20 mG at the edge of the transmission right-of-way. Within 200 feet of the edge of the right-of-way, the magnetic field drops to less than 2.0 mG, which is the equivalent of standing two feet away from a fluorescent light (Appendix H).

Table 3.11-1. Magnetic Field Exposure from Household Appliances

Source	Magnetic Field Strength at 0.5 feet		Magnetic Field Strength at 2.0 feet	
	mG	*μT*	*mG*	*μT*
Vacuum cleaner	300	30	10	1
Hairdryer	300	30	--	--
Microwave Oven	200	20	10	1
Copy Machine	90	14	7	--
Fluorescent Lights	40	4	2	--
Personal Computer	14	1.4	2	--

Notes: mG = milliGauss; μT = microTesla
Source: Appendix H

Numerous panels of expert scientists have convened to review data on whether exposure to power-frequency EMFs is associated with adverse health effects (see Appendix H, Sections 2.1 and 2.2, for details). These evaluations have been conducted in order to advise governmental agencies or professional standard-setting groups. There are studies in the scientific literature that associate EMF exposure at a wide range of frequencies with health conditions in animals and/or humans, including Alzheimer's disease, amyotrophic lateral sclerosis (ALS, or Lou Gehrig's disease), depression or suicide, increased stress, poor sleep quality, miscarriage, genetic damage or cell death, tumor promotion, leukemia, decreased melatonin levels, and breast cancer. However, numerous studies negate the link between EMF exposure and physiological or health effects.

The International Commission on Non-Ionizing Radiation Protection (ICNIRP), a group made up of scientists from a variety of countries, conducts periodic literature reviews on EMF research and also generates guidelines for recommended EMF exposure limits. The latest ICNIRP literature review, published in 2010, notes that "the currently existing scientific evidence does not lead to the conclusion that a prolonged exposure to [low frequency EMF] is a cause of childhood leukemia. Evidence for cancer in adults from [low frequency EMF] exposure is very weak. There is no substantial scientific evidence for an association between [low frequency EMF] exposure and Parkinson's disease, multiple sclerosis, developmental and reproductive effects, and cardiovascular diseases, while for Alzheimer´s disease and amyotrophic lateral sclerosis the evidence is inconclusive. Studies of symptoms, sleep quality, cognitive function have not provided consistent evidence of an effect from this type of exposure. Overall research has not shown to date that long-term [low frequency EMF] exposure has detrimental effects on health" (ICNIRP 2010a, as cited in Appendix H).

In addition to the uncertainty regarding the health risk posed by EMFs, studies and scientific panels have not been able to determine or reach consensus regarding what level of EMF exposure might constitute a health risk.

Methods to Reduce Electric and Magnetic Fields

EMF levels from transmission lines can be reduced in three primary ways: shielding, field cancellation, or increasing the distance from the source. Shielding, which reduces exposure to electric fields, can be actively accomplished by placing trees or other physical barriers along the transmission line right-of-way. Shielding also results from existing structures the public may use or occupy. Electric fields can be substantially reduced by most building materials, but common materials do not effectively shield magnetic fields.

Magnetic fields can be reduced either by cancellation or by increasing distance from the source. Cancellation is achieved in two ways. A transmission line circuit consists of three phases, requiring three separate wires (conductors) on a transmission tower. The configuration of these three conductors can reduce magnetic fields. First, when the configuration places the three conductors closer together, interference, or cancellation, of the fields from each wire is enhanced. This technique has practical limitations because of the potential for short circuits if the wires are placed too close together. There are also worker safety issues to consider if spacing is reduced. Second, in instances where there are two circuits (more than three phase wires), cancellation can be accomplished by arranging phase wires from the different circuits near each other.

Additionally, the distance between the source of EMF fields and the public can be increased by either placing the wires higher above ground or by increasing the width of the transmission right-of-way. These methods can prove effective in reducing EMF fields because the field strength drops rapidly with distance.

3.11.4 Electric and Magnetic Field Exposure Guidelines

A number of counties, states, and local governments have adopted or considered regulations or policies related to EMF exposure. The reasons for these actions have been varied; in general, however, the actions can be attributed to addressing public reaction to and perception of EMFs as opposed to responding to the findings of conclusive scientific research.

State

Currently, the state of California has not adopted exposure limits for power-frequency electric or magnetic fields. However, some agencies have published guidelines pertaining to EMFs, as described below.

California Public Utilities Commission Guidelines

In 1991, the CPUC initiated an investigation into electric and magnetic fields associated with electric power facilities. This investigation explored the approach to potential mitigation measures for reducing public health impacts and possible development of policies, procedures, or regulations.

Following input from interested parties, the CPUC implemented a decision (D.93-11-013) that addresses public concern relative to EMF with a combination of education, information, and precaution-based approaches. Under Decision 93-11-013, utilities that are regulated by the CPUC are required to implement "low cost or no-cost" measures to reduce EMF. The CPUC did not adopt any specific numerical limits or regulations on EMF levels related to electric power facilities.

Decision D.93-11-013 consists of the following provisions to address EMF (CPUC 1993):

- No-cost and low-cost steps to reduce EMF levels
- Workshops to develop EMF design guidelines
- Uniform residential and workplace EMF measurement programs
- Stakeholder and public involvement
- A 4-year education program
- A 4-year non-experimental and administrative research program
- An authorization of federal experimental research conducted under the National Energy Policy Act of 1992

In 2006, the CPUC affirmed the low-cost/no-cost policy to reduce EMF exposure from new utility transmission and substation projects in Decision 06-01-042 (CPUC 2006a). This decision also adopted rules and policies to improve utility design guidelines for reducing EMFs that were issued in a separate report (CPUC 2006b). The CPUC stated that "at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences" (CPUC 2006a).

Examples of low-cost or no-cost measures include structure heights that increase the distance between receptors and electrical lines, double-circuit construction that reduces spacing between circuits (as compared with single-circuit construction), arrangement of conductors for magnetic field reduction, and placing substation equipment away from the substation property lines when they are close to populated areas.

At this time, the CPUC does not require utilities that it regulates to implement specific measures that are based on numeric values of EMF exposure, nor has it adopted any specific limits or regulations on EMF levels related to electric power facilities.

Local

Los Angeles Department of Water and Power

LADWP applies no-cost and reasonable low-cost steps to minimize EMF exposure from new or upgraded facilities in accordance with the CPUC Commission Decision 93-11-013. The no-cost and low-cost criteria consider the public concern about magnetic fields, the existing scientific information, and prudent utility practices (LADWP 2019).

National and International Guidelines

Although the U.S. Environmental Protection Agency (EPA) has conducted investigations into EMFs related to power lines and health risks, no national standards have been established. There have been a number of studies sponsored by the EPA, the Electric Power Research Institute, and other institutions. Several bills addressing EMFs have been introduced at the congressional level and have provided funding for research; however, no bill has been enacted that would regulate EMF levels.

The 1999 National Institute of Environmental Health Sciences report to Congress suggested that the evidence supporting EMF exposure as a health hazard was insufficient to warrant aggressive regulatory actions. The report suggested passive measures to educate the public and regulators on means aimed at reducing exposures. The report also suggested the power industry continue its practice of siting lines to reduce public exposure to EMFs and to explore ways to reduce the creation of magnetic fields around lines. According to National Institute of Environmental Health Sciences, the strongest EMF around the outside of a substation comes from the power lines entering and leaving the substation. The strength of the EMF from equipment within the substations, such as transformers, reactors, and capacitor banks, decreases rapidly with increasing distance. Beyond the substation fence or wall, the EMF produced by the substation equipment is typically indistinguishable from background levels (NIEHS 2002).

The ICNIRP updated its low frequency EMF guidelines in 2010 based on its review of the science at the time, again recommending exposure limits based on protecting against perception of surface electric charge or direct stimulation of nerve or muscle tissue, and for the first time, protection against induction of excitable cells in the retina. According to an ICNIRP Fact Sheet on its guidelines, the scientific data available did not indicate that low-frequency EMF would have an adverse impact on human health, noting that scientific evidence for a causal link to childhood leukemia available at the time was too weak to form the basis for an exposure guideline (Appendix H).

Guidelines from the ICNIRP for protection from exposure to low-frequency EMFs are listed in Table 3.11-2. The exposure limits were calculated using safety factors to provide maximum protection to an exposed individual and are applicable to transmission lines emitting EMF at power frequencies (e.g., extremely low frequencies of 50 to 60 Hz) (Appendix H).

Table 3.11-2. Guidelines for Electric and Magnetic Field Exposure Limits

Exposure at Power Frequency (50 Hz)	Electric Field Strength kV/m	Magnetic Field Strength (μT)	Magnetic Field Strength (mG)
Occupational Exposure	10	1,000	10,000
General Public Exposure	5	200	2,000

Notes: Hz = Hertz; kV/m = kilovolts per meter; μT = microTesla; mG = milliGauss
Source: Appendix H

The International Radiation Protection Association, in cooperation with the World Health Organization, has published recommended guidelines for electric and magnetic field exposures. For the general public, the limits are 4.2 kV/m for electric fields and 833 mG for magnetic fields. These organizations have neither governmental authority

nor recognized jurisdiction to enforce these guidelines. However, because they were developed by a broad base of scientists, these guidelines have been given merit and are considered by utilities and regulators when reviewing EMF levels from electric power lines.

3.11.5 Electric and Magnetic Fields from the Proposed Project

The specific EMF sources associated with the proposed project consist of the proposed 230 kV transmission line, which would replace an existing 115 kV line within an established 250-foot transmission corridor. The existing 500 kV DC line and the existing 230 kV lines on 4-circuit towers would remain in place. The transmission corridor extends through urban areas, including residential neighborhoods, schools, commercial areas, and industrial areas, as well as natural, open space areas. The proposed transmission structures would be 100 feet to 200 feet in height and would be taller than the existing 54-foot to 156-foot lattice towers supporting the 115 kV line, most of which would be removed. The increased tower height would increase the vertical distance between receptors and the new transmission lines, likely resulting in reduced electric and magnetic fields at the edge of the transmission corridor right-of-way relative to existing conditions. As described in Section 3.11.1, the strength of both electric and magnetic fields decreases with distance. Under existing conditions, the residences nearest to the 115 kV transmission structures are approximately 35 feet to 45 feet away. Under proposed conditions, the replacement structures nearest to these residences would be 120 feet to 140 feet away, thereby increasing the horizontal distance between the residences and the replacement transmission line. Overall, the proposed structure locations were selected by LADWP to minimize effects to sensitive resources and adjacent land uses, including nearby schools and residential uses, to the extent feasible.

The proposed project design (structure height and right-of-way width) suggests that the electric field at the edge of the transmission corridor right-of-way produced by the proposed 230 kV line would be less than 1.5 kV/m and the magnetic field would be less than 20 mG. These potential EMF exposures to an individual standing at the edge of the right-of-way would be less than ICNIRP guidelines for EMF exposure limits for the general public (Appendix H).

3.11.6 Conclusions

After several decades of study regarding potential public health risks from exposure to EMF, research results remain inconclusive. Several national and international panels have conducted reviews of data from multiple studies and state that there is not sufficient evidence to conclude that EMF causes cancer or other adverse health effects. Furthermore, there are no applicable regulations that dictate or limit EMF levels from power lines. Nevertheless, LADWP recognizes and adheres to CPUC's decisions requiring "low cost" or "no cost" measures, where applicable, for managing EMF from transmission lines. Therefore, the proposed project incorporates low-cost and no-cost measures to reduce EMF as feasible. These measures include height of transmission structures to increase the distance between transmission lines and receptors on the ground, use of a double-circuit design to reduce space between circuits (as opposed to a single-circuit design), and siting of transmission structures to increase distance between the transmission lines and receptors, to the extent practicable. Furthermore, as described in Section 3.11.5, EMF exposures from the proposed project would fall below recommended exposure limits developed by the ICNIRP.

3.11.7 References Cited

CPUC (California Public Utilities Commission). 1993. "Order Instituting Investigation on the Commission's Own Motion to Develop Policies and Procedures for Addressing the Potential Health Effects of Electric and Magnetic Fields of Utility Facilities." Decision No. 93-11-013, Investigation No. 91-01-012. November 2, 1993. Accessed February 8, 2019. http://www.cpuc.ca.gov/Environment/emf/emfopen.htm.

CPUC. 2006a. "Opinion on Commission Policies Addressing Electromagnetic Fields Emanating from Regulated Utility Facilities." Decision 06-01-042. January 26, 2006. Accessed February 7, 2019. http://docs.cpuc.ca.gov/publishedDocs/published/FINAL_DECISION/53181.htm.

CPUC. 2006b. EMF Design Guidelines for Electrical Facilities. July 21, 2006. Accessed February 7, 2019. http://www.cpuc.ca.gov/General.aspx?id=4879.

LADWP (Los Angeles Department of Water and Power). 2019. "LADWP Position Statement: Electric and Magnetic Fields." Understanding Electric & Magnetic Fields. LADWP Webpage. Accessed February 1, 2019. https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-inourcommunity/a-ioc-yoursafety?_adf.ctrl-state=n6tn5ak93_4&_afrLoop=803689041916779.

NIEHS (National Institute of Environmental Health Sciences). 2002. "Electric and Magnetic Fields Associated with the Use of Electric Power." sponsored by the NIEHS/DOE EMF RAPID Program. June 2002. Accessed January 21, 2019. https://www.niehs.nih.gov/health/assets/docs_a_e/emf_electric_and_magnetic_fields_associated_with_the_use_of_electric_power_508.pdf.

Severson, R.K., R.G. Stevens, W.T. Kaune, D.B. Thomas, L. Heuser, S. Davis, and L.E. Sever. 1988. "Acute Nonlymphocytic Leukemia and Residential Exposure to Power Frequency Magnetic Fields." *American Journal of Epidemiology* 128 (1):10–20.

Silva, M., N.P. Hummon, D. Rutter, C. Hooper. 1988. "Power Frequency Magnetic Fields in the Home." Institute of Electrical and Electronics Engineers, No. 88 WM 101-8.

INTENTIONALLY LEFT BLANK

4 CUMULATIVE IMPACTS

The CEQA Guidelines requires that an EIR discuss the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. As defined in CEQA Guidelines Section 15065(a)(3), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. This section contains a list of past, current, and probable future projects that could have related impacts and evaluates whether the proposed project's incremental effects are cumulatively considerable in light of the potentially related impacts.

4.1 CEQA Requirements

CEQA Guidelines Section 15130(b) provides the following parameters relative to cumulative impact analysis: the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified related projects contribute, rather than the attributes of other projects which do not contribute to the cumulative impact.

CEQA Guidelines Section 15130 allows for the use of two alternative methods to determine the scope of projects to analyze cumulative impacts. This analysis uses both methods, depending on which environmental issue is being addressed. Table 4-1 shows which methods were used for the each environmental issue area.

- **List Method:** A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the lead agency. These projects will be referred to as "related projects" in this section. Past, present, and probable future projects with the potential to combine with the proposed project to produce cumulative effects are listed and described in Section 4.2.
- **Projection Method:** A summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Applicable plans that are used in this analysis include the 2016 AQMP, the 2016 RTP/SCS, and general plans for the City of Los Angeles, City of Santa Clarita, and County of Los Angeles.

CEQA Guidelines Section 15130 states that lead agencies should define the geographic scope of the area affected by a cumulative effect and provide a reasonable explanation for the geographic limitation that is used. The geographic area that could be affected by implementation of the proposed project in combination with other projects varies depending on the type of environmental resource being considered. For instance, cumulative aesthetics or noise impacts are more localized, whereas cumulative air quality and greenhouse gas emissions impacts occur on a broader regional or global scale. Table 4-1 describes the geographic scope of cumulative impact analysis for each environmental resource category. Also described is the method of evaluation for each category. Additionally details on geographic scope and the reasoning for selection can be found within each issue area discussion in Section 4.3.

Table 4-1. Geographic Scope and Method of Evaluation for Cumulative Impacts

Environmental Resource		Geographic Area and Reason for Selection	Method of Evaluation
Aesthetics		Immediate vicinity	List
Air Quality	Toxic Air Contaminants; Odors	Immediate vicinity	List and Projections
	Construction and Mobile Sources	South Coast Air Basin	
Biological Resources		Santa Clarita Valley and surrounding mountain areas	List and Projections
Cultural Resources		Regional	List
Geology and Soils		Immediate vicinity	List
Greenhouse Gas Emissions		South Coast Air Basin	Projections
Noise	Construction and Operational Sources	Immediate vicinity	List and Projections
	Operational Off-Site Traffic Noise	Regional	
Transportation and Traffic		Regional and Immediate vicinity	List and Projections
Tribal Cultural Resources		Regional	List
Energy		Statewide	Projections

4.2 Related Projects

Related projects are projects that may have impacts that are cumulative with those of the proposed project. Table 4-2 includes approved, under construction, or proposed development projects within the vicinity of the project alignment. These projects could be constructed in a similar time frame as the proposed project (2019 to 2023) and are all located less than a mile from the project alignment. The related projects primarily consist of residential development on currently vacant sites. All of the related projects are located in the City of Santa Clarita. Files of recent development applications within the City of Los Angeles were also reviewed; however, no potentially related projects were identified within the vicinity of the proposed alignment (City of Los Angeles 2018, 2019). For those environmental resources that were evaluated based on the projections approach, the projections take into consideration future, anticipated growth and development consistent with the applicable land use plans and ordinances. For example, future air quality emissions that are projected in the 2016 AQMP are based on demographic growth forecasts from general plans for cities and counties in the SCAB, as well as forecasts in the 2016 RTP/SCS. A brief description of these projects and their expected environmental effects are listed below. Additional information on the related projects can be found from the City of Santa Clarita's website (https://www.santa-clarita.com/city-hall/departments/community-development/planning), and information on these projects is also on file at Santa Clarita City Hall, 23920 Valencia Boulevard, Valencia, California 91355.

