CALIFORNIA PUBLIC UTILITIES COMMISSION

SOUTHERN CALIFORNIA EDISON's CAL CITY SUBSTATION 115 kV UPGRADE PROJECT

Environmental Impact Report

February 2026



A.23-03-005

State Clearinghouse No. 2023110218

Prepared for:
California Public Utilities Commission

Prepared by:
Environmental Science Associates

ESA

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H. Geology Technical Report
I. Radius Search List
J. Noise
K. Tribal Consultation
L. SCE Wildfire Plans
M. Routing Report
N. Mitigation Monitoring, Compliance, and Reporting Program

Acronyms and Other Abbreviations

°F	degrees Fahrenheit
2017 Scoping Plan Update	2017 *Climate Change Scoping Plan Update*
2022 Scoping Plan	2022 *Scoping Plan for Achieving Carbon Neutrality*
A-1	Limited Agriculture zoning (Kern County)
AB	Assembly Bill
AC	alternating current
ACEC	Area of Critical Environmental Concern
ACSR	Aluminum Core Steel Reinforced
ADA	Americans with Disabilities Act
ADSS	all-dielectric self-supporting
AERMOD	American Meteorological Society/USEPA's Regulatory Model
AFN	access and functional needs
afy	acre-feet per year
ALUCP	Airport Land Use Compatibility Plan
amsl	above mean sea level
APCD	air pollution control district
APE	Area of Potential Effects
API	Area of Potential Impacts
APLIC	Avian Power Line Interaction Committee
APM	Applicant proposed measure
ATSF BNSF	Atchison, Topeka and Santa Fe Burlington Northern Santa Fe
AVEK	Antelope Valley East Kern Valley Water Agency
AVGB	Antelope Valley Groundwater Basin
Basin Plan	Water Quality Control Plan for the Lahontan Basin
BESS	battery energy storage system
BLM	U.S. Bureau of Land Management
BMP	best management practice
BNSF	Burlington Northern Santa Fe
C-2	Community Commercial zoning (California City)
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CAISO	California Independent System Operator

CAL FIRE	California Department of Forestry and Fire Protection
CAL OES	Governor's Office of Emergency Services
Cal/OSHA	California Division of Occupational Safety and Health
CalEPA	California Environmental Protection Agency
CalGEM	California Geologic Energy Management Division
California Register	California Register of Historical Resources
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCF	Central Coordinating Facility
CCFD	California City Fire Department
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CDOF	California Department of Finance
CDPH	California Department of Public Health
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHP	California Highway Patrol
City	City of California City
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	*carbon dioxide*
COG	*council of governments*
Construction General Permit	*National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*
CP	Cultural Resources Preservation (San Bernardino County Code of Ordinances)

CPUC	California Public Utilities Commission
CR	Rural Commercial zoning (San Bernardino County)
CRHR	California Register of Historical Resources
CRMP	cultural resource management plan
CRPR	California Rare Plant Rank
CSD	community services district
CWA	Clean Water Act
cy	cubic yards
D.	California Public Utilities Commission Decision
dB	decibels
dBA	A-weighted decibels
DFA	Development Focus Area
DOC	California Department of Conservation
DoD	U.S. Department of Defense
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DRC	Development Review Committee
DRECP	Desert Renewable Energy Conservation Plan
DSM	demand-side management
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EAFB	Edwards Air Force Base
EDD	California Employment Development Department
EIR	environmental impact report
EJ	environmental justice
EKAPCD	Eastern Kern Air Pollution Control District
EMF	electric and magnetic field
EMFAC	Emission Factor
EMS	emergency medical services
ENA	Electrical Needs Area
EPRI	Electric Power Research Institute
ER	Ecological Reserve
ERP	Environmental Site Restoration Program
ESA	Environmental Science Associates
ESA	Environmentally Sensitive Area

FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHSZ	fire hazard severity zone
FLPMA	Federal Land Policy and Management Act
FMMP	California Farmland Mapping and Monitoring Program
Fourth Assessment	*Fourth California Climate Change Assessment*
FRA	Federal Responsibility Area
FRED	Field Reporting Environmental Database
FVGB	Fremont Valley Groundwater Sub-basin
GHG	greenhouse gas
GO 131-D	General Order 131-D
GSP	groundwater sustainability plan
GWh	gigawatt-hours
GWP	global warming potential
HBMP	hazardous materials business plan
HCP	habitat conservation plan
HFC	hydrofluorocarbon
HFTD	High Fire Threat District
HMMP	habitat mitigation and management plan
hp	horsepower
HRP	habitat restoration plan
Hz	hertz
IEEE	Institute of Electrical and Electronics Engineers
in/sec	Inches per second
INRMP	Integrated Natural Resources Management Plan
IPCC	Intergovernmental Panel on Climate Change
IPMP	invasive plant management plan
ITP	incidental take permit
Kern COG	Kern Council of Governments
KOP	key observation point
kV	kilovolt(s)
kWh	kilowatt-hours
LACSD	Los Angeles County Sanitation District
L_{dn}	the energy average of the A-weighted sound levels that occur during a 24-hour period

L_{eq}	equivalent sound level (the average noise exposure level for a given time period)
L_{max}	the instantaneous maximum noise level measured during a period of interest
LRA	Local Responsibility Area
LST	lattice steel tower
LUPA	Land Use Plan Amendment
LUST	leaking underground storage tank
LWS	lightweight steel
M-3	Heavy Industrial zoning (Kern County)
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MEER	mechanical electrical equipment room
MEIR	Maximally Exposed Individual Receptor
mgd	million gallons per day
MGS	Mohave ground squirrel
mpg	miles per gallon
MPO	Metropolitan Planning Organization
MRDS	U.S. Geological Survey Mineral Resources Data System
MRZ	Mineral Resource Zone
MSDS	Material Safety Data Sheet
$MTCO_2e$	metric tons of carbon dioxide equivalent
MVA	megavolt-ampere
MVAR	megavolt-ampere reactive
MW	megawatts
MWA	Mojave Water Agency
MWh	megawatt-hours
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NBMP	Nesting Bird Management Plan
NCCP	natural community conservation plan
NCCPA	California Natural Community Conservation Planning Act

NEHRP	National Earthquake Hazards Reduction Program
NEMA	National Electrical Manufacturer Association
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NISC	National Invasive Species Council
NO	nitric oxide
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O/RA	Open Space and Residential Agriculture zoning (California City)
O&M	operation and maintenance
OAG	Office of the California Attorney General
OES	California Office of Emergency Services
OHV	off-highway vehicle
OPGW	optical ground wire
OPLA	Omnibus Public Lands Act
OPR	Governor's Office of Planning and Research (now Governor's Office of Land Use and Climate Innovation)
OU	Operable Unit
PEA	Proponent's Environmental Assessment
PFC	perfluorocarbon
PM	particulate matter
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
ppb	parts per billion
PPE	personal protective equipment
PPV	peak particle velocity
PRMMP	Paleontological Resources Mitigation and Monitoring Plan
Project	Cal City Substation 115 kV Upgrade Project
PRP	Paleontological Resources Preservation
PRTR	paleontological resources technical report
PVC	polyvinyl chloride

R.	California Public Utilities Commission Rulemaking
RACT	Reasonably Available Control Technology
RC	Resource Conservation zoning (San Bernardino County)
RCNM	Roadway Noise Construction Model
RHNA	Regional Housing Needs Allocation
Rincon	Rincon Consultants, Inc.
RL	Rural Living zoning (San Bernardino County)
RMP	Raven Management Plan
RMS	root mean square
ROG	reactive organic gases
ROW	right-of-way
ROWD	report of waste discharge
RPS	Renewables Portfolio Standard
RV	recreational vehicle
RWQCB	regional water quality control board
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SED	Safety and Enforcement Division
SEMS	California Standardized Emergency Management System
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SR	State Route
SRA	State Recreational Area
SRA	State Responsibility Area
SRMA	Special Recreation Management Area
State Water Board	State Water Resources Control Board
study area	biological study area
SVP	Society of Vertebrate Paleontology
SWP	State Water Project