Table 4-2. Related Projects

Project Name	Location	Location Relative to Proposed Project	Proposed Land Use	Intensity	Project Status *
Somerset Summit	City of Santa Clarita, between Copper Hill Park and Bouquet Canyon Park (APNs 3244-035-003, -007, and -008)	East of and adjacent to proposed structures 3-1, 3-2, and 3-3	Residential	95 units	Approved; not yet built
Five Knolls and Galloway Senior Housing	City of Santa Clarita, near Five Knolls Drive and Golden Valley Road	Approximately 350 feet east of proposed structure 5-2	YMCA, senior center, senior living units	140 senior living units	Under construction; estimated completion in 2019/2020
Princessa Crossroads	City of Santa Clarita, north of Golden Valley High School, east of Golden Valley Road, and south of the Santa Clarita Valley Sports Complex (215-acre site)	East of and adjacent to proposed structures 6-4, 6-5, and 6-6	Residential	710 units	Environmental review underway; not yet approved
			Commercial	680,000 square feet	
Park Vista	City of Santa Clarita, between Sierra Highway and SR-14; south of Golden Valley Road (APN 2842-004-024 and adjacent smaller parcels; approximately 104-acre site)	Approximately 0.6 mile east of structures 7-4, 7-5, 8-1, 8-2, and 8-3	Residential	109 single-family units; 73 condos	Application submitted; not yet approved
Dockweiler 21	City of Santa Clarita, west of SR-14, between Dockweiler Drive and Sierra Highway (20-acre site)	Approximately 0.25 mile west of proposed structures 9-2 and 9-3 (the transmission corridor is separated from this development site by SR-14)	Residential	96 detached condos	Application submitted; not yet approved

Source: City of Santa Clarita 2019a, 2019b
Notes: * Reflects the project status at the time of this writing.

Somerset Summit. This approved but not-yet-built residential development is located towards the northern end of the proposed project alignment, just east of proposed structure locations 3-1, 3-2, and 3-3. Portions of the development site border the LADWP transmission corridor. The site currently consists of vacant hillside areas, with single-family residential development to the north, east, and south. The transmission corridor (including the proposed project alignment) and Haskell Canyon Channel are located to the west of the site. However, just on the other side (west) of the transmission corridor and channel are more single-family residential hillside neighborhoods. As such, the Somerset Summit project would continue the overall development pattern of the area. The development would result in environmental effects typical of a residential development on currently vacant land. Effects would likely include

aesthetic and biological resource impacts caused by developing vacant hillside property, as well as increased risk of affecting unanticipated cultural resources. Construction and operation would increase vehicle trips, air pollutant emissions, and noise. Operation could result in increased demand for water and public services.

Five Knolls and Galloway Senior Housing. This senior living project has been approved, is currently under construction, and is located in the northern portion of the proposed alignment, near proposed structure 5-2. The senior center and senior residential units are currently under construction, with estimated completion in 2019 and 2020. Some construction may still be occurring during the start of proposed project construction. The western edge of the development is approximately 350 feet from proposed structure location 5-2. Under current conditions, the site is a typical construction site, with graded pads and some completed structures. The site is surrounded by residential development, Golden Valley Park, and vacant hillsides to the north; vacant hillsides to the east; the Santa Clara River to the south; and the transmission corridor to the west. The development would result in environmental effects typical of a senior residential development and community center. Aesthetic effects would occur, due to the introduction of new structures to the environment. Potential effects to biological resources may have occurred from clearing and grading the site. Construction and operation would increase vehicle trips, air pollutant emissions, and noise. Operation could result in increased demand for water and public services.

Princessa Crossroads. This is a mixed-use development on a 215-acre property that is primarily undeveloped and hilly. The project is anticipated to involve development of approximately 710 residential units and 680,000 square feet of business park and retail uses. The development would be located east of proposed structures 6-4, 6-5, and 6-6. Portions of the development would be generally adjacent to the transmission corridor. The development would result in environmental effects typical of a new residential and commercial development on land that was previously vacant. Effects would likely include aesthetic and biological resource impacts caused by developing vacant property, as well as increased risk of affecting unanticipated cultural resources. Construction and operation would increase vehicle trips, air pollutant emissions, and noise. Operation could result in increased demand for water and public services.

Park Vista. This residential project is located near the southern portion of the alignment, near where the alignment crosses the SR-14 before entering open space in the San Gabriel Mountains. The Park Vista project would involve development of approximately 109 single-family homes and 73 condominiums on currently vacant, hillside property. The development site is generally bordered to the north and east by residential developments, to the south by the SR-14, and to the west by vacant hillside areas. The site is approximately 0.6 miles east of proposed structures 7-4, 7-5, 8-1, 8-2, and 8-3. The site is separated from the proposed alignment by Sierra Highway and an oil field. The development would result in environmental effects typical of a new residential development on land that was previously vacant. Effects would likely include aesthetic and biological resource impacts caused by development of vacant land, as well as increased risk of affecting unanticipated cultural resources. Construction and operation would increase vehicle trips, air pollutant emissions, and noise. Operation could result in increased demand for water and public services.

Dockweiler 21. This residential project is also located near the southern portion of the alignment, near where the alignment crosses the SR-14 before entering open space in the San Gabriel Mountains. The Dockweiler 21 site is southwest of the Park Vista site described above. The Dockweiler 21 project would involve development of

approximately 96 condominiums on a currently vacant site. The site is bordered to the north by Dockweiler Drive, to the east and south by Sierra Highway and SR-14, and to the west by residential development. The site is approximately 0.25 miles west of proposed structures 9-2 and 9-3. The site is separated from the transmission corridor by Sierra Highway and SR-14. The development would result in environmental effects typical of a new residential development on land that was previously vacant. Effects would likely include aesthetic and biological resource impacts caused by development of vacant land, as well as increased risk of affecting unanticipated cultural resources. Construction and operation would increase vehicle trips, air pollutant emissions, and noise. Operation could result in increased demand for water and public services.

4.3 Cumulative Impact Analysis

4.3.1 Aesthetics

The geographic scope of the area potentially affected by cumulative aesthetic impacts consists of public vantage points with views to the transmission corridor. This geographic scope was selected because the proposed project would not cause or contribute to cumulative aesthetic impacts in areas where the transmission corridor is not visible. Due to the mountainous and/or developed nature of the project vicinity, this geographic scope is generally limited to public vantage points within 0.5 mile or less from the project alignment. The related projects listed in Section 4.2 are all within this geographic scope.

Scenic Vistas

As described in Section 3.1, scenic vistas in the project area consist of higher elevation trails within Whitney Canyon Park, Quigley Canyon Open Space, and Haskell Canyon Open Space that provide elevated vantage points from which trail-based recreationists can experience the surrounding valley and mountainous terrain. As described in Section 3.1, some of the new transmission structures and the new line may be visible from trails within Haskell Canyon Open Space, Quigley Canyon Park, and Whitney Canyon Park. However, they would occupy a relatively small portion of the visible landscape, would be relatively low in the landscape as viewed from elevated vantage points on ridgeline trails, and would not substantially interrupt or alter the existing views. Additionally, the proposed project involves replacement of existing transmission lines within an established transmission corridor. As such, the proposed project would not result in a land use change. New structures would generally be located where existing structures are currently located in the landscape and, therefore, would not represent a substantial change in the appearance of the transmission corridor. The proposed project by itself would not substantially affect scenic vistas, and its impacts would be less than significant.

Some of the related projects may be visible from the higher elevation trails within Whitney Canyon Park, Quigley Canyon Open Space, and Haskell Canyon Open Space. Specifically, Somerset Summit is in the vicinity of Haskell Canyon Open Space; Princessa Crossroads, Park Vista, and Dockweiler 21 are in the vicinity of Quigley Canyon Open Space; and Park Vista and Dockweiler 21 are in the vicinity of Whiney Canyon Park. This discussion will focus on the potential of these related projects to combine with the proposed project to produce a cumulatively considerable effect on the scenic vistas available from these locations.

The Somerset Summit development site is located approximately 0.15 mile south of Haskell Canyon Open Space and could be visible from trails within the open space area. The northern portion of the project alignment, from the northern terminus to approximately structure location 2-3, extends adjacent to the western border of Haskell Canyon Open Space. As such, both the proposed project and Somerset Summit would have the potential to affect views from Haskell Canyon Open Space. The viewshed experienced from Haskell Canyon Open Space looking towards Somerset Summit and the project alignment contains both existing hillside residential developments as well as a variety of transmission lines. While changes in the visual environment attributable to the proposed project and Somerset Summit may be noticeable from certain vantage points, they would not substantially compromise or obstruct the long, broad scenic views of the Santa Clarita Valley. Rather, Somerset Summit and the proposed project would be appear consistent with existing patterns of development that are visible from Haskell Canyon Open Space, particularly when viewed from the higher elevation trails. Because the proposed project involves installation of tall, thin structures that are geographically dispersed, the project would occupy a relatively small portion of the visible landscape and would not represent a substantial change over existing conditions due to the existing transmission lines in the corridor. For these reasons, the proposed project would not combine with the approved but not-yet-built Somerset Summit residential development to produce a cumulatively considerable impact on scenic vistas available from Haskell Canyon Open Space.

Princessa Crossroads, Park Vista, and Dockweiler 21 developments are all within the general vicinity of Quigley Canyon Open Space and Whintey Canyon Park. Quigley Canyon Open Space is approximately 0.7 mile southwest of the Princessa Crossroads development site, approximately 1 mile west of the Park Vista development site, and approximately 1 mile north of the Dockweiler 21 development site. While these developments could potentially be visible from Quigley Canyon Open Space, they are separated from the open space area by major roadways, vacant hillside areas, and/or other residential developments. As such, if any views to these sites are available, they would be distant, and the new developments are expected to blend in with surrounding, existing development that is similar in nature and appearance to the proposed developments. The proposed alignment is located 0.2 miles from the closest edge of Quigley Canyon Open Space. While the new transmission structures and line would be visible from portions of Quigley Canyon Open Space, new structures would generally be located where existing structures are currently located in the landscape. In addition, new structures would not obstruct scenic features from view and would not substantially interrupt the existing views. As such, the proposed project would not lead to a cumulatively considerable impact on scenic vistas available from Quigley Canyon Open Space.

Whitney Canyon Park is approximately 0.8 mile south of the Park Vista development site and 0.1 mile west of the Dockweiler development site. The Angeles National Forest, located adjacent to and east of Whitney Canyon Park, also has trails from which the proposed project, Park Vista, and Dockweiler 21 may be visible. The cumulative effects would be similar to those described above for Quigley Canyon Open Space. While the proposed project and the identified related projects could be visible from certain vantage points within Whitney Canyon Park and the adjacent Angeles National Forest, both the proposed project and the related projects would be consistent with existing development patterns and land uses that are already visible from trails within Whitney Canyon Park and the nearby Angeles National Forest. The proposed project in particular would replace an existing transmission line with a new transmission line, within a corridor that is already developed with several other transmission lines. As such, while

changes may occur to views available from Whitney Canyon Park and the Angeles National Forest, the proposed project's impacts on scenic vistas would not be cumulatively considerable, and cumulative impacts would therefore be **less than significant**.

Visual Character/Quality

The proposed project, in combination with the related projects, would create changes to the visual environment, which would be seen from public vantage points within the vicinity (approximately 0.5 mile) of the project alignment. Changes caused by the proposed project would consist of removal of the existing 115 kV line and associated lattice transmission structures from the environment and installation of the proposed 230 kV line and associated transmission structures, most of which would be monopoles. In contrast to the tall, geometric, and angular form of steel lattice structures, monopoles display a tall, straight, and solid form that would be noticeably thinner than the relatively wide structures that currently support the 115 kV line. Because the majority of existing structures consist of steel lattice towers and the maximum height of new structures would be greater than existing structures, slight contrasts in form and scale would be noticeable to local area viewers including residents, motorists, and recreationists. Additionally, the new structures would initially look new and more polished in contrast to the existing structures. However, after several years, the color of the new structures would fade to dully grey, becoming similar in color and reflectivity to the other structures along the alignment. As such, any contrasts in color between the new structures and the existing structures would be temporary.

Despite the differences between existing and proposed support structures, relatively weak effects to existing visual character and quality are anticipated from the project alone, as the project proposes to replace existing structures within an established transmission line corridor that supports multiple tall transmission facilities and is an established use in the visual environment.

The related projects would, in general, convert existing vacant hillside properties within the vicinity of the project alignment to residential land uses (with some commercial, for select developments). As described in Section 4.2, the properties that would be developed by the related projects are generally bordered on one or more sides by existing development of a similar nature. As such, the related projects would be generally consistent with existing development patterns in the area. In contrast to the related projects, the proposed project involves upgrades to a previously existing land use. As such, the visual change from the proposed project would be less noticeable when compared to visual changes caused by new development. Furthermore, because the proposed project involves installation of tall, thin structures that are geographically dispersed, the project would occupy a relatively small portion of the visible landscape and would not represent a substantial change over existing conditions due to the existing transmission lines in the corridor. As such, while the proposed project and the related projects would change the visual environment from certain vantage points, the changes attributable to the proposed project would be subtle and dispersed. For these reasons, the proposed project's impacts on visual character and quality would not be cumulatively considerable, and cumulative impacts would therefore be **less than significant**.

Light and Glare

As described in Section 3.1, use of lighting associated with the proposed project would be limited to emergency maintenance scenarios. Use of lighting would be infrequent and lighting would be shielded and focused onto areas of active work. Additionally, this would not represent a change over existing conditions, since maintenance activities for the proposed 230 kV transmission would be similar in scope and scale to those that are currently conducted for the existing 115 kV line. As such, no change in nighttime lighting would occur as a result of the proposed project.

Transmission lines can be a source of daytime glare; however, the proposed project would involve replacement of an existing line that is already an element in the visual environment. The conductors for the existing line and the proposed line are non-specular, meaning that the surface of the conductor has been treated to reduce reflectivity. Because the same type of conductor would be strung along the alignment and because the conductor would be a type with reduced reflectivity, the new 230 kV transmission line would not create a new source of substantial glare that would adversely affect daytime views in the area. Conductor materials would be the same as under existing conditions and to area receptors, the new conductor would generally be indistinguishable from the existing conductor in appearance. The proposed transmission structures would be standard galvanized steel, similar to the other structures within the corridor and throughout the project area. Initially, the structures would look new and more polished in contrast to the existing structures and could be more reflective relative to the existing structures in the corridor. However, after several years, the color of the structures would fade to dull grey, becoming similar in color and reflectivity to the other structures along the alignment. As such, any additional reflectivity would be temporary, and new steel structures would not create a new, permanent source of substantial glare that would adversely affect daytime views in the area. The new 230 kV line would also include tempered glass insulator bells with a grey silicone undercoating. While glass is a potential source of glare, the application of a silicone undercoating to the bells would diminish the reflectivity. Additionally, the insulator bells would not be visually prominent and would be unobtrusive to receptors in the surrounding area.

Lighting attributable to the proposed project would be infrequent and dispersed and would be similar to existing conditions. Similarly, glare would not substantially increase relative to existing conditions. Any glare would be limited to the linear alignment and would be experienced briefly and intermittently. In contrast, the related projects are residential and commercial developments, and sources of light and glare would be consistent and permanent. Sources of light and glare would consist of light from windows at night, street lamps, business identification signs, and potential glare from glass or metal building materials during the daytime. However, light and glare from residential and commercial developments are typically limited through compliance with state and local policies related to light trespass and energy conservation. The proposed project would result in limited to negligible changes to light and glare over existing conditions and would not produce permanent or consistent sources of light or glare. For these reasons, the project's impact would not be cumulatively considerable. Cumulative impacts would therefore be **less than significant**.

4.3.2 Air Quality

As discussed in Section 3.2, the geographic scope of the area potentially affected by cumulative air quality impacts consists of the SCAB for impacts related to construction emissions and mobile source emissions (i.e., vehicle trips). This geographic scope was selected because emissions from construction processes and vehicles can contribute to exceedances in criteria air pollutant concentrations, which are measured and regulated based on the air basin. The proposed project and the related projects are all located within the SCAB. Regional growth in the SCAB, as established in general plans and regional plans produced by SCAG would also contribute to cumulative air quality impacts in the categories of construction emissions and mobile source emissions.

Other aspects of air quality impacts are more localized (toxic air contaminant emissions, impacts to sensitive receptors, and odor emissions). For these impacts, the geographic scope of the area potentially affected by cumulative impacts consists of the project's immediate vicinity. This geographic scope was selected because impacts in the categories of toxic air contaminants, sensitive receptors, and odors dissipate quickly with distance and affect adjacent and nearby land uses. As such, the proposed project could combine with related projects in the immediate vicinity to produce a cumulative impact. The related projects listed in Section 4.2 are all located within the immediate vicinity of the proposed project.

Construction Emissions

As discussed in Section 3.2, regional daily construction emissions during construction of the proposed project would not exceed the SCAQMD significance thresholds for VOC, CO, SO_x, PM_{10}, or $PM_{2.5}$. However the project would exceed the SCAQMD threshold for NO_x. After the inclusion of MM-AQ-1, NO_x emissions would continue to exceed the threshold, largely from use of the heavy-duty helicopter during transmission structure removal and installation. The heavy-duty helicopter would only be in use for approximately 42 days of the total construction period. However, because emissions exceed the SCAQMD threshold, impacts involving regional daily construction emissions would be significant and unavoidable. As described in Section 4.2, the related projects generally involve standard residential and commercial construction on vacant land. As such, use of heavy-duty helicopters for the related projects is not anticipated. However, standard construction equipment still produces NO_x emissions (although emissions would be less than those associated with heavy-duty helicopters). As such, the related projects would also produce NO_x emissions during construction. Some of the related projects' construction schedules could overlap with those of the proposed project. However, three of the five related projects (Princessa Crossroads, Park Vista, and Dockweiler 21) are either under environmental review or not yet approved, and only one project (Five Knolls and Galloway Senior Housing) has commenced construction. Therefore, construction schedules and phasing are unknown or would vary greatly, and potential impacts associated with two or more overlapping projects would be speculative. Nevertheless, in the unlikely event that construction schedules overlap, the SCAQMD threshold for NO_x could be further exceeded. Because the proposed project alone already exceeds this threshold and would continue to exceed the threshold after implementation of MM-AQ-1, its impact related to construction air pollutant emissions would be cumulatively considerable. Cumulative impacts would therefore be **significant and unavoidable**.

Regarding localized impacts, if a project's emissions would exceed the SCAQMD localized significance thresholds for NO_2, CO, PM_{10}, and $PM_{2.5}$, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB for those pollutants. As explained in Section 3.2, the proposed project would not exceed localized significance thresholds for NO_2, CO, PM_{10}, or $PM_{2.5}$. Related projects may generate similar pollutants during construction. However, because the proposed project falls below thresholds, it would not have a considerable contribution to the SCAB's nonattainment designations, and therefore the project would not cause a new cumulatively significant impact. Cumulative impacts involving localized effects of construction emissions on sensitive receptors would therefore be **less than significant**.

Operational Emissions

Operational activities for the proposed project would be conducted to ensure reliable service of the transmission line. Proposed maintenance activities for the proposed 230 kV transmission line would be similar in scope and scale to those that are currently conducted for the existing 115 kV line. Therefore, the project's proposed operational activities would be similar to existing baseline conditions. As such, criteria pollutant emissions would not exceed existing baseline emissions. Therefore, **no cumulative impact** would occur.

4.3.3 Biological Resources

The geographic scope of the area potentially affected by cumulative biological resources effects consists of the Santa Clarita Valley and surrounding mountain areas. This geographic scope was selected because it encapsulates development within the nearby vicinity that may provide habitat for the same species that could be affected by the proposed project.

Special-Status Species and Vegetation Communities

The project area contains a variety of special-status species and vegetation communities, as characterized in Section 3.3 and in Appendix D of this EIR. The proposed project would result in potentially significant effects to special-status species and vegetation communities, due to grading and construction activities within and near the species' habitats and special-status vegetation communities. Specific species that could be affected are listed in Section 3.3. The related projects are located on currently undeveloped land either adjacent to or within the immediate vicinity of the proposed project and would involve grading and permanent land development. As such, it is anticipated that the related projects, as well as other development in the Santa Clarita Valley, would have the potential to affect similar special-status species as those that would be affected by the proposed project. As such, the proposed project could potentially contribute to a cumulative effect on special-status species and special-status vegetation communities in the project area. However, as explained in Section 3.3, mitigation measures have been set forth that would reduce the proposed project's effects on special-status species to below a level of significance (MM-BIO-1 through MM-BIO-9). As such, the proposed project's effects on special-status species and special-status vegetation communities would not be cumulatively considerable, and cumulative impacts would **be less than significant with mitigation incorporated**.

Protected Wetlands

The project area contains riparian habitat, including protected wetlands and waters. As characterized in Section 3.3 and in Appendix D of this EIR, the proposed project would result in potentially significant impacts to these resources, due to construction activities and installation of transmission structures within or near a wetland resource. The related projects are located on currently undeveloped land either adjacent to or within the immediate vicinity of the proposed project and would involve grading and permanent land development. As such, it is anticipated that the related projects, as well as other development in the Santa Clarita Valley, could have similar effects to protected wetlands. As such, the proposed project's impacts to protected wetlands could potentially contribute to a cumulative effect on protected wetlands in the project area. However, as explained in Section 3.3., mitigation measures have been set forth that would reduce the proposed project's effects on protected wetlands to below a level of significance (MM-BIO-2, MM-BIO-3, MM-BIO-4, and MM-BIO-9). As such, the proposed project's effects on protected wetlands would not be cumulatively considerable, and cumulative impacts would be **less than significant with mitigation incorporated**.

Migratory Species/Wildlife Corridors/Wildlife Nursery Sites

The project area contains wildlife movement corridors, habitat for migratory species, and potential wildlife nursery sites. As explained in Section 3.3, the proposed project could potentially interfere with wildlife movement and/or native wildlife nursey sites during construction-related disturbances. The related projects listed in Table 4-2 are primarily located on undeveloped land. Construction and operation of the related projects also has the potential to similarly interfere with wildlife movement and/or native wildlife nursey sites in the area. As explained in Section 3.3, MM-BIO-2 would be implemented to reduce the project's impacts relative to wildlife movement and wildlife nursey sites to below a level of significance. As such, with mitigation, the proposed project's effects on wildlife corridors and wildlife nursey sites would not be cumulatively considerable, and cumulative impacts would be **less than significant with mitigation incorporated**.

Policies/Ordinances Protecting Biological Resources

The proposed project alignment overlaps with several jurisdictions that have policies and ordinances protecting biological resources: the County of Los Angeles, City of Los Angeles, and the City of Santa Clarita. Relevant policies and ordinances for each of these jurisdictions are listed in Section 3.3 and are further enumerated in Appendix D. The related projects listed in Table 4-2 are all within the City of Santa Clarita and would therefore be subject to City of Santa Clarita policies and ordinances protecting biological resources. As described in Section 3.3, the proposed project would require mitigation to be consistent with all applicable policies and ordinances established to protect biological resources. Upon implementation of MM-BIO-1 through MM-BIO-10, the proposed project would be consistent with policies and ordinances protecting biological resources. As such, with mitigation, the proposed project's effects related to consistency with policies and ordinances protecting biological resources would not be cumulatively considerable. Cumulative impacts would be **less than significant with mitigation incorporated**.

4.3.4 Cultural Resources

Significant cultural resources are unique and nonrenewable members of a finite class. The proposed project and other development projects can cause cumulative effects to cultural resources if such projects adversely alter and/or demolish resources that are interrelated, such as resources that are part of a historic district. Additionally, because cultural resources are unique and nonrenewable members of finite classes, a development project that demolishes, destroys, or alters cultural resources has the potential to erode a class of cultural resources, potentially leading to a cumulatively considerable effect. For these reasons, the geographic scope for cumulative impacts to cultural resources is regional in nature.

Impacts to Previously Recorded Resources

A cultural resources evaluation was conducted for this EIR to evaluate the potential impacts of the proposed project on significant historical resources and archaeological resources (see Section 3.4 and Appendix E). A number of previously recorded resources were identified along the project alignment and within the proposed construction work areas and laydown areas. Resources with the potential to be affected by the proposed project consist of the San Francisquito PP1 and PP2 Transmission Lines, several undeveloped sites with scattered historic-era refuse, the Los Angeles Aqueduct, a historic-era hog farm, and several historic roads. The proposed project would remove a portion of the San Francisquito PP1 and PP2 Transmission Lines, which is an NRHP-eligible resource. However, as described in Section 3.4, the proposed project would not have a significant impact on this resource. The segment of the transmission line between the Haskell Canyon and Sylmar switching stations lacks integrity of materials and workmanship from the period of significance and does not contribute to the larger transmission line's significance through its existing infrastructure. Given the resource type, it is not possible to maintain the original equipment over the course of a century while simultaneously maintaining the resource's function. Due to PP1 and PP2's strong association with the early infrastructure development of City of Los Angeles and the resource's continuous role in supplying power to the City, the larger CA-LAN-2132H/P-19-0002132 resource will remain eligible under NRHP/CRHR Criterion A/1 (as determined by the National Park Service in 2004), and will not be cumulatively impacted by replacement of the proposed project segment, as replacement of aging infrastructure is a necessary component of maintaining the resource's function over time. Most importantly, the alignment within the historic LADWP transmission line corridor will be retained, and allow the resource to continue to convey important associations under Criterion A/1. Additionally, this resource is not a contributor to a historic district and would not contribute to a cumulative effect on a larger group of related resources. Furthermore, none of the related projects would result in any alterations to the San Francisquito PP1 and PP2 Transmission Lines. As such, the proposed project would not combine with the related projects or regional development to produce a cumulatively considerable impact on the San Francisquito PP1 and PP2 Transmission Lines.

As described in Section 3.4, there are several other previously recorded cultural resources within the vicinity of the project alignment that could be affected by the proposed construction work areas and laydown areas. These other recorded resources consist of several undeveloped sites with scattered historic-era refuse, the Los Angeles Aqueduct, historic-era hog farms, and several historic roads. However, as described in Section 3.4, with implementation of

mitigation measures, the proposed project would not have significant impacts on any of these resources (see MM-CUL-1 through MM-CUL-4). As such, the project by itself would not result in significant impacts. Most of these resources do not overlap with the development sites for the related projects listed in Table 4-2. An exception is one of the historic-era hog farms. Portions of this site may overlap with the Somerset Summit development site. As with the proposed project, future development of the Somerset Summit site would be subject to applicable federal and state regulations protecting historical and archaeological resources. (For an overview of these regulations, see Appendix E of this EIR). Upon implementation of MM-CUL-1 through MM-CUL-4, the proposed project would not have a significant impact on this resource. As such, with mitigation incorporated, the proposed project's impacts would not be cumulatively considerable. No other cultural resources with the potential to be affected by the proposed project overlap with the development sites for the related projects. Therefore, with the exception of potential effects to the historic-era hog farm, the proposed project would not have the potential to combine with the related projects to produce a cumulative effect on any previously recorded cultural resources. Additionally, with mitigation, the proposed project would not result in significant impacts to any previously recorded cultural resources and, therefore, would not contribute to any regional depletions of a particular class of cultural resources that may be attributable to regional growth. Cumulative impacts would therefore be **less than significant with mitigation incorporated**.

Impacts to Unanticipated Discovery of Archaeological Resources

The proposed project and the related projects all involve ground disturbance and excavation and, therefore, would have the potential to uncover previously undiscovered, buried cultural resources, including historical resources, archaeological resources, and human remains. Significant impacts to such resources can occur if ground-disturbing activities uncover buried resources, and such resources are significant but become destroyed, lost, or otherwise adversely affected during construction. There are standard measures that are typically applied to most ground-disturbing projects, usually as mitigation measures or conditions of approval, which require construction to be stopped in the vicinity of any cultural resources that are uncovered. Such measures or conditions of approval often require involvement of a qualified archaeologist, historian, and/or Native American monitor. There are also state laws in place that protect human remains and that require certain actions to be taken if significant resources and/or remains are discovered. These standard measures and regulations that are generally put in place for typical development projects (including the related projects) and would also apply to the proposed project (see MM-CUL-3 and MM-CUL-4). As such, upon incorporation of mitigation measures, the proposed project would not combine with related projects or other development in the region to produce a cumulatively considerable impact on previously undiscovered, buried archaeological resources and human remains. Cumulative impacts would therefore be **less than significant with mitigation incorporated**.

4.3.5 Geology and Soils

The geographic scope of the area potentially affected by cumulative geology and soils effects consists of the project alignment and adjacent parcels, the development of which could potentially combine with proposed project activities to produce a cumulative effect relative to geologic or soil hazards.

Seismic Hazards (Fault Rupture, Ground Shaking, Ground Failure)

Cumulative effects involving seismic hazards could occur if the proposed project were to combine with the related projects to increase or exacerbate the potential for seismic hazards to occur. While portions of the alignment and the related project sites may be subject to a variety of seismic hazards, development of the proposed project would not exacerbate the potential for such hazards to occur, as described in Section 3.5. The related projects involve standard residential and commercial development activities on vacant land and, like the proposed project, would not be expected to increase or exacerbate the potential for seismic hazards to occur. As such, the proposed project would not combine with the related projects to produce a cumulatively considerable effect related to seismic hazards, and cumulative impacts would be **less than significant**. As with the proposed project, the related projects would be subject to seismic and safety regulations, which would protect the developments and their occupants from seismic hazards.

Landslides

As described in Section 3.5, portions of the proposed project extend through areas with moderate to steep slopes. Proposed project construction would require excavation and/or construction of fill slopes in some of these areas. These activities would have the potential to increase or exacerbate the potential for landslides to occur, resulting in a potentially significant impact. As described in Section 4.2, the development sites for the related projects generally consist of vacant, hilly properties. Grading and construction in these areas could also have the potential to increase or exacerbate the potential for landslides to occur. In the unlikely event that construction along the alignment were to overlap with adjacent construction activities associated with the related projects, the activities could potentially combine to increase landslide hazards. However, MM-GEO-1 has been set forth for the proposed project to address and reduce landslide risks. Implementation of MM-GEO-1 would ensure that grading processes are designed to reduce landslide risk, to ensure that grading areas are positioned away from unstable slopes to the extent feasible, and to ensure that measures are incorporated into grading plans to prevent slope failure. As such, with implementation of MM-GEO-1, the proposed project would not have a considerable contribution to impacts involving landslides hazards. Land development projects (such as the related projects) typically have site-specific geotechnical reports with recommendations involving soil stability and treatment of slopes to minimize geotechnical risks during construction and operation. Like the proposed project, it is expected that the related projects would adhere to site-specific measures and construction management practices that would minimize the potential for landslide hazards to occur. The proposed project's impacts relative to landslides would not be cumulative considerable. Cumulative impacts would therefore be **less than significant with mitigation incorporated**.

Unstable Geologic Units

With the exception of landslides, which are addressed above, the proposed project would not increase the potential for geologic instability to occur. As described in Section 3.5, the project alignment traverses the Placerita and Newhall oil fields. Additionally, portions of the project alignment traverse loose sandy canyon and valley bottoms, which may have collapsible soils. Some of the related projects (particularly Dockweiler 21 and Park Vista), are located near oil fields as well. The related projects are also located on vacant land, some of which could potentially have sandy soils. However, as described in Section 3.5, state oil field reservoir repressurization requirements (in accordance with

California Public Resources Code, Division 3, Chapter 1, Article 5.5, Subsidence) prevent regional subsidence associated with oil and gas extraction. Given the trends in water conservation, controlled groundwater pumping, and an associated rise in groundwater levels, the hazard for regional ground subsidence from groundwater lowering in the project area is very low. As such, the proposed project is not expected to cause impacts related to subsidence and, therefore, would not combine with the related projects to produce cumulatively considerable effects. Similarly, while some proposed structures could be located on potentially collapsible soil, proper construction techniques would be used to ensure safe construction and structural stability. In the event that related projects (or portions of those projects) are located on potentially collapsible soils, it is expected that proper construction techniques, state standards, and site-specific geotechnical recommendations would be put in place to reduce any potential risks associated with soil collapse. As such, the proposed project's impacts related to geologic instability would not be cumulatively considerable, and cumulative impacts would therefore be **less than significant**.

Expansive Soils

As explained in Section 3.5, surficial soils overlying bedrock in the project area may contain clay deposits subject to soil expansion. However, the foundations for the proposed transmission structures would be constructed in compliance with state building requirements, and project construction would not increase or exacerbate the potential for expansive soils to create substantial direct or indirect risks to life or property. Similarly, while related projects in the area could potentially be located on soils subject to expansion, land development projects (such as the related projects) typically have site-specific geotechnical reports that examine the potential for hazards associated with soil expansion and that include recommendations and regulatory requirements involving treatment of potentially expansive soils, as well as best practices for construction and design. For these reasons, the proposed project would not combine with related projects to produce a cumulatively considerable effect relative to hazards involving expansive soils, and cumulative impacts would be **less than significant**.

4.3.6 Greenhouse Gas Emissions

Because GHG emissions and climate change are a global issue, any approved project regardless of its location has the potential to contribute to a cumulative global accumulation of GHG emissions (as opposed to the relatively temporary nature of pollutants related to air quality). In theory, the geographic extent of the cumulative contributions to GHGs and climate change is worldwide. However, lead agencies are only able to regulate GHG emissions within their respective jurisdictions; therefore, the geographic extent is primarily contingent upon the area over which lead agencies have authority. As such, the geographic extent for the purposes of this analysis is the SCAB.

While the project would result in emissions of GHGs during construction and operation, no guidance exists to indicate what level of GHG emissions would be considered substantial enough to result in a significant adverse impact on global climate. However, it is generally the case that an individual project is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. Thus, GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA 2008). As indicated in Section 3.6, the project would result in an increase in GHG emissions

relative to existing conditions. However, as explained in Section 3.6, implementation of the project would not exceed the SCAQMD recommended threshold of 3,000 MT CO_2e and would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Additionally, emissions from the proposed project would cease after the end of construction, since operational activities would be similar to existing conditions. The related projects would produce GHG emissions during construction and operation. During construction, emissions sources would be similar to those of the proposed project (e.g., construction equipment and vehicle trips associated with construction workers and trucks). Unlike the proposed project, the related projects would produce increased operational GHG emissions, associated with new residents in the Santa Clarita Valley. The operational emissions would be mainly attributable to increased daily vehicle trips in the area. Economic and population growth that is anticipated in general plans and regional plans would also result in increased GHG emissions. However, the related projects, other development projects in the region, and vehicles associated with construction, operation, and general growth in the area would be required to comply with a variety of GHG emission reduction measures and energy conservation measures that have been set forth at the state and local level. Compliance with these regulations would reduce GHG emissions associated with related projects and regional growth over time. The proposed project's GHG emissions would be temporary and negligible relative to GHG emissions associated with regional growth and major land development projects that are occurring in the project vicinity and in the region. For these reasons, the proposed project's GHG emissions would not be cumulatively considerable. Cumulative impacts are therefore **less than significant**.

4.3.7 Noise

The geographic scope of the area potentially affected by cumulative noise impacts from construction and operation consists of receptor locations that could be exposed to noise and/or vibration from the proposed project and from related projects. Because both noise and vibration attenuate with distance, the geographic scope consists of the project alignment and related projects within 0.25 mile of the alignment. The related projects listed in Section 4.2 are all within this geographic scope, with the exception of Park Vista.

For cumulative noise impacts from operational off-site traffic noise, the geographic scope is regional, because increases in operational vehicular trips are typically distributed throughout the project region. However, the proposed project would not be associated with operational increases in off-site traffic; as such, it would have no potential to contribute to cumulative impacts in this category. Therefore, the topic of operational off-site traffic noise is not addressed further.

The proposed project and the related projects would all be subject to applicable noise standards. See Section 3.7 of this EIR for a description of the standards applicable in the City of Santa Clarita, which is the jurisdiction in which all of the related projects are located. Cumulative impacts related to temporary increases in ambient noise, permanent increases in ambient noise, and vibration impacts are discussed below.

Temporary/Periodic Increases in Ambient Noise Levels

The proposed project and related projects would result in temporary and periodic noise increases during their respective construction periods. In the event that the proposed project's construction period overlapped with the related projects' construction processes, cumulatively significant temporary or periodic increases in ambient noise levels could result. Two of the four related projects within the geographic scope for cumulative noise impacts (Princessa Crossroads and Dockweiler 21) are either under environmental review or not yet approved, and only one project (Five Knolls and Galloway Senior Housing) has commenced construction. Therefore, construction schedules and phasing for the related projects are unknown or would vary greatly, and potential impacts associated with two or more overlapping projects would be speculative. The related projects would likely have construction periods that last for one year or more at each specific development site. In contrast, the proposed project's construction period extends for approximately 4 years, but the amount of time spent at each work area would be limited (approximately 1 day to 25 days per location). As such, even if construction of the related projects were to overlap with the proposed project's construction period, the likelihood that construction activities at a particular work area for the proposed project would overlap with construction at one of the related project sites is unlikely. As shown in Table 3.7-6, the greatest construction noise impacts from the proposed project are expected to occur at sensitive receptors near proposed structures 12-6 and 12-7. As shown in Table 4-2, the related projects are not located near structure locations 12-6 or 12-7. The structure locations that are near the related projects are 3-1, 3-2, 3-3, 5-2, 6-4, 6-5, 6-6, 9-2, and 9-3. While temporary combined effects could potentially occur near these structure locations, such effects would be limited in duration. Furthermore, there are no instances of sensitive receptors situated in between the alignment and one of the related projects. Nevertheless, sensitive receptors located near proposed project construction activities and construction activities associated with the related projects could temporarily experience elevated noise levels resulting in cumulatively considerable noise impacts.

Temporary or periodic increases in ambient noise can also result from intermittent operational noise sources, such as maintenance activities. As explained in Section 3.7, the proposed project would have no noise impacts related to maintenance. As such, project operations would not have a cumulatively considerable impact relative to temporary or periodic increase in ambient noise levels.

As explained in Section 3.7, mitigation measure MM-NOI-1 would be applied to the proposed project to reduce construction-related noise effects to below a level of significance. MM-NOI-1 involves adherence to construction hours specified in the City of Los Angeles or City of Santa Clarita municipal codes (depending on which jurisdiction a particular construction work area is in). The related projects (which are all located within the City of Santa Clarita) are expected to be subject to municipal code requirements as well. MM-NOI-1 also sets forth a variety of noise attenuating measures and requires notification of neighbors within the vicinity of upcoming helicopter maneuvers. Upon implementation of MM-NOI-1, the project's contribution to potential cumulative effects at receptors located near proposed work areas and the related project sites would be reduced below a level significance. Cumulative impacts would therefore be **less than significant with mitigation incorporated**.

Permanent Increase in Ambient Noise Levels

Permanent increases in ambient noise levels can occur from on-site operational noise (due to everyday activities such as daily equipment operations; heating, ventilation, and air conditioning (HVAC) systems; outdoor sound systems; outdoor conversations, etc.). Permanent increases in ambient noise levels can also occur due to increased off-site traffic noise, which is caused by projects that generate daily operational vehicle trips. As explained in Section 3.7, the proposed project's long-term operational noise would be limited to corona noise produced by the transmission lines. However, as shown in Section 3.7, the project's changes to corona noise produced by the existing transmission corridor would be minimal to negligible. The related projects would produce operational noise primarily from HVAC systems and vehicular traffic. Outdoor conversations an amplified sound could potentially be a contributor as well, particularly for commercial uses. However, due to the proposed project's minimal to negligible operational noise, it would not produce a cumulatively considerable impact related to permanent increase in noise. Cumulative impacts would therefore be **less than significant**.

Vibration

The proposed project and related projects may generate vibration during construction processes. Ground vibration generated by construction equipment spreads through the ground and diminishes greatly in magnitude with increases in distance. As explained in Section 3.7, some vibration produced during construction could potentially result in temporary annoyances to nearby sensitive receptors. The worst-case vibration levels from the proposed project would occur at the closest sensitive receptors, which are those located near proposed structures 12-6 and 12-7. As described above, the related projects are not located near these structure locations. As such, the proposed structure locations that are near the related projects are further removed from sensitive receptors, thereby decreasing project-related vibration and the potential for project-related vibration to combine with vibration from nearby construction sites. (As explained above, there are no instances of sensitive receptors situated in between the alignment and one of the related projects.) Furthermore, as explained above, potential overlap between proposed project construction activities and construction for the related projects is highly speculative and unlikely to occur. If this does occur, overlap would be limited in duration. Additionally, not all construction equipment generates vibration, and vibration-generating construction activities are typically brief and sporadic, which minimizes the likelihood of potential cumulative vibration impacts. Nevertheless, sensitive receptors located near proposed project construction activities and construction activities associated with the related projects could temporarily experience vibration resulting in a cumulatively considerable impact. As explained in Section 3.7, mitigation measure MM-NOI-1 would be applied to the proposed project and would reduce construction-related vibration effects to below a level of significance. With implementation of MM-NOI-1, the proposed project's construction vibration impacts would not be cumulatively considerable. Cumulative impacts related to construction vibration would therefore be **less than significant with mitigation incorporated**. Once operational, the project would not generate groundborne vibration. As such, it would not have the potential to contribute to any long-term, cumulative impacts, and no cumulative impacts would occur related to operational vibration.

4.3.8 Transportation and Traffic

The geographic scope of the area potentially affected by cumulative transportation and traffic impacts consists of the areas where the proposed project could contribute to impacts on the circulation system. Based on the location and scope of the proposed project, this area would include the Santa Clarita Valley and the northwestern portions of the City of Los Angeles (namely, Sylmar). However, the proposed project's transportation and traffic effects would be limited to the construction period, as described in Section 3.8. Due to the linear nature of proposed project construction, transportation and traffic effects would occur incrementally along the alignment. Effects in any particular area near the alignment would be limited in duration and in magnitude. Based on the number of trips that would be generated by the project during construction, the proposed project would not have a noticeable effect on the overall transportation system of the Santa Clarita Valley or of the Sylmar community. As such, the geographic scope is narrowed to more localized impacts that could potentially be caused by the combination of the proposed project's effects and the effects of a nearby project. As such, the geographic scope includes roadways and intersections within the immediate vicinity of the proposed project. The related projects listed in Section 4.2 also have the potential to affect some of the same roadways and intersections as the proposed project and, therefore, are encompassed in the geographic scope.

Cumulative impacts would potentially occur if construction of the proposed project were to occur concurrently with either construction or operation of one or more related projects. Construction of the proposed project would occur over the course of four years, from 2019 to 2023, during which the project's construction trip generation would peak at 20 AM and 20 PM peak hour trips. The proposed project would not result in operational transportation or traffic effects. As such, the potential for the project to generate a cumulative impact would be limited to its construction period. Three of the five cumulative projects (Princessa Crossroads, Park Vista, and Dockweiler 21) are either under environmental review or not yet approved, and only one project (Five Knolls and Galloway Senior Housing) has commenced construction. Therefore, construction schedules and phasing are unknown or would vary greatly, and potential impacts associated with two or more overlapping projects would be speculative. However, because trip generation during project construction would not exceed 20 peak hour trips along any one section of the proposed alignment, trips resulting from construction and/or operation of the related projects would serve as the main contributors of cumulative traffic generation in the project vicinity. The proposed project's construction-related traffic would be minimal and would be dispersed along the 12-mile project alignment. Additionally, construction activities at each work area would range from approximately 1 day to 25 days. As such, in the unlikely event that the proposed project's construction period were to overlap with construction of one or more related projects, the combined effects would be brief and the proposed project's contribution would be limited.

Table 4-3 shows trip generation estimates of the related projects during operation, which are expected to total approximately 17,216 daily trips, 834 AM peak hour trips, and 981 PM peak hour trips. By way of comparison, the peak construction phase of the proposed project would contribute to approximately 2% of the related projects' AM and PM peak hour trips. While it is unlikely that operation of all the related projects would commence during project construction, in the event of this worst-case condition, the proposed project's incremental effect would be minimal to negligible and, therefore, would not be cumulatively considerable. Due to the minimal contribution of construction-

related trips from the proposed project, the proposed project would not serve as a primary contributor of traffic in the area. Therefore, the proposed project would not result in a cumulatively considerable increase to traffic within the study area. Cumulative impacts would be **less than significant**.

Table 4-3. Cumulative Project Trip Generation Summary

Land Use	Size/Units	Daily	AM Peak Hour			PM Peak Hour		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Rates[1]								
Multifamily Housing (low-rise) (ITE Code 221)	DU	7.32	0.11	0.35	0.46	0.35	0.21	0.56
Senior Adult Housing - Detached (ITE Code 251)	DU	4.27	0.08	0.16	0.24	0.18	0.12	0.30
Business Park (ITE Code 770)	TSF	12.44	0.24	0.16	0.40	0.19	0.23	0.42
Single Family Residential (ITE Code 210)	DU	9.44	0.19	0.56	0.74	0.62	0.37	0.99
Trip Generation								
Sommerset Summit[2]	95 DU	695	10	34	44	34	20	53
Five Knolls and Galloway Senior Housing[3]	140 DU	598	11	23	34	26	16	42
Princessa Crossroads[4]	710 DU	5,197	75	251	327	250	147	398
	680 TSF	8,459	166	106	272	131	154	286
Park Vista[5]	109 DU	1,029	20	60	81	68	40	108
	73 DU	534	8	26	34	26	15	41
Dockweiler 21[6]	96 DU	703	10	34	44	34	20	54
Total Cumulative Project Trip Generation		17,216	300	534	834	569	412	981

Source: City of Santa Clarita 2019a, 2019b

Notes: This table provides generalized trip generation estimates for the purposes of comparing the proposed project's impacts to impacts that could occur from other development in the area. As such, the numbers provided in this table are not intended to evaluate the environmental impacts of the related projects themselves. These numbers represent generalized estimates and may not be consistent with project-specific traffic studies that have been prepared (or will be prepared) for the related projects.

DU = Dwelling Units; TSF = Thousand Square Feet

1 Trip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017.

2 95-unit residential development (assumed low-rise multifamily housing)

3 140-unit senior living center (assumed detached senior adult housing)

4 710-unit residential (assumed low-rise multifamily housing) and 680,000 square-foot (SF) business park/commercial development

5 182-unit residential development (109-unit single family housing; 73-unit low-rise multifamily housing – condos)

6 96-unit residential development (assumed low-rise multifamily housing development

4.3.9 Tribal Cultural Resources

Significant tribal cultural resources are unique and nonrenewable members of a finite class. As such, significant impacts to such resources can result in an overall decrease in the abundance of tribal cultural resources. For these reasons, the geographic scope for cumulative impacts to tribal cultural resources is regional in nature.

No known tribal cultural resources have been identified in the project area, as described in Section 3.9 of this EIR. However, AB 52 consultation conducted for the proposed project suggests that there is some potential for unknown subsurface TCRs to be impacted by the project during ground-disturbing construction activities. The related projects involve ground disturbance on currently vacant land adjacent to or within the vicinity of the

project alignment. As such, the proposed project could potentially combine with the related projects, as well as other development projects associated with regional growth, to affect tribal cultural resources in the project area and region. However, as described in Section 3.9, mitigation measures MM-TCR-1 through MM-TCR-4 would be implemented during project construction and would ensure that any potential TCRs uncovered during construction are protected. As such, after implementation of MM-TCR-1 through MM-TCR-4, the proposed project would not result in cumulatively considerable effects on TCRs. As such, cumulative impacts would be **less than significant with mitigation incorporated**.

4.3.10 Energy

The geographic scope for cumulative impacts to energy is theoretically global in nature. However, for the purposes of analyzing energy impacts, this EIR focuses on energy use at the state level, as well as compliance with local and state plans for renewable energy and energy efficiency. As such, the geographic scope extends to development projects and growth throughout the state. This geographic scope includes the related projects listed in Section 4.2, which are particularly relevant when considering compliance with local plans.

Energy Consumption during Construction

As described in Section 3.10, the project would not result in wasteful, inefficient, or unnecessary use of energy, in large part due to the short-term and temporary nature of the construction period. Construction of the related projects and other development projects throughout the state would also result in energy consumption. However, as with the proposed project, construction would be temporary. Additionally, vehicles and equipment used during construction are subject to state standards for fuel efficiency, which are increasing in stringency over time. Compliance with efficiency standards would help control cumulative effects associated with construction projects occurring throughout the state. As explained in Section 3.10, the proposed project's construction-related energy use would be minimal and temporary, particularly when considered in the context of statewide energy use. As such, the proposed project's energy use during construction would not be cumulatively considerable. Therefore, cumulative impacts involving construction energy use would be **less than significant**.

Energy Consumption during Operation

Operational activities associated with the proposed project would be conducted to ensure reliable service of the transmission line. Proposed maintenance activities for the 230 kV transmission line would be similar in scope and scale to those that are currently conducted for the existing 115 kV line. Additionally, as described in Section 3.10, the additional electrical transmission associated with the proposed project would be produced by renewable resources and would not, therefore, result in wasteful, inefficient, or unnecessary consumption of energy. The related projects consist of standard development projects and would result in energy use during operation, consisting of fuel for vehicles traveling to and from residences and businesses, electricity, and natural gas. The project's operational activities would be similar to existing baseline conditions and, therefore, would not contribute to additional energy consumption in the state. As such, the proposed project would not have a cumulatively considerable contribution to energy consumption during operation. Therefore, **no impact** would occur.

Local and Statewide Renewable Energy/Energy Efficiency Plans

The proposed project and related projects are subject to a variety of state and local plans for renewable energy and energy efficiency. The proposed project would comply with and help achieve the goals set forth in some of these plans. Related projects would be required to comply with applicable plans for renewable energy and energy efficiency. For these reasons, the proposed project would not contribute to cumulative impacts involving inconsistency with renewable energy plans or energy efficiency. Cumulative impacts would be **less than significant**.

4.4 References

California Air Pollution Control Officers Association (CAPCOA) 2008. *CEQA & and Climate Change*. January 2008. Accessed February 15, 2019. http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf.

City of Los Angeles. 2018. Bi-Weekly Case Filings by Community Plan Area. 2018. Accessed February 15, 2019. http://planning.lacity.org/.

City of Los Angeles. 2019. Bi-Weekly Case Filings by Community Plan Area. 2019. Accessed February 15, 2019. http://planning.lacity.org/.

City of Santa Clarita. 2019a. LADWP - Power Plant 1 and Power Plant 2 Transmission Line Conversion Project - request for cumulative projects. Email correspondence between Ben Jarvis, City of Santa Clarita, and Dudek. January 3, 2019.

City of Santa Clarita. 2019b. "Major Development Projects in the City." Webpage. Accessed February 15, 2019. https://www.santa-clarita.com/city-hall/departments/community-development/planning-division/development-projects.

5 ALTERNATIVES

CEQA requires that an EIR describe a range of reasonable alternatives to a proposed project that would feasibly attain most of the basic objectives of the project but would avoid or lessen any significant environmental impacts. EIRs are also required to evaluate the comparative merits of the alternatives. This chapter of the EIR describes and evaluates project alternatives and implements the requirements set forth in the CEQA Guidelines for alternatives analysis. This chapter also identifies the Environmentally Superior Project Alternative as required by CEQA Guidelines Section 15126.6(e)(2).

5.1 Selection of Alternatives

The range of alternatives and methods for selection is governed by CEQA and applicable CEQA case law. As stated in CEQA Guidelines Section 15126.6(a), the lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. This chapter includes the range of project alternatives that have been selected by the lead agency (in this case, LADWP) for examination, as well as its reasoning for selecting these alternatives.

As stated in Section 15126.6(a) of the CEQA Guidelines, there is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason. This rule is described in Section 15126.6(f) of the CEQA Guidelines and requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. As defined in Section 15126.6(f), the rule of reason limits alternatives analyzed to those that would avoid or substantially lessen one or more of the significant effects of a project. Of those alternatives, an EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. Other relevant provisions set forth in the CEQA Guidelines state that EIRs do not need to consider every conceivable alternative to a project, nor are they required to consider alternatives that are infeasible.

5.1.1 Proposed Project

As described above, the project objectives and the significant impacts of a project are key determiners of the alternatives that are initially examined by the lead agency and the alternatives that are ultimately carried forward for detailed analysis in an EIR. To that end, this subsection includes (a) a summary of the proposed project's characteristics to facilitate comparison between the proposed project and its alternatives, (b) the list of project objectives, and (c) a summary of the project's significant impacts.

Project Summary

The project would be located within a linear alignment in northwestern Los Angeles County that generally extends from Haskell Canyon to the community of Sylmar, located south of the City of Santa Clarita. The project would involve replacing a 12-mile segment of an existing 115 kilovolt (kV) double circuit transmission line with a new 230 kV double circuit transmission line (hereafter referred to as the "115 kV line" and the "230 kV line," respectively). The new 230 kV line would be strung with two 230-kV 3 phase circuits; however, only one circuit would be energized

upon project completion. The second would be energized in the future, based on availability of future renewable energy supplies. The proposed project would involve demolishing the existing 115 kV line and constructing an approximately 12-mile segment of 230 kV lines and associated transmission structures generally adjacent to the existing 115 kV line. The 115 kV line and most of its associated transmission towers would be removed from Haskell Canyon Switching Station in the north to the line's terminus at Olive Switching Station in the south. The new line would be installed and the old line would be removed within an existing alignment that extends from Haskell Canyon Switching Station in the north to Olive Switching Station and Sylmar Switching Station in the south. The proposed new line would also originate at Haskell Canyon Switching Station. The circuit that would not be energized would terminate at Olive Switching Station, and the energized circuit would terminate at Sylmar Switching Station. The project alignment is approximately 12 miles long and consists of LADWP-owned land and private properties within an LADWP right-of-way. The purpose of this project is to increase the transmission capacity between Haskell Canyon Switching Station and Sylmar Switching Station so that additional renewable energy supplies can be transmitted from the Tehachapi Mountains and Mojave Desert to the Los Angeles basin.

Project Objectives

As described in Chapter 2 of this EIR, the underlying purpose of the project is to alleviate constraints for transferring renewable energy supplies from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin in order to help LADWP achieve state and local requirements for greenhouse gas (GHG) reductions and an increased renewable energy portfolio. The project's specific objectives are listed below.

- Allow for increased transmission of renewable energy from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin.
- Assist LADWP in reducing GHG emissions and meeting Renewable Portfolio Standards (RPS) goals established in the City's sustainability plans and initiatives.
- Improve the safety and operational flexibility of energy transmission in the South of Haskell Corridor to address system reliability concerns associated with increased use of solar and wind energy sources.
- Enhance the operational flexibility of the Haskell Canyon Switching Station and Sylmar Switching Station.
- Minimize the environmental disturbance of transmission upgrades by constructing improvements within an existing transmission corridor and within existing switching stations; avoiding sensitive resources to the extent feasible; and minimizing the number of new access routes.

Environmental Impacts of the Proposed Project

As discussed in detail in the Initial Study Checklist included in Appendix A to this EIR and in Chapter 3, Environmental Analysis and Chapter 4, Cumulative Impacts, the impact determinations for the proposed project are as follows:

No Impact

- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services

Less Than Significant Impact

- Aesthetics
- Hydrology and Water Quality
- Greenhouse Gas Emissions
- Recreation
- Transportation and Traffic
- Utilities and Service Systems
- Energy

Less Than Significant Impact With Mitigation

- Agriculture and Forestry Resources
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Noise
- Tribal Cultural Resources

Significant and Unavoidable

- Air Quality

5.1.2 Alternatives Considered But Rejected

One of the requirements for alternatives analysis that is set forth in the CEQA Guidelines is identification of alternatives that were considered by the lead agency but rejected as infeasible during the scoping process. As stated in Section 15126.6(c) of the CEQA Guidelines, the EIR should briefly explain the reasons underlying this determination. Among the factors that may be used to eliminate alternatives from detailed consideration in the EIR are:

(i) Failure to meet most of the basic project objectives,

(ii) Infeasibility, or

(iii) Inability to avoid significant environmental impacts (CEQA Guidelines Section 15126.6(c)).

Section 15126.6(f)(1) of the CEQA Guidelines states that "among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)." However, as stated in this subsection, no one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In accordance with 15126.6(c) of the CEQA Guidelines, a range of reasonable alternatives was considered. Several of these alternatives were rejected from further analysis due to one or more of the above reasons. A description of each alternative and the rationale for rejection is provided below.

Alternative Sites

Pursuant to Section 15126.6(f)(2) of the CEQA Guidelines, LADWP considered the potential for alternative locations to the project. As stated in Section 15126.6(f)(2)(A), the key question and first step in analyzing alternative sites is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need to be considered in the EIR.

The proposed project would occur within a linear alignment extending between two switching stations. Within the alignment, new transmission structure locations have been identified for the new transmission line. As such, alternative sites for the project could be established by changing any one of the following variables: the switching stations, the alignment, or the individual structure locations. These options for alternative locations are further described below. Alternative sites were ultimately rejected from further analysis in the EIR due to failure to meet project objectives, infeasibility, and/or inability to avoid significant environmental impacts.

New Transmission Corridor

This alternative would involve constructing the proposed 230 kV line within a new and different transmission corridor. The project would still extend from Haskell Canyon Switching Station to Sylmar Switching Station but

would be constructed within a new transmission corridor extending between these two stations. This alternative would require LADWP to purchase a contiguous strip of land between Haskell Canyon Switching Station and Sylmar Switching Station. It would then involve clearing and grading the newly acquired land and constructing access routes to provide connection between existing roadways and the new transmission corridor for construction and ongoing maintenance. Next, the alternative would involve installation of the new 230 kV line, which would occur in a manner similar to the proposed project. Operation of the new 230 kV line would occur in a manner similar to that of the proposed project as well; however, since the new line would be located in a new corridor, maintenance activities would occur in new and different places. This alternative would increase environmental impacts in most categories. Establishing a new transmission corridor would increase the overall construction intensity and construction disturbance area, which would increase temporary impacts in the categories of air quality, noise, GHG emissions, energy, biological resources, and cultural resources. Establishing a new transmission corridor would also increase impacts in the category of land use and planning, since it would likely divide an established community and/or conflict with land use plans and policies established to protect the environment. This alternative would also increase permanent impacts in the categories of biological resources and aesthetics, since establishing a new transmission corridor would cause permanent land use conversions, some of which could occur in sensitive habitat areas. Additionally, it would introduce transmission infrastructure to a new area, thereby resulting in permanent visual disturbances. By comparison, the proposed project would occur within a corridor that has already been established and that has been used for electrical transmission purposes for over 100 years. While impacts would increase in most areas, this alternative was ultimately rejected from further analysis in the EIR due to infeasibility. Additionally, this alternative is also not expected to avoid or reduce the proposed project's significant and unavoidable construction air quality impact. This alternative also fails to meet the project objective of minimizing the environmental disturbance of transmission upgrades by constructing improvements within an existing transmission corridor, avoiding sensitive resources to the extent feasible, and minimizing the number of new access routes.

Infeasibility. LADWP does not control another corridor that spans between the Haskell Canyon Switching Station and the Sylmar Switching Station. The proposed alignment was selected because it falls within an existing transmission corridor that has been used for electrical transmission purposes for over 100 years. Establishing a new transmission corridor would involve purchasing a contiguous strip of land between Haskell Canyon Switching Station and Sylmar Switching Station. In order to extend from Haskell Canyon Switching Station to Sylmar Switching Station, the new corridor would need to cross existing, developed neighborhoods and established open space areas. A new corridor would bifurcate existing and established neighborhoods and cause disturbances in previously undisturbed open space areas. As such, even if it were possible for LADWP to acquire a contiguous strip of land between the Haskell Canyon Switching Station and the Sylmar Switching Station, this scenario would not be reasonable or feasible from a land use perspective. For these reasons, this alternative is not considered feasible and is therefore rejected from further consideration in this EIR.

Environmental Impacts. Establishing a new transmission corridor would increase the environmental impacts of the project in most categories. Additionally, the proposed project's significant and unavoidable air quality impact due to NO_x emissions during construction would not likely be avoided or reduced by this alternative. This impact is primarily driven by the use of heavy-duty helicopters for transmission structure removals/installations in difficult-to-reach and

environmentally sensitive areas of the alignment. While an alternative alignment would change the structure installation locations, it is unlikely that all of the new locations would be easily accessible. In order to extend from Haskell Canyon Switching Station to Sylmar Switching Station, the new transmission corridor would likely extend through hilly, mountainous areas, similar to the proposed project. Additionally, overall construction intensity and equipment use would increase, leading to an increase of daily NO_x emissions. As such, this alternative would not likely reduce or avoid the proposed project's significant and unavoidable construction air quality impact. In fact, the air quality impact may even increase in intensity and/or duration under this alternative. Other new significant and unavoidable impacts would likely occur due to the magnitude of new development that would be required to create and develop a new transmission line corridor.

Alternate Transmission Corridor

This alternative would involve transmission line improvements or replacements within a different LADWP transmission corridor. LADWP has numerous transmission lines throughout Southern California. However, this discussion focuses on lines that extend from key renewable energy resource areas (i.e., the Mojave Desert and/or Tehachapi Mountains) to the Los Angeles basin, so that the underlying purpose of the project would still be achieved. (As described in Section 5.1.1, the underlying purpose of the project is to alleviate constraints for transferring renewable energy supplies from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin.) There are numerous existing transmission corridors that extend from the high desert to the Los Angeles basin, several of which contain LADWP lines:

- A corridor with 500 kV LADWP lines extends from Adelanto (in the Mojave Desert) to the Rinaldi Substation (in the Los Angeles Basin). This line extends for approximately 78 miles across the Mojave Desert, passing Palmdale and Acton before extending south through Santa Clarita. The southern portions of this alignment are adjacent to the proposed project alignment in some areas. The alignment generally avoids the Angeles National Forest (ANF), but crosses into the ANF in several locations between Palmdale and Santa Clarita.
- A corridor with 500 kV LADWP lines extends from Adelanto (in the Mojave Desert) to the Toluca Substation (in the Los Angeles Basin). This line extends for approximately 68 miles west across the Mojave Desert and crosses the ANF. The line exits and ANF and enters the Los Angeles basin near Sunland.

Improvements in these corridors would involve upgrading the existing 500 kV lines and/or installing a new transmission line. This alternative would increase environmental impacts in most categories. Both alternative corridors identified above are substantially longer than the corridor that would be improved under the proposed project. As such, the construction duration, construction intensity, and construction disturbance area would all increase, thereby increasing temporary impacts in the categories of air quality, noise, GHG emissions, energy, biological resources, and cultural resources. This alternative would also involve construction activities within the ANF, which would result in increased impacts in the categories of recreation and land use. If a new line were to be established within either of the alternate corridors, permanent impacts would increase in the categories of biological resources, aesthetics, and land use, since establishing a new line (especially through the ANF) would increase permanent biological disturbances and visual disturbances and may be inconsistent with applicable land use plans and policies established to protect the

environment. This alternative was ultimately rejected from further analysis in the EIR due to its failure to meet most of the basic project objectives. This alternative is also not expected to avoid or reduce the proposed project's significant and unavoidable construction air quality impact.

Failure to Meet Objectives. Improvements to the two LADWP transmission corridors listed above could allow for increased transmission of renewable energy from the Mojave Desert area to the Los Angeles basin, partially fulfilling the first project objective. However, the two corridors listed above extend from Adelanto to the Los Angeles basin. Adelanto is in the Mojave Desert; however, it is located approximately 60 miles northeast of Los Angeles. The Tehachapi Mountains (which have significant wind energy resources) are located approximately 70 miles northwest of Los Angeles. As such, improvements to the corridors listed above would not allow for increased transmission of renewable energy from the Tehachapi Mountains area. Therefore, this alternative would not meet the first project objective to the same degree as the proposed project. Additionally, the alternate transmission corridors do not extend from the Haskell Canyon Switching Station to the Sylmar Switching Station. (The transmission corridor that would be improved by the proposed project is the only transmission corridor extending from the Haskell Canyon Switching Station to the Sylmar Switching Station.) As such, improving a different LADWP transmission corridor would fail to meet the objective of enhancing the operational flexibility of the Haskell Canyon Switching Station and Sylmar Switching Station. As described in Section 2.4 of this EIR, the proposed project would address thermal violations on transmission lines south of the Haskell Canyon Switching Station, which are expected to occur in the near future due to increased renewable energy development in the areas north of Haskell Canyon Switching Station. Improving transmission lines in other LADWP corridors would fail to address the thermal violations that would occur in the South of Haskell Corridor. As such, use of an alternative transmission corridor would fail to meet the project objective of improving the safety and operational flexibility of the lines within the South of Haskell Corridor to address system reliability concerns. Use of an alternative transmission corridor would potentially meet the project objective of minimizing the environmental disturbance of transmission upgrades by constructing improvements within an existing transmission corridor, since it would still involve use of an existing corridor. However, because the alternate corridors are substantially longer than the corridor that would be used for the proposed project, this alternative would not meet the project objective of avoiding sensitive resources to the extent feasible. Both alternate corridors extend through portions of the ANF, which would increase impacts to sensitive resources when compared to the impacts of the proposed project. Also, because both alternate corridors are substantially longer than the proposed alignment, improvements to both corridors would likely require more extensive access route improvements and would also result in increased disturbance areas. For these reasons, this alternative fails to meet most of the project objectives and is therefore rejected from further consideration.

Environmental Impacts. Both corridors extending from the Adelanto area are substantially longer than the proposed alignment. As such, improvements in these corridors would likely result in increased environmental impacts in most categories, as explained above. Additionally, one of these corridors crosses the ANF, and the other extends through several areas of the ANF. As such, construction within these corridors may result in additional environmental disturbance relative to the proposed project, due to construction occurring within generally undisturbed, remote, and protected natural areas. Additionally, the proposed project's significant and unavoidable air quality impact due to NO_x emissions during construction would not likely be avoided or reduced by this alternative. This impact is primarily

driven by the use of heavy-duty helicopters for transmission structure removals/installations in difficult-to-reach and environmentally sensitive areas of the alignment. While an alternative alignment would change the structure installation locations, it is unlikely that all of the new locations would be located in easily accessible places, particularly because both of the alternate corridors extend through mountainous, hilly areas. Additionally, use of either alternate corridor is expected to require more helicopter installations than the proposed project. (This is because both corridors are longer and both corridors extend through longer areas of mountainous, hilly terrain when compared to the proposed project alignment.) As such, heavy-duty helicopter use may increase under this alternative, thereby extending the duration of associated air quality and noise impacts and/or increasing the intensity of these impacts. Some of these new, additional impacts (particularly those that would occur within or near the ANF) would occur in remote areas, away from residential sensitive receptors. However, both corridors still pass through developed areas and residential communities; as such, impacts to sensitive receptors would still occur and would generally be similar or greater than those of the proposed project. Overall, this alternative is expected to result in increased environmental impacts relative to the proposed project and would not avoid or reduce the proposed project's significant and unavoidable construction air quality impact.

Reconductor the Existing 115 kV Transmission Line

Under this alternative, the existing conductors along the 115 kV line would be replaced with new conductors that would have a larger diameter to allow for greater electrical capacity. The transmission structures that support the existing 115 kV line were not designed to hold a heavier 230 kV conductor. As such, all of the existing towers and tower foundations would need to be removed and replaced or modified. The transmission structures would also need to be taller than the existing 115 kV structures, which could be accomplished through tower raising or by installing new, taller towers. Additionally, a heavier conductor would result in greater line sag, which would decrease the ground-to-conductor clearance of the line. Grading underneath the lines would therefore be required in some areas along the alignment to provide sufficient ground clearances. This alternative would involve some of the same construction activities and processes as the proposed project. Stringing pads would still be established along the alignment, and work areas would still be required around the existing transmission structures. The existing conductors associated with the existing 115 kV line would still need to be removed. However, work areas and activities associated with the proposed 230 kV line installation would not occur, and upgrades would not occur at the Sylmar Switching Station. Due to the activities that would be required to accommodate a heavier conductor, the overall construction intensity, duration, and areas of disturbance may increase under this alternative, which would increase construction impacts in the categories of air quality, noise, GHG emissions, energy, biological resources, and cultural resources. Permanent impacts in the category of biological resources could be reduced, since no new structure locations would be established, thereby reducing permanent biological disturbances. This alternative was rejected from further analysis in the EIR due to infeasibility and inability to avoid or reduce the proposed project's significant and unavoidable construction air quality impact. Additionally, this alternative would not meet some of the project objectives to the same degree as the proposed project.

Failure to Meet Objectives. This alternative would increase the electrical capacity of the 115 kV line. As such, it would help alleviate constraints for transferring renewable energy supplies from the Tehachapi Mountains and Mojave

Desert areas to the highly populated Los Angeles basin, consistent with the project's underlying purpose. However, it would not fulfill this purpose to the same degree as the proposed project, because transfer capacity would still remain constrained, thereby limiting the delivery of renewable energy. While reconductoring may improve the safety and operational flexibility of the line to an extent, it would not do so to the same degree as the proposed project. Safety and reliability issues would still arise along the reconductored 115 kV line, since this alternative would not fully resolve energy transfer constraints through the South of Haskell Corridor. This alternative would continue to meet the objective of minimizing the environmental disturbance of transmission upgrades by constructing improvements within an existing transmission corridor; avoiding sensitive resources to the extent feasible; and minimizing the number of new access routes. However, this alternative would not meet this objective to the same degree as the proposed project, since it may result in additional construction activities and disturbances associated with grading underneath the line.

Environmental Impacts. The proposed project's significant and unavoidable air quality impact, which is associated with NO_x emissions during construction, would not likely be avoided by this alternative. This impact is primarily driven by the use of heavy-duty helicopters for transmission structure removals/installations in difficult-to-reach and environmentally sensitive areas of the alignment. Under this alternative, the existing 115 kV transmission structures would need to be replaced or modified. Replacing or modifying existing transmission structures in difficult-to-reach and environmentally sensitive areas would still involve the use of a heavy-duty helicopter, since the work would be similar to the structure removal/installation process that would occur for the proposed project. Criteria air pollutant thresholds are based on maximum daily emissions, and the use of a heavy-duty helicopter alone exceeds the maximum daily emission threshold for NO_x. As such, a significant and unavoidable impact would still occur, and this alternative would not avoid the significant environmental impacts of the project.

Infeasibility. Reconductoring the existing 115 kV line would not be feasible because it would not provide adequate power transfer capacity within the South of Haskell Corridor, since the voltage would remain the same. A 230 kV voltage upgrade of the line is necessary to meet the new line rating requirement.

Additionally, the existing towers and foundations are not designed to support a heavier conductor and the resulting higher wind loading. As described above, the existing transmission towers and their foundations would have to be replaced under this alternative, and most of the new structures would have to be taller to provide sufficient clearance over the ground due to higher sag of the new conductor. As such, a complete rebuild of the line would be required, which would be similar in scale to the new 230 kV line construction. As such, this alternative would result in similar or greater construction activities but would provide little benefit in terms of renewable energy transmission.

Undergrounding

Under this alternative, the existing 115 kV line would still be removed, and the replacement 230 kV line would be installed underground, within the same transmission corridor that would be used for the proposed project. This alternative would require grading and trenching along most of the 12-mile project alignment to install the underground transmission line. Horizontal boring may be required in select locations, and maintenance vaults would be installed along

the alignment to provide access for maintenance, inspections, and repairs during operation. Switching station tie-ins and upgrades would still occur under this alternative but would likely involve additional ground disturbance and improvements relative to the proposed project. Operational activities for the underground 230 kV line would differ slightly from those of the proposed project, since they would involve inspections at the maintenance vaults rather than inspection via ground and air patrols. Because the conductors would be underground, emergency maintenance and repairs may require greater amounts of ground disturbance, equipment, and workers, relative to emergency maintenance and repairs for the proposed aboveground 230 kV line. This alternative would increase environmental impacts in most categories. Grading, trenching, and/or boring along the alignment would increase the overall construction intensity, duration, and disturbance acreage. Additionally, the amount of time spent at individual work areas along the alignment would likely increase relative to the proposed project. During construction, temporary impacts in the categories of air quality, noise, GHG emissions, energy, biological resources, and cultural resources would therefore increase. This alternative would likely decrease permanent impacts in the categories of biological resources and aesthetics, since an underground line would involve fewer permanent aboveground structures with the potential to cause permanent impacts to biological resources and visual resources. However, operational maintenance impacts may increase, since accessing the line would be more difficult. This alternative was rejected from further analysis in the EIR because it would not avoid any significant environmental impacts of the proposed project. This alternative also fails to fully implement the project objectives and would not be feasible.

Environmental Impacts. Undergrounding the new 230 kV line would increase the environmental impacts of the project in most categories, as explained above. Additionally, the proposed project's significant and unavoidable air quality impact due to NO_x emissions during construction would not likely be avoided by this alternative. This impact is primarily driven by the use of heavy-duty helicopters for transmission structure removals/installations in difficult-to-reach and environmentally sensitive areas of the alignment. While this alternative would not involve structure installations, the existing 115 kV line would still be removed. As described in Chapter 2, some of the structure removals for the existing 115 kV line would involve use of a helicopter to facilitate removal. As such, heavy-duty helicopters would still be used for this alternative, resulting in a significant and unavoidable effect in the category of air quality. Additionally, digging a trench or jacking the new transmission line along the entirety of the proposed 12-mile project alignment would likely increase air emissions during construction, including NO_x emissions. As such, the significant and unavoidable impact of the proposed project could potentially worsen under this alternative. For these reasons, this alternative would not avoid the significant environmental impacts of the project and is therefore rejected from further consideration.

Failure to Meet Objectives. While this alternative would still occur within the existing transmission corridor, it would not minimize environmental disturbances within the corridor, when compared to the proposed project. Similarly, this alternative would not avoid sensitive resources to the extent feasible, since it would increase ground disturbance and construction intensity relative to the proposed project. The number of access routes necessary to complete the project may also increase with the undergrounding alternative. As such, this alternative would not meet the objective of minimizing environmental disturbance, avoiding sensitive resources, and minimizing the number of new access routes to the same degree as the proposed project. While all other objectives would be met, the achievement of these objectives would be delayed, due to the increased construction duration. While this alternative

would ultimately increase the transmission capacity in the South of Haskell Corridor, delay of project completion may lead to safety and reliability issues. As explained in Section 2.4 of this EIR, the 2021 energy scenario with existing and probable renewable energy infrastructure in the Mojave and Tehachapi areas shows thermal violations on transmission lines south of the Haskell Canyon Switching Station. Lengthening the construction timeframe would jeopardize LADWP's ability to address the safety and reliability concerns that are calculated to occur in the near future along the South of Haskell Corridor. Similarly, both GHG reductions and RPS have associated timelines for enforcement (e.g., 44% of electricity sold must come from renewable sources by 2024). As such, lengthening the construction timeframe would also jeopardize LADWP's ability to attain its applicable state and local GHG reduction and RPS requirements. As such, this alternative would not meet the objective of assisting LADWP in reducing GHG emissions and meeting RPS goals to the same degree as the proposed project.

Infeasibility. Undergrounding would not be feasible within the South of Haskell Corridor due to the mountainous terrain and length of the alignment. Under the proposed project, some of the structure removals and installations would occur via helicopter in order to avoid sensitive environmental areas and/or to conduct work in difficult-to-reach areas. The activities required for undergrounding would involve trenching or boring, both of which require subsurface excavation and could be feasibly achieved via helicopter. As such, grading, trenching, and/or boring along the entirety of the South of Haskell Corridor would not be feasible, from an engineering and design standpoint.

Alternate Voltages (Reduced Voltage or Increased Voltage)

The voltage of a transmission line determines how much electricity the line can transmit, with higher voltage lines transmitting more electricity. As such, increasing the voltage of the line would increase the project's ability to achieve the underlying project purpose of alleviating constraints for transferring renewable energy supplies from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin. In general, as the voltage increases, the height of the supporting towers, footprint of the towers, size of the insulators, and distance between conductors on towers also increases. Under the Alternate Voltages Alternative, the voltage of the proposed replacement line would either be decreased or increased. The decreased voltage would still be greater than 115 kV but would be less than 230 kV. The increased voltage would be greater than 230 kV. With decreased voltage, the proposed transmission line would have smaller, shorter transmission structures with smaller footprints relative to those of the proposed project; however, more new structures would be required. As a result, overall construction effects and intensity would be similar to that of the proposed project. Permanent impacts in the categories of aesthetics and biological resources could decrease, since the transmission structures would be smaller and shorter and therefore less visually prominent and would have smaller footprints. However, more structures would be required, so additional permanent visual and biological effects could occur in some locations. With increased voltage, the proposed transmission line would have larger, taller transmission structures with larger footprints; however, fewer new structures would be required. Overall, construction effects and intensity would therefore be similar to that of the proposed project. Permanent effects in the categories of biological resources and aesthetics may increase during operation, since the structures would be more visually prominent and would have larger permanent footprints. However, fewer structures would be required, which could also decrease impacts in certain locations. This alternative was ultimately rejected from detailed consideration in the EIR because it would not avoid any significant

environmental impacts of the proposed project. Additionally, using a decreased voltage would not meet some of the project objectives to the same degree as the proposed project.

Environmental Impacts. Regardless of whether the voltage is increased or decreased, the proposed project's significant and unavoidable air quality impact would not likely be avoided or reduced. This impact is primarily driven by the use of heavy-duty helicopters for transmission structure removals/installations in difficult-to-reach and environmentally sensitive areas of the alignment. Even if structure sizes and locations were to increase or decrease, the corridor would still extend through mountainous areas, requiring the use of heavy-duty helicopters for structure installations and removals in difficult-to-reach and environmentally sensitive areas. Criteria air pollutant thresholds are based on maximum daily emissions, and the use of a heavy-duty helicopter alone exceeds the maximum daily emission threshold for NO_x. As such, alternate voltages for the new line would not avoid the project's significant environmental impact and is therefore rejected from further consideration.

Failure to Achieve Objectives. Increasing the voltage of the line would increase the project's ability to meet many of the objectives, because it would allow for even more transmission of renewable energy through the South of Haskell Corridor. However, decreasing the voltage of the proposed line below 230 kV would not achieve most of the project objectives to the same degree as the proposed project. The underlying project purpose of alleviating constraints for transferring renewable energy supplies would still be achieved, but it would be achieved to a lesser degree. Similarly, transmission of renewable energy would be still be increased, but to a lesser degree. The objectives of assisting LADWP in reducing greenhouse gas emissions and in meeting RPS goals would also still be achieved, but also to a lesser degree. Additionally, the 230 kV line was selected and designed to resolve thermal violations on the transmission lines south of the Haskell Canyon Switching Station. A new line with reduced voltage would compromise the project's ability to address these identified safety and reliability concerns, thereby reducing the degree to which the project improves the safety and operational flexibility of energy transmission in the South of Haskell Corridor.

Direct Current Alternative

This alternative would use direct current (DC) for power transmission, rather than alternating current (AC), which is the type of current that would be used for the proposed project. DC conductors can transfer approximately twice the power of AC conductors, can increase system stability, and can prevent failures from spreading. DC transmission structures would be wider than those that would be installed under the proposed project and would require additional right-of-way. There is not currently enough width in the existing transmission corridor to accommodate a new DC line. As such, LADWP would need to acquire land alongside the existing transmission corridor to allow for its expansion. The DC system would also require additional facilities at Haskell Canyon Switching Station and Sylmar Switching Station (new DC to AC converters, filter banks, control houses, and transformers). Both stations would need to be expanded in size to accommodate the new equipment. This alternative would still involve removal of the existing 115 kV line, similar to the proposed project. Operation of the new DC line would occur in a manner similar to the operation of the proposed project. Maintenance activities may increase at the switching stations, due to the increased size of the stations and increased amount of equipment. The environmental impacts of this alternative would be greater than those of the proposed project. The construction process for removing the existing 115 kV line

and installing the new line would be similar or identical to that of the proposed project. However, construction intensity and disturbance areas along the alignment would increase, since a DC line would require expansion of the transmission corridor and the switching stations, and the transmission towers would require larger footprints. The existing Haskell Canyon Switching Station is approximately 7 acres in size, and substantial expansion would be required to accommodate the necessary equipment for the DC line. The Angeles National Forest boundaries are located to the north, east, and west of the Haskell Canyon Switching Station, and the station is surrounded by open space. As such, expansion of the Haskell Canyon Switching Station would result in encroachments onto existing open space areas and could result in encroachments onto National Forest lands. The switching station improvements, right-of-way expansion, and larger transmission structure footprints required for the DC Alternative would increase construction-related impacts in the categories of air quality, noise, GHG emissions, energy, biological resources, and cultural resources. Expanding the switching stations and the transmission corridor right-of-way would also increase impacts in the category of land use and planning, since land use conversions would be required. Permanent impacts would increase in the category of biological resources, due to an overall expansion in permanent disturbance area. Permanent impacts may also increase in the category of aesthetics, since the DC transmission structures would be wider than the proposed transmission structures and would therefore be more visually prominent. While this alternative would increase impacts, it would enhance the project's ability to achieve the underlying project purpose of alleviating constraints for transferring renewable energy supplies from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin. It would also increase the degree to which the project would assist LADWP in reducing GHG emissions and meeting RPS goals. It would also increase the degree to which the project would improve the safety and operational flexibility of the line to address system reliability concerns associated with increased use of solar and wind energy sources. While this alternative would enhance the project's ability to meet some of the objectives, it was ultimately rejected from detailed consideration in the EIR because it would not avoid any significant environmental impacts of the proposed project. Additionally, it may not be feasible and would also not meet the objective of minimizing environmental disturbances to the same degree as the proposed project.

Environmental Impacts. The DC Alternative would result in greater environmental impacts relative to the proposed project. Additionally, the proposed project's significant and unavoidable air quality impact due to NO_x emissions during construction would not likely be avoided or reduced by this alternative. This impact is primarily driven by the use of heavy-duty helicopters for transmission structure removals/installations in difficult-to-reach and environmentally sensitive areas of the alignment. Under the DC Alternative, construction along the alignment would occur in a manner similar to or identical to that of the proposed project. As such, use of heavy-duty helicopters would still be needed for certain structure removals and installations. NO_x emissions would, therefore, be similar to those of the proposed project during removal of the existing 115 kV line and installation of the new DC line. NO_x emissions may also increase, since overall construction activity may intensify relative to the proposed project. As such, the DC Alternative would not avoid the significant environmental impacts of the project and would increase impacts in some categories. For these reasons, this alternative would not avoid the significant environmental impacts of the project and is therefore rejected from further consideration.

Infeasibility. DC transmission lines are primarily used for long transmission lines (longer than the proposed alignment) and require specialized equipment to operate. The switching stations and the transmission corridor right-

of-way would need to be expanded in size to accommodate a DC line. Due to the land uses that currently surround the transmission corridor and switching stations, land would need to be acquired within existing, developed neighborhoods and established open space areas. Even if it were possible for LADWP to acquire additional land to expand the switching stations and the transmission corridor width, this scenario would not be reasonable or feasible from a land use perspective.

New Conductor Technology Alternative

Under the New Conductor Technology Alternative, the proposed 230 kV line would be constructed using a superconductor. Superconductors are made of materials that can conduct electricity with no resistance. Unlike traditional conductors, a superconductor can carry a current without losing energy. As such, this alternative would allow for the transmission of more electricity along the new line. Superconductor technology could also be used to reduce the proposed project to a single-circuit line. Under this alternative, the existing 115 kV line would still be removed, and switching station tie-ins and upgrades would still occur in a manner similar to that of the proposed project. Under the New Conductor Technology Alternative, environmental impacts during construction would increase. While the overall construction process would be similar to that of the proposed project, installation of superconductors may require greater ground disturbance and a longer construction duration relative to the proposed project, which would increase temporary impacts in the categories of air quality, noise, GHG emissions, energy, biological resources, and cultural resources. Operational impacts are expected to be similar to those of the proposed project. However, if superconductor technology were used to reduce the proposed double-circuit 230 kV line to a single-circuit line, aesthetics impacts may slightly decrease, since the new transmission line would have reduced visual presence. While impacts would be similar to those of the proposed project, this alternative was ultimately rejected from detailed consideration in the EIR due to infeasibility and inability to avoid the significant impacts of the project.

Infeasibility. Superconductors are still in a developmental stage. The longest superconducting power transmission line is approximately 0.6 mile in length (Nexans 2019). As such, installation of superconductor along a 12-mile alignment, connecting the Haskell Canyon Switching Station to the Los Angeles basin, is not currently feasible. As such, this alternative would not be possible to implement while still meeting the project objectives of transferring increased renewable energy supplies from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin. For these reasons, this alternative is not considered feasible and is therefore rejected from further consideration in this EIR.

Environmental Impacts. Superconductors may result in increased construction impacts relative to those of the proposed project due to the greater ground disturbance and a longer construction duration relative to the proposed project. Furthermore, the project's significant and unavoidable impact in the category of construction air quality would still occur, because construction of a transmission line with superconducting technology would still involve the use of heavy-duty helicopters for certain structure removals and installations. As such, this alternative would not reduce or avoid the project's significant construction air quality impact which is tied to the use of heavy-duty helicopters for structure removals and installations.

5.2 Alternatives Carried Forward for Consideration

Pursuant to Section 15126.6 of the CEQA Guidelines, LADWP selected a reasonable range of alternatives to the project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen one or more of the significant effects of the project. As discussed above, the proposed project would result in a significant and unavoidable air quality effect during construction. The effect is specifically tied to use of heavy-duty helicopters for transmission structure removal and installation. Based on consideration of this significant and unavoidable impact, as well as the evaluation of potential alternatives that were considered but rejected in Section 5.1.2 above, two alternatives have been carried forward for further analysis below. Pursuant to Section 15126.6(d) of the CEQA Guidelines, sufficient information about each alternative has been included in the descriptions below to allow meaningful evaluation, analysis, and comparison with the proposed project.

Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives is required to focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. Based on these considerations, the alternatives presented below would avoid or substantially lessen the proposed project's significant impacts identified in the category of construction air quality.

5.1.1 Alternative 1 – No Project Alternative

Section 15126.6(e) of the CEQA Guidelines requires that an EIR evaluate the specific alternative of "no project" along with its impact. As stated in this section of the CEQA Guidelines, the purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. As specified in Section 15126.6(e)(3) of the CEQA Guidelines, for projects other than land use plans or regulatory plans, the "no project" alternative is the circumstance under which the project does not proceed. The CEQA Guidelines state that the discussion then compares the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed. In certain instances, the no project alternative means "no build" wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval.

Accordingly, Alternative 1 assumes the proposed project would not proceed. The existing 115 kV transmission line would continue to operate within the South of Haskell Corridor. No infrastructure improvements would occur within this corridor or at the switching stations. As explained in Chapter 2 of this EIR, the 2021 energy scenario with existing and probable renewable energy infrastructure in the Mojave and Tehachapi areas shows thermal violations on transmission lines south of the Haskell Canyon Switching Station. This indicates that line currents would increase to the extent that safety and reliability of the line may become compromised. When the line current increases, the

conductor heats, the line elongates, and spans of the line can sag. If lines sag beyond required clearances, code violations and safety hazards may occur. As such, Alternative 1 would include activities that would help address the code violations and safety hazards, such as grading underneath transmission lines, raising the height of existing transmission towers, and/or limiting the amount of energy that is transferred through the South of Haskell Corridor. While the new 230 kV would not be built, Alternative 1 would nevertheless result in construction activities that are similar to those of the proposed project. The activities may occur more sporadically, as various safety hazards are addressed along the alignment over time. However, the ultimate amount of ground disturbance, import/export of soils, and construction vehicle trips would be similar to or greater than that of the proposed project. Operational activities would be similar to existing conditions and to those required for the proposed project. Maintenance and repairs would continue to occur as necessary, similar to existing conditions. However, as the line continues to age, maintenance activities could increase in intensity and frequency.

Ability to Meet Project Objectives

Alternative 1 would not achieve the underlying project purpose of alleviating constraints for transferring renewable energy supplies from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin. Furthermore, it would not achieve any of the specific project objectives. While renewable energy would continue to be transmitted through the South of Haskell Corridor, Alternative 1 would not allow for increased transmission of renewable energy from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin. It would not assist LADWP in reducing GHG emissions and meeting RPS goals, since no change would occur in the amount of renewable energy that can be transmitted through the South of Haskell Corridor. While the existing South of Haskell Corridor currently transmits renewable energy to the Los Angeles basin, state and local standards call for increasingly stringent GHG reductions and increasingly aggressive renewable energy portfolio requirements. Alternative 1 would prevent LADWP from harnessing an opportunity to further reduce GHG emissions and increase its renewable portfolio. Alternative 1 would not improve the safety and operational flexibility of the existing transmission lines and would not enhance the operational flexibility of the Haskell Canyon Switching Station and Sylmar Switching Station. In contrast, Alternative 1 would result in safety and reliability issues along the existing lines. Alternative 1 may also fail to achieve the objective of minimizing the environmental disturbance of transmission upgrades; avoiding sensitive resources to the extent feasible; and minimizing the number of new access routes. This is because Alternative 1 would likely result in disturbances along the transmission corridor to address line sag and clearance issues. These issues are typically addressed by grading underneath sagging lines or by raising transmission towers. The activities would require ground disturbance along the alignment of a magnitude that could potentially exceed that of the proposed project. As such, while Alternative 1 would involve construction of the new line, it may in fact increase environmental disturbances relative to the proposed project.

Comparison of the Effects of Alternative 1 to the Proposed Project

Alternative 1 would likely result in similar or greater construction impacts, when compared to those of the proposed project. While the 115 kV line would not be removed and the 230 kV line would not be constructed, Alternative 1 would likely result in the need for similar or more intensive construction activities, when compared to those of the

proposed project. As explained above, if the proposed project is not built, line clearance issues may occur within the South of Haskell Corridor, which can lead to safety hazards and code violations. LADWP would likely be required to undertake one or more actions to address these issues, including grading underneath the existing lines, raising the heights of transmission towers, and/or limiting the amount of energy that is transmitted through the corridor. The construction effects would likely be similar to those of the proposed project, since Alternative 1 would involve grading under the existing lines and raising transmission towers. While the construction intensity and duration of the individual line clearance solutions may decrease, similar types of equipment would be required for the grading and tower raising processes. Because grading and ground disturbance would still occur throughout the alignment, similar construction impacts would result in the categories of biological resources, cultural resources, geology and soils, and tribal cultural resources. As with the proposed project, impacts would be potentially significant; however, the same or similar mitigation measures provided for the proposed project in the categories of biological resources, cultural resources, geology and soils, and tribal cultural resources would likely reduce impacts to below a level of significance. See Sections 3.3, 3.4, 3.5, and 3.9 in this EIR for the applicable measures. Additionally, in the event that tower raising occurs in difficult-to-reach or environmentally sensitive areas, heavy-duty helicopters may be required to assist in the tower raising process. As with the proposed project, use of heavy-duty helicopters would result in a significant and unavoidable impact in the category of construction air quality. The same mitigation measure (MM-AQ-1) would be applied to reduce construction air emissions. However, if heavy-duty helicopters are needed, impacts would still be significant, even after implementation of MM-AQ-1. As such, Alternative 1 could still result in a significant and unavoidable impact, similar to the proposed project. As with the proposed project, the potential use of helicopters and other construction equipment would still produce construction noise effects, some of which would likely occur within the vicinity of sensitive receptors and could be potentially significant. However, the same mitigation measure provided for the proposed project would reduce this impact to below a level of significance (MM-NOI-1; see Section 3.7 of this EIR for this measure). As such, noise impacts would be less than significant with mitigation incorporated. The construction traffic impacts identified for the proposed project would likely be reduced under Alternative 1. The most traffic-intensive phase of construction for the proposed project (Switching Station Tie-Ins and Upgrades) would not occur for Alternative 1. However, worker vehicle trips and truck trips would still be required for the grading and tower raising activities associated with Alternative 1. While impacts would be reduced, the reduction in the degree of impact would not be substantial enough to change overall impact determinations. Impacts in the category of traffic and transportation would be less than significant. Similarly, construction-related energy use would be reduced under Alternative 1. The construction intensity would decrease, and some activities would be eliminated. While energy use would decrease, the reduction in the degree of impact would not be substantial enough to change overall impact determinations. Energy impacts would be less than significant.

Some operational impacts associated with the proposed project would be avoided. The massing and appearance of transmission structures within the project alignment would remain the same (although some structures may be taller where transmission structure raising is required). As such, aesthetic impacts would decrease but not to the extent that no effects would occur. The corona noise from the transmission corridor would not change, so no operational noise effects would occur. Operational effects may increase in the category of GHGs, because Alternative 1 would fail to implement GHG reduction policies and plans, since it would not increase renewable

energy transmission through the South of Haskell Corridor. Operational effects in other categories would be generally the same as those of the proposed project, since the 115 kV line would require periodic inspection, maintenance, and repairs, similar to existing conditions and to the operational activities that would be required for the proposed 230 kV line. However, over time, it is possible that maintenance and repairs to the 115 kV line could increase in frequency and intensity, since the line is aging. Additionally, Alternative 1 would result in safety and reliability issues along the existing transmission lines in the South of Haskell Corridor, potentially leading to code violations and safety hazards. In summary, some impacts would stay the same under Alternative 1, some would be reduced or eliminated, and others may increase. Table 5-1 provides a comparison of the environmental effects of the project to the alternatives presented in this section, including Alternative 1.

5.1.2 Alternative 2 – No Helicopter Use for Structure Installations and Removals

This alternative would be generally identical to the proposed project with the exception of the construction scenario. Under this alternative, helicopters would not be used for structure removals or installations. The structures that would be installed or removed via heavy-duty helicopter under the proposed project would be installed via crane and workers in man lifts under Alternative 2. Under the proposed project, structure installations would occur via heavy-duty helicopter along three segments of the alignment: from proposed structure 4-2 through 5-2; from proposed structure 9-2 through 9-6; and from proposed structure 10-3 through 12-1. Segments 9-2 through 9-6 and 10-3 through 12-1 extend through an undeveloped, mountainous area between I-210 and SR-14. This area includes Whitney Canyon Park and Elsmere Canyon Open Space, and the Angeles National Forest boundaries are approximately 1,500 feet west from this area of the alignment. The segment extending from structures 4-2 through 5-2 has some surrounding hillside residential developments. The closest residence along this segment is approximately 120 feet west of proposed structure location 4-2. The locations where helicopters would be used for structure removal are currently unknown. However, they are expected to be similar in location and in nature to the structure installation sites that are expected to require helicopter use. Under the proposed project, these structures would be removed or installed via helicopter because they are located in difficult-to-reach areas or in environmentally sensitive areas. As such, access to these locations for off-road construction equipment such as cranes would require additional construction work to establish access and sufficient work areas. New or improved access routes would be required to allow passage of heavy-duty construction vehicles over otherwise difficult terrain. Additional site preparation beyond what is anticipated for the proposed project would be required to create appropriate equipment access and work pads in difficult-to-reach and/or environmentally sensitive areas. Additional slope stabilization and geotechnical engineering measures may also be required at these locations. Due to increased grading in open space and environmentally sensitive areas, this alternative would also involve a more intensive site rehabilitation phase. For these reasons, the construction duration, overall acreage of ground disturbance, and soil import/export would increase relative to the proposed project. Operational activities for Alternative 2 would be generally the same as those identified for the proposed project.

Ability to Meet Project Objectives

Alternative 2 would meet all of the project objectives to the same degree as the proposed project, with the exception of the objective to minimize the environmental disturbance of transmission upgrades by constructing improvements within an existing transmission corridor and within existing switching stations; avoiding sensitive resources to the extent feasible; and minimizing the number of new access routes. While Alternative 2 would still involve construction of transmission upgrades within an existing transmission corridor, it would generally increase environmental disturbances within the corridor. Additionally, it would not avoid sensitive resources to the extent feasible, since it would involve increased grading and increased use of off-road construction equipment in difficult-to-reach and environmentally sensitive areas that would be more easily accessed via helicopter. Alternative 2 would also require additional and/or expanded access routes, to allow passage of heavy-duty off-road equipment across hilly and mountainous terrain, resulting in greater temporary and permanent impacts.

Comparison of the Effects of Alternative 2 to the Proposed Project

Alternative 2 would change the construction methods along select segments of the project alignment. As such, the direct and indirect construction effects along portions of the alignment would change. However, the transmission line design and location would remain the same. As such, operational effects would not generally change relative to those identified for the proposed project. However, where intensive grading is required for structure installations or removals in difficult-to-reach areas, increased permanent effects could result, as full site rehabilitation may not be possible in all locations. Alternative 2 would avoid the proposed project's significant and unavoidable construction air quality effect, since it would not involve the use of heavy-duty helicopters. It would also decrease construction effects in other categories, such as noise, although the reduction in the degree of impact would likely not be substantial enough to change the overall impact determination. Construction impacts in most other categories would increase, due to increased grading acreages, increased construction duration, and increased vehicle trips along certain segments of the alignment.

Aesthetics

The effects of Alternative 2 would be similar to those identified for the proposed project, since the transmission line and the transmission structures would be of the same height, location, and design. Permanent impacts to the appearance of some difficult-to-reach hillside areas could result where extensive grading is required and full site rehabilitation is not possible. However, impacts are expected to remain less than significant, for the same reasons described in Section 3.1 of this EIR.

Air Quality

Under Alternative 2, most aspects of construction would increase in intensity. Establishing access for heavy-duty off-road equipment for the structures that would otherwise be installed or removed via helicopter would increase the overall construction duration, number of equipment pieces and workers, vehicle trips, soil import/export quantities, and grading acreages. The increased construction intensity could increase overall air quality emissions throughout

construction, as well as the duration that construction-related pollutants are emitted by the project. However, as described in Section 3.2, the proposed project's significant and unavoidable air quality impact is attributable to the use of heavy-duty helicopters. As such, elimination of heavy-duty helicopters from use during construction would reduce the maximum air emissions of the project. MM-AQ-1, which requires use of Tier 3 engines for construction equipment, would still be required for Alternative 2 in order to address emissions from construction equipment (see Section 3.2 for the full text of MM-AQ-1). Operational impacts would be the same as those discussed for the proposed project, since maintenance activities would be generally the same. With implementation of MM-AQ-1, the air quality impacts for Alternative 2 are expected to be less than significant with mitigation incorporated.

Biological Resources

Alternative 2 would increase ground disturbance in some of the more environmentally sensitive areas of the project alignment. Under the proposed project, helicopter installations would occur along three segments of the alignment, two of which extend through an undeveloped, mountainous area between I-210 and SR-14. This area includes Whitney Canyon Park and Elsmere Canyon Open Space, and the Angeles National Forest boundaries are approximately 1,500 feet west from this area of the alignment. Under Alternative 2, structure installations in this area would no longer occur via helicopter, and ground disturbance would increase at most structure locations, thereby increasing impacts to naturalized habitat areas. Construction duration at these locations would also increase, thereby increasing the amount of time that human activity and construction noise would occur within and near natural habitat areas. Permanent impacts may also increase, in areas of intensive grading where full site rehabilitation is not feasible. The same mitigation measures provided for the proposed project (MM-BIO-1 through MM-BIO-10) would still reduce impacts, likely below a level of significance. (See Section 3.3 for the full text of these measures.) As such, impacts are expected to remain less than significant with mitigation incorporated.

Cultural Resources

Alternative 2 would increase ground disturbance along certain areas of the alignment, where heavy-duty off-road construction equipment would be used for structure removals and/or installations instead of helicopters. Increased ground disturbance, particularly in undisturbed areas, would increase the potential to encounter previously undiscovered, buried cultural resources and paleontological resources. Additionally, increased ground disturbance within previously identified cultural resource sites could increase impacts at those locations. Specifically, structure 4-2 is proposed just south of an identified cultural resources site. In the event that the grading area around structure location 4-2 were to be expanded, impacts could occur to the previously identified cultural resource near this location. There are no previously identified cultural resource sites in the other segments of the alignment where helicopter use was assumed for the proposed project. The same mitigation measures provided for the proposed project (MM-CUL-1 through MM-CUL-4) would still reduce impacts, likely below a level of significance, although expanded measures may be required for work near structure 4-2. (See Section 3.4 for the cultural resource mitigation measures.) As such, impacts would likely remain less than significant with mitigation incorporated.

Geology and Soils

Under Alternative 2, the project alignment and proposed transmission structure locations would be the same as those identified for the proposed project. Therefore, impacts related to geologic and geotechnical hazards would be generally the same as those identified for the proposed project in Section 3.5 of this EIR. However, as described in Section 3.5, project grading would potentially increase or exacerbate the potential for landslides to occur and would directly or indirectly cause potentially substantial adverse effects, including the risk of loss, injury, or death involving landslides. Alternative 2 would involve increased grading relative to the proposed project. Some of this increased grading would occur in particularly hilly, mountainous portions of the project alignment. As such, the potentially significant impact involving landslides would increase in severity and in scope under Alternative 2. A mitigation measure (MM-GEO-1) is identified for the proposed project and would reduce impacts to below a level of significance. MM-GEO-1 would also be applied to Alternative 2 and is also expected to reduce impacts to below a level of significance; see Section 3.5 of this EIR for this measure. With implementation of MM-GEO-1, impacts in the category of geology and soils would be less than significant with mitigation incorporated.

Greenhouse Gas Emissions

As with the proposed project, the GHG emissions from Alternative 2 would be attributable to construction activities. GHG emissions may decrease, since heavy-duty helicopters would not be used for Alternative 2. (Heavy-duty helicopters are a primary source of emissions for the proposed project.) However, even with use of heavy-duty helicopters, the GHG impacts of the proposed project would be less than significant. While impacts would be reduced under Alternative 2, the reduction in the degree of impact would not be substantial enough to change overall impact determinations. Impacts would be less than significant.

Noise

Under Alternative 2, heavy-duty helicopters would not be used for construction. This would increase the temporary construction-related noise that is experienced at some noise-sensitive receptors along the alignment. Under the proposed project, heavy-duty helicopters would be used to install structures along three segments of the alignment, as described above. Two of these segments extend through an undeveloped, mountainous area between I-210 and SR-14, and one segment extends through hillside residential developments. (The closest residence along this segment is approximately 120 feet west of proposed structure location 4-2.) The locations where helicopters would be used for structure removal are currently unknown. However, they are expected to be similar in location and in nature to the structure installation sites that are expected to require helicopter use. Helicopter noise experienced by recreationists in the open space areas between I-210 and SR-14 would be reduced under Alternative 2, and helicopter noise experienced at the residences near structures 4-2 through 5-2 would also be reduced. However, the length of construction time required in these areas would increase, since more grading and soil import/export would be involved to establish site access. As such, receptors near structure installation/removal sites where helicopter use was assumed for the proposed project may experience construction noise effects for longer than they would under the proposed project. Some helicopter use would still occur for conductor stringing/removal along the alignment; however, overall helicopter traffic along the alignment would decrease. The number of lift offs and take offs occurring

at the proposed helicopter laydown areas would also decrease, thereby lowering the instances of helicopter noise at these locations. However, the construction noise experienced at the closest noise-sensitive receptors would remain generally the same under Alternative 2. The nearest structure removals and installations would occur at structure locations 12-6 and 12-7. (Removals at these locations would occur between 35 feet to 45 feet from the nearest residential receptor, and installations at these locations would occur between 120 feet to 140 feet from the nearest residential receptor.) These locations are not within the segments anticipated for helicopter installation under the proposed project. As such, the highest noise levels that are predicted to occur at the nearest residences during construction would remain generally the same under Alternative 2. Groundborne vibrations may increase under Alternative 2, due to increased use of heavy-duty off-road construction equipment in some areas of the alignment. However, as described above, many of these areas are within the undeveloped, mountainous area between I-210 and SR-14. As such, increased vibration would not generally occur near sensitive receptors. As with construction noise, the construction vibration experienced at the closest residential sensitive receptors would remain the same. As with the proposed project, MM-NOI-1 would be applied to Alternative 2 and would reduce construction noise to below a level of significance. Operational noise under Alternative 2 would be generally the same as the operational noise identified for the proposed project, since operational activities and conditions would be the same. Overall, temporary construction noise impacts at some locations may decrease under Alternative 2. However, mitigation would still be required, and impacts would be less than significant with mitigation incorporated.

Transportation and Traffic

Construction traffic would be similar to that identified for the proposed project. However, vehicle trips may increase within the vicinity of the structure installations and removals that would have occurred via helicopter under the proposed project. Without helicopter assistance, additional workers and vehicles may be required to remove or install these structures. The duration of construction may also increase at these locations, thereby extending the duration of the increased traffic. However, the increased construction traffic would only occur along portions of the alignment where helicopter use was assumed for the proposed project. Furthermore, the phase of construction that would generate the highest volume of construction-related traffic (Switching Station Tie-Ins and Upgrades) would not change under Alternative 2. This phase would proceed in a similar manner under both the proposed project and Alternative 2. Even during the maximum trip-generating phase of construction, traffic generated by project construction would not generate enough peak hour traffic volumes to create a significant impact, as described in Section 3.8. As such, even if trips were to increase during portions of the Demolition phase and the Transmission Structure Installation phase under Alternative 2, impacts would remain less than significant.

Tribal Cultural Resources

Alternative 2 would increase ground disturbance along certain areas of the alignment, where heavy-duty off-road construction equipment would be used for structure removals and/or installations instead of helicopters. Increased ground disturbance, particularly in undisturbed areas, would increase the potential to encounter previously undiscovered, buried tribal cultural resources. However, as with the proposed project, MM-TCR-1 through MM-TCR-4 would be applied to Alternative 2 and would reduce these impacts to below a level of significance. (See Section 3.9

for these measures.) With implementation of MM-TCR-1 through MM-TCR-4, impacts would less than significant with mitigation incorporated.

Energy

Under Alternative 2, energy consumption during construction would change slightly. Construction energy consumption for both the proposed project and Alternative 2 would be primarily in the form of fuel used for construction equipment and vehicles, as described in Section 3.10 of this EIR. The helicopter fuel demand identified in Table 3.10-7 for transmission structure removal/installation would be eliminated under Alternative 2. However, worker vehicle trips, vendor truck trips, and haul truck trips may increase, due to increased grading and associated increases in soil import/export. As such, fuel consumption attributable to vehicle trips and truck trips would increase. Energy use during construction would increase in some categories and decrease in other categories; as such, overall energy consumption would be similar overall. As with the proposed project, the fuel demand for Alternative 2 would be negligible relative to the overall amount of fuel consumed in California over the course of the construction period. As such, construction energy consumption would be less than significant. Operational conditions and activities would not differ between the proposed project and Alternative 2; therefore, as with the proposed project, no operational impacts would occur. As with the proposed project, Alternative 2 would be built and operated in accordance with all existing, applicable regulations at the time of construction. As such, impacts related to conflicts with plans for renewable energy and energy efficiency would be less than significant.

5.3 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) indicates that an analysis of alternatives to a project shall identify an Environmentally Superior Alternative among the alternatives evaluated in an EIR. The CEQA Guidelines also state that should it be determined that the No Project Alternative is the Environmentally Superior Alternative, the EIR shall identify another Environmentally Superior Alternative among the remaining alternatives.

A comparative summary of the environmental impacts associated with each alternative is provided in Table 5-1. Impacts under Alternative 1 would be similar to those of the proposed project, although the proposed project's less-than-significant aesthetic impacts would be eliminated, since no new transmission structures or lines would be installed. Alternative 2 would eliminate the proposed project's potentially significant and unavoidable impact related to construction air quality. The project's potentially significant and unavoidable impact is associated with exceedances of daily emissions thresholds for NO_x, which would occur for approximately 42 days throughout the 4-year construction period (see Section 3.2 for details). As discussed in Section 3.2, these exceedances would only occur on days when heavy-duty helicopters are in use. Because Alternative 2 would not involve use of heavy-duty helicopters, this exceedance would no longer occur. However, the magnitude of impacts in other categories would increase under Alternative 2, as described in Section 5.1.2. While it is likely that such impacts could still be reduced to below a level of significance with mitigation, expanded mitigation may be required, and the overall severity of the impacts would likely increase. For example, construction duration would increase under Alternative 2, which would increase the time that individual receptors are affected by air pollutants, noise, and traffic from construction. Construction ground

disturbance would also increase, which would expand the impact acreages for biological resources. Cultural resources would be exposed to greater impacts due to the expanded disturbance areas. Permanent impacts may also increase in the categories of aesthetics and biological resources, in the event that full site rehabilitation is not possible in all locations of expanded earthwork. Alternative 2 would also increase risks of localized landslide hazards, due to increased grading in hillside areas. While Alternative 2 would eliminate a potentially significant and unavoidable impact, this impact would only occur for about two months throughout the proposed project's construction period. Elimination of this impact would be replaced with increased construction duration and associated nuisances to neighboring communities, increased temporary (and potentially permanent) impacts to biological resources, and increased risk of geotechnical hazards and disturbances to cultural resources. While Alternative 2 is considered the environmentally superior alternative since it would eliminate a potentially significant and unavoidable impact, it would be associated with increased impacts in most other categories.

Table 5-3. Comparison of Impacts

Impact Area	Proposed Project	Alternative 1	Alternative 2
Aesthetics	LTS	LTS	LTS
Air Quality	SU	SU	LTSM
Biological Resources	LTSM	LTSM	LTSM
Cultural Resources	LTSM	LTSM	LTSM
Geology and Soils	LTSM	LTSM	LTSM
Greenhouse Gas Emissions	LTS	LTS	LTS
Noise	LTSM	LTSM	LTSM
Transportation and Traffic	LTS	LTS	LTSM
Tribal Cultural Resources	LTSM	LTSM	LTSM
Energy	LTS	LTS	LTS

5.4 References

Nexans. 2019. "Superconducting Cable Systems." Nexans Webpage. Accessed February 11, 2019. http://www.nexans.de/eservice/Germany-en/navigate_299960/Superconducting_Cable_Systems.html.

6 OTHER CEQA REQUIREMENTS

6.1 Effects Found Not to Be Significant

Section 15128 of the CEQA guidelines requires that an EIR briefly describe potential environmental effects that were determined not to be significant and therefore were not discussed in detail in the EIR. As stated in the CEQA Guidelines, such a statement may be contained in an attached copy of an Initial Study. The Initial Study for the proposed project is included in this EIR as Appendix A. As described and substantiated in Appendix A, it was found that the proposed project would have no impact, less than significant impacts, or less than significant impacts with mitigation incorporated relative to the following environmental issue areas. For these issue areas, the analysis in the Initial Study concluded that no further detailed analysis is required in the EIR.

- Agriculture and Forestry Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

6.2 Significant Unavoidable Adverse Impacts

This section is prepared in accordance with Section 15126.2(b) of the CEQA Guidelines, which requires the discussion of any significant environmental effects that cannot be avoided if a project is implemented. These include impacts that can be mitigated, but cannot be reduced to a less than significant level. An analysis of environmental impacts caused by the proposed project has been conducted and is contained in this EIR. Ten issue areas were analyzed in detail in Chapter 3.0. According to the environmental impact analysis presented in Chapter 3.0, the proposed project would result in significant unavoidable adverse impact during construction in the category of air quality.

6.3 Significant Irreversible Environmental Changes

Section 15126.2(c) of the CEQA Guidelines requires that an EIR analyze the extent to which the proposed project's primary and secondary effects would impact the environment and commit nonrenewable resources to uses that future generations will not be able to reverse. Construction of the proposed project would result in the use of nonrenewable resources, including fossil fuels, natural gas, water, and building materials, such as concrete. However, the proposed project involves the installation of a replacement transmission line and associated infrastructure and does not represent an uncommon construction project that would use an extraordinary amount of raw material in comparison

to other development projects of similar scope and magnitude. As such, the proposed project is not anticipated to consume substantial amounts of energy or use other resources in a wasteful manner. Although the proposed project would result in the consumption of nonrenewable resources, the impact would not be considered significant. See also Section 3.10 of this EIR, which discusses the proposed project's energy consumption in greater detail.

Because the proposed project is a transmission line, it would convey electricity for eventual consumption. While the project involves replacing an existing transmission line that is already conveying electricity, it would increase the voltage of the line, allowing for additional electricity conveyance, relative to existing conditions. However, as explained in Sections 2.4 and 2.5 of this EIR, the purpose of the project is to alleviate constraints for transferring renewable energy supplies from the Tehachapi Mountains and Mojave Desert areas to the highly populated Los Angeles basin. The project would ensure that renewable energy supplies can be successfully, safely, and reliably delivered to the City of Los Angeles. As such, the proposed project is important for ongoing efforts to increase the percent of renewable energy in the City's energy portfolio. As such, while the capacity of the line is increasing, that increase would support use of renewable energy, thereby contributing to local and statewide efforts to reduce reliable on nonrenewable resources.

6.4 Growth-Inducing Impacts

According to Section 15126.2(d) of the CEQA Guidelines, growth-inducing impacts of the proposed project shall be discussed in the EIR. Growth-inducing impacts are those effects of the proposed project that might foster economic or population growth or the construction of new housing, either directly or indirectly, in the surrounding environment. According to CEQA, increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

The proposed project would not include construction or operation of any new residential or commercial land uses and, therefore, would not result in a direct population increase from construction of new homes or businesses. During the proposed construction activities, construction personnel would be required. The need for these workers would be accommodated within the existing and future labor market in the City of Los Angeles, City of Santa Clarita, and the nearby Los Angeles metropolitan area. When the new transmission line is operational, the proposed project would be unmanned, requiring only periodic maintenance, and would therefore not require permanent employees for operation. As such, implementation of the proposed project would not result in a direct increase in the permanent population of the area due to increases in employment opportunities.

The proposed project would involve replacement of an existing transmission line within an existing transmission corridor, equipment upgrades within an existing electrical switching station, and switching station tie-ins. The project would not extend electrical service to areas that are not currently served. Rather, the project would replace and upgrade an existing line that has been in place since the early 1900s. While the portion proposed for replacement would increase in voltage relative to existing conditions, the increased transfer capacity is required to accommodate the increasing renewable power sources that are being developed to the north of Haskell Canyon Switching Station. Although the system upgrades included in the proposed project would accommodate increased loads in the South

of Haskell Corridor, which could accommodate additional development and population in the area served, growth in the study area is planned and regulated by applicable local planning and zoning ordinances. The proposed project would result in no change in zoning or land use in the project area. Furthermore, the proposed project is being undertaken in part to reduce GHG emissions and to increase LADWP's renewable energy portfolio. In order to achieve this, the proposed project would need to displace existing non-renewable electricity sources. As such, the proposed project is not anticipated to have a material effect on the amount of electricity available in the service area. Rather, the project would allow for additional renewable energy supplies to be delivered to the Los Angeles basin. The proposed project supports ongoing efforts to increase the percentage of renewable energy that is used in the City, as opposed to augmenting supplies for the purposes of population growth. The proposed project would not induce population growth beyond that which is already anticipated and allowable under existing, adopted plans and land use regulations. Accordingly, the proposed project would not indirectly induce population growth and would not have significant growth-inducing effects.

INTENTIONALLY LEFT BLANK

7 REPORT PREPARERS

Lead Agency

Los Angeles Department of Water and Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, California 90012

Charles C. Holloway, Manager of Environmental Planning and Assessment
Nadia Parker, Environmental Supervisor
Kathryn Laudeman, Environmental Project Manager

Technical Assistance Provided By

Dudek
38 North Marengo Avenue
Pasadena, California 91101

Contributors

Eric Wilson, Project Manager
Michele Webb, Deputy Project Manager
Sabrina Alonso, Environmental Analyst
Joshua Saunders, AICP, Environmental Planner
Rica Nitka, Environmental Planner
Nicholas Lorenzen, Air Quality Specialist
Samantha Wang, Air Quality Specialist
Brock Ortega, Biological Senior Manager
Johanna Page, Senior Biologist
Randall McInvale, Senior Biologist
Britney Strittmater, Senior Biologist
Callie Amoaku, Senior Biologist
Tracy Park, Biologist
Russell Sweet, Biologist
Heather Moine, Biologist
Samantha Murray, MA, RPA, Senior Cultural Resources Specialist/Architectural Historian
Sarah Corder, MFA, Senior Architectural Historian
Elizabeth Denniston, MA, RPA, Senior Archaeologist
Brad Comeau, MSc, RPA, Senior Archaeologist
Linda Kry, Archaeologist

Erica Nicolay, MA, Archaeologist
Adriane Dorrler, Archaeologist
Andrea Vaghn, Archaeologist
Perry Russell, Certified Engineering Geologist (#1837)
Mike Green, INCE, Senior Noise Specialist
Dennis Pascua, Transportation Services Manager
Amanda Meroux, EIT, Transportation Analyst
Tyler Friesen, GIS Specialist
Kara Warner, Ph.D., Environmental Scientist/Electric and Magnetic Field Specialist (Golder Associates Inc.)
Kara Murphy, Publications Specialist