SWP Contract	State Water Project water service contract
SWPPP	storm water pollution prevention plan
TAC	toxic air contaminant
TCE	temporary construction easement
TDS	total dissolved solids
TEP	temporary entry permit
TSP	tubular steel pole
TUP	temporary use permit
U.S. 395	U.S. Highway 395
UPRR	Union Pacific Railroad
USA/SC	Underground Service Alert of Southern California
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UXO	unexploded ordnance
VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
VRM	visual resource management
WDR	waste discharge requirement
WEAP	Workers' Environmental Awareness Training Program
WMP	Waste Management Plan
WRP	Water Reclamation Plant
ZEV	zero-emissions vehicle

EXECUTIVE SUMMARY

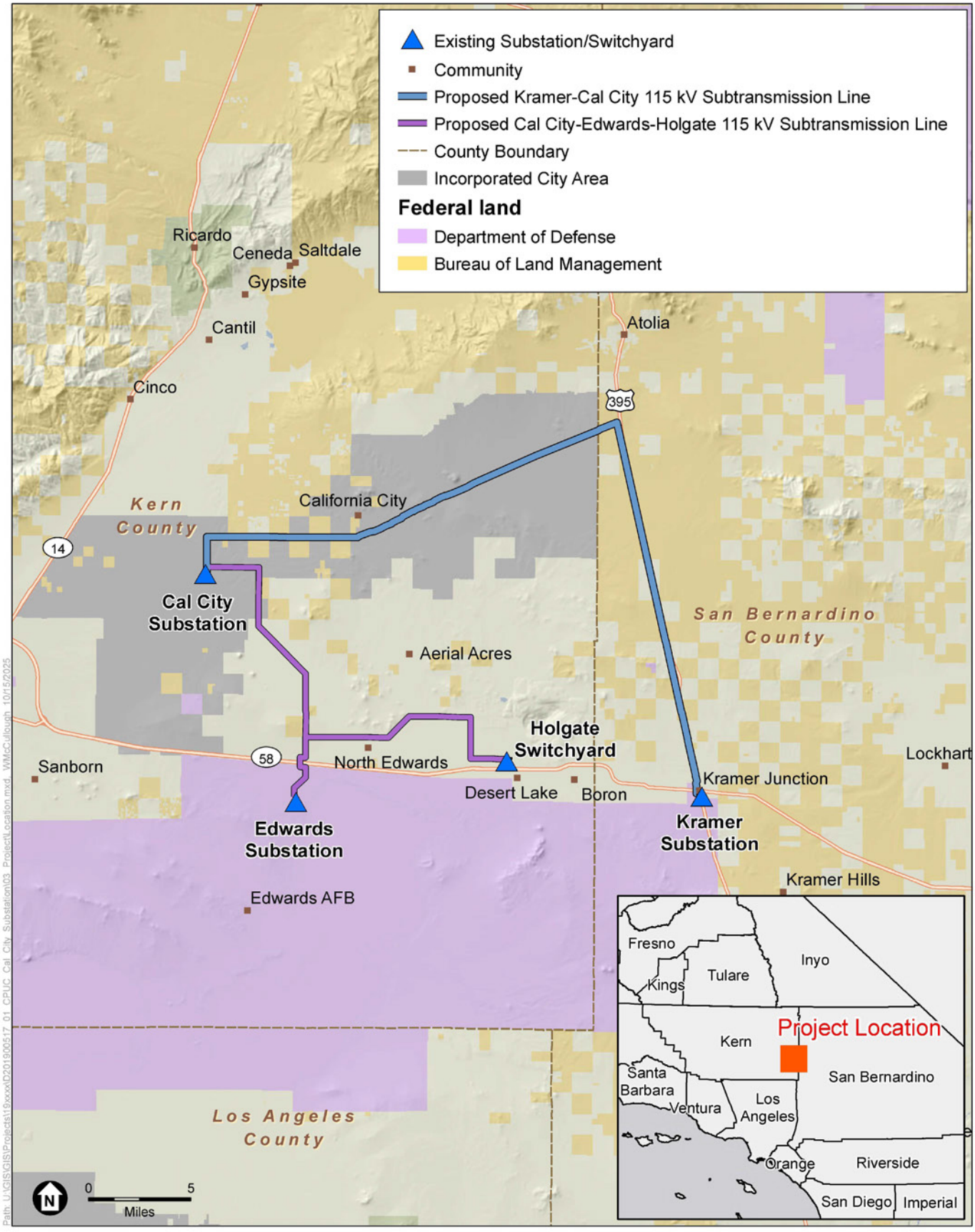
ES.1 Introduction

Southern California Edison Company (SCE), in its application (A.23-03-005) filed with the California Public Utilities Commission (CPUC) on March 14, 2023, requests a permit to construct (PTC) the Cal City Substation 115 kV Upgrade Project (Project). Pursuant to General Order (GO) 131-D and Rule 2.4 of CPUC's Rules of Practice and Procedure, governing compliance with the California Environmental Quality Act (CEQA) the application included a Proponents Environmental Assessment (PEA) (SCE 2023).

The Project would add load serving capacity in the identified electrical needs area (ENA) to serve current and long-term forecasted electrical demand. The Project is anticipated to improve regional system operational flexibility for SCE to provide power to the needs area adjacent to Edwards Air Force Base (EAFB) by minimizing reliance on the Edwards Substation. By providing diverse routes of power supplies to the region including a second source line to Edwards Substation, the Project is anticipated to improve overall system reliability in the ENA.

The Project would be located on federal, state, private, and municipal property in unincorporated Kern and San Bernardino counties, the City of California City, on EAFB, and on lands managed by the Bureau of Land Management (BLM) in the Mojave Desert region of California (see **Figure ES-1**, *Project Overview*).

The Project would include an expansion of the existing SCE Cal City Substation to accommodate upgrades to transformers from 33/12 kilovolt (kV) to 115/33 kV along with other infrastructure and the associated installation of electrical equipment. Two new 115 kV subtransmission lines would be constructed and operated. The proposed Kramer–Cal City Subtransmission line would extend 42 miles from Kramer Junction to the Cal City Substation; the Cal City–Edwards-Holgate subtransmission line would extend 28 miles from Cal City Substation to the Holgate Switchyard. The proposed Cal City– Edwards-Holgate subtransmission line would also include a tap line to serve Edwards Substation on the north side of EAFB. Fourteen new underground distribution getaways and two new underground 33 kV distribution getaways from Cal City Substation are also proposed along with the installation of telecommunication cable on both new 115 kV subtransmission lines. Telecommunication improvements are also proposed at the existing Holgate Switchyard, and Cal City, Kramer, and Edwards substations.



SOURCE: ESA 2023; SCE 2023b

Cal City Substation 115 kV Upgrade Project

Figure ES-1
Project Overview

ES.2 Purpose and Use of the Draft EIR

CEQA Guidelines Section 15124(d) requires that an EIR contains a statement briefly describing the intended uses of the EIR. This Draft EIR is an informational document that examines and discloses the potential impacts of the Project and alternatives so that decision-makers and the public can consider the potential environmental consequences of a decision on the requested PTC. The CPUC will rely on this EIR, along with other information in the formal record, in deciding whether to approve, approve with modifications, or deny the request for a PTC. Agencies that have trustee responsibilities or that may have permitting authority over the Project area identified in Section ES.4, *Permits and Approvals*. These other agencies also may rely on this document in deciding whether to approve permits or issue other approvals for the Project.

ES.3 Project Objectives

In its permit to construct (PTC) application (SCE 2023), SCE has identified the following objectives for the Project:

- Add load serving capacity in the ENA to serve current and long-term forecasted demand.
- Improve system reliability within the ENA by providing diverse routes of power supply to the region.
- Improve system operational flexibility by minimizing reliance on Edwards Substation (located on the military base with restricted access) to provide power to the ENA (adjacent to the military base).
- Improve system reliability within the ENA by providing a diversely routed second source line to Edwards Substation.

For the purposes of this CEQA analysis, the CPUC has determined that SCE's objectives described above are adequate to serve as the EIR Project Objectives.

ES.4 Permits and Approvals

Permits and approvals that could be required to construct, operate, and maintain the Project are listed in **Table ES-1**, *Anticipated Permits and Approvals*.

ES.5 Overview of Project Impacts

ES.5.1 Significant and Unavoidable Impacts

Section 15126.2(a) of the CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. As analyzed in Chapter 3, *Environmental Analysis,* the Project would result in significant unavoidable impacts associated with aesthetics, recreation, noise, and tribal cultural resources. These impacts would remain significant and unavoidable even with implementation of applicant proposed measures and mitigation measures.

TABLE ES-1
ANTICIPATED PERMITS AND APPROVALS

Agency	Permit	Trigger	Application Process	Timing
U.S. Bureau of Land Management	Right-of-way grant	Use of federal lands managed by BLM for a transmission line, typically constituting a major federal action, which triggers NEPA	Arrange a pre-application meeting with a BLM Realty Specialist or appropriate staff member. Submit completed application to the appropriate BLM office. In the case of the Project, an EA is being prepared.	An EA typically takes 9 to 12 months; NEPA process may occur concurrently with CEQA process.
U.S. Fish and Wildlife Service	Programmatic Biological Opinion (BO)	Potential impact on a federally listed threatened or endangered species	Activity Request Form prepared and submitted to BLM; results of desert tortoise protocol surveys will be appended to the Activity Request Form.	The USFWS Division Chief will respond within 30 days; BLM will not authorize or implement such projects until it receives notification from USFWS.
U.S. Department of Defense, Edwards Air Force Base	Easement Acquisition	Federal lands under the jurisdiction of DoD; NEPA process	Submit AF813 and Easement Acquisition request for Environmental Impact Analysis. An Environmental Baseline Survey may be required for an easement and NEPA document.	Dependent on the level of NEPA review: typically, 9 to 12 months for a NEPA EA.
U.S. Bureau of Land Management and California State Historic Preservation Office	National Historic Preservation Act Section 106 Consultation	If project includes a Federal Undertaking (BLM right-of-way grant and DoD easement acquisition permit processes)	Notify appropriate consulting parties; Identify properties that may be affected by project and determine if they are eligible or listed as historic in the National Register of Historic Places; assess effects on the resources in consultation with interested parties.	Public views and concerns about historic preservation issues to be considered when making final project decisions.
California Public Utilities Commission	Permit to Construct	When an investor-owned utility seeks a Permit to Construct under CPUC Rule 2.4	Investor-owned utilities submit PTC application to the CPUC for review and approval.	Review process initiated when IOU files PTC application.
California Department of Fish and Wildlife	Sections 1600–1617 Lake and Streambed Alteration Agreement	Required if a project will (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.	Requires a description of proposed activities within CDFW jurisdictional features, grading and earthmoving quantities, anticipated restoration, and avoidance and minimization measures to be implemented.	4 to 6 months from time the application is deemed complete.
California Department of Fish and Wildlife	California Fish and Game Code Section 2080.1 Consistency Determination	Required if the project may result in take of species that is both federally and state listed (e.g., desert tortoise)	Applicant requests CDFW review of USFWS BO to determine whether BO-listed conservation measures also meet state policies for the protection of state-listed species.	CDFW has 30 days from receipt of the request to review the USFWS BO and issue a consistency determination.

Agency	Permit	Trigger	Application Process	Timing
California Department of Fish and Wildlife	California Fish and Game Code Section 2081 Take Permit	Required if the project may result in take of a state-only listed endangered or threatened species (e.g., Mohave ground squirrel, western Joshua tree)	Submit application to CDFW and identify mitigation measures to reduce, avoid, and minimize the potential for take of listed species.	30 to 90 days, depending on the species involved and the project's complexity.
State Water Resources Control Board/Regional Water Quality Control Board	Section 402 National Pollutant Discharge Elimination System Construction General Permit coverage	Project that involves 1 acre or more of land disturbance during construction activities	Proponent files Notice of Intent; develops and implements a stormwater pollution prevention program, including water quality monitoring.	1 week following issuance of waste discharger identification number.
State Water Resources Control Board/Regional Water Quality Control Board	Waste Discharge Requirements	Dredge and fill activities in non-federal wetlands and waterways	WDR application requires information similar to that required for the LSAA. At the request of the RWQCB, a restoration plan may be required.	May occur concurrently with preparation of the LSAA application. Issuance takes 3 to 6 months from the time the application is deemed complete.
California Department of Transportation	Encroachment Permit	Construction, operation, and maintenance within, under, or over state highway (State Route 58) right-of-way	SCE to submit Encroachment Permit application to California Department of Transportation; California Department of Transportation to provide Encroachment Permit.	Application submitted and approval granted prior to commencement of applicable construction activities.
City of California City, Kern County, San Bernardino County	Local Roadway Encroachment Permit	Construction, operation, and maintenance within, under, or over local road right-of-way	SCE to submit Roadway Encroachment Permit application to the applicable local agency to receive the Roadway Encroachment Permit(s).	Application submitted and approval granted prior to commencement of applicable construction activities.
City of California City Building Department	Commercial Grading Permit	Industrial/commercial grading that affects soil erosion and dust	SCE to submit Commercial Grading Permit application to the Building Department to receive the Commercial Grading Permit.	Application submitted and approval granted prior to commencement of applicable construction activities.

NOTES: BLM = U.S. Bureau of Land Management; USFWS = U.S. Fish and Wildlife Service; CEQA = California Environmental Quality Act; NEPA = National Environmental Policy Act; DoD EAFB = U.S. Department of Defense, Edwards Air Force Base; CPUC = California Public Utilities Commission; CDFW = California Department of Fish and Wildlife; SWRCB = State Water Resources Control Board; RWQCB = Regional Water Quality Control Board; Caltrans = California Department of Transportation; EA = Environmental Assessment; WDR = Waste Discharge Requirements; LSAA = Lake and Streambed Alteration Agreement.

ES.5.2 Significant Irreversible Environmental Changes

CEQA's requirement to analyze irretrievable commitments of resources applies only to: (1) the adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency; (2) a local agency formation commission's adoption of a resolution making determinations; and (3) projects that require the preparation of an environmental impact statement under the National Environmental Policy Act of 1969 (Public Resources Code Section 21100.1; CEQA Guidelines Section 15127). Such analysis is not required by CEQA for the Project.

ES.5.3 Growth-Inducing Impacts

Section 15126.2(e) of the CEQA Guidelines requires a discussion of the ways in which a project "could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas)." Project-induced population increases could tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

Growth inducement can be a result of new development that increases employment levels, removes barriers to development, or provides resources that lead to secondary growth. Throughout the Project's 24-month construction period, there would be up to 140 construction workers on-site, but the average number of construction workers would be lower. It is expected that all temporary positions would be filled from the local labor pool available in Kern and San Bernardino counties, with workers expected to commute to the site rather than move. However, some construction personnel may need temporary accommodations. An adequate supply of hotels and motels are in the Project area that could be used by the out-of-town personnel. Therefore, no growth in housing needed for construction workers would occur. Regarding Project operation and maintenance, minimal staffing would be required that would be handled by current SCE employees. Therefore, no new permanent jobs would be created. Overall, employment generated by the Project would not have a significant impact on population growth or new housing because any short-term housing demand created during construction could be accommodated by existing units, and no long-term growth would result from Project operation and maintenance.

The Project could have an indirect impact on population growth if it would generate growth or a concentration of people beyond what is assumed in local and regional land use plans or projections made by regional planning authorities. Adding infrastructure to an area can result in the unplanned indirect growth of population and housing. With a more reliable California Independent System Operator-controlled grid, the Project could potentially result in regional growth that exceeds local and regional land use plan predictions. However, it is uncommon for an area to experience population growth simply as a result of a more reliable electrical grid. The Project is designed to increase system reliability and operational flexibility, rather than to induce unplanned growth.

ES.5.4 Summary of Project Impacts and Mitigation Measures

As analyzed in Chapter 3, the Project would cause no impact to any of the areas identified in **Table ES-2**, *Areas of No Impact.*

TABLE ES-2
AREAS OF NO IMPACT

Resource Area	CEQA Guidelines Appendix G Environmental Checklist Consideration
Aesthetics	• The Project would not have a substantial adverse effect on a scenic vista.
Agriculture and Forestry Resources	• The Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. • The Project would not conflict with existing zoning for agricultural use, or conflict with a Williamson Act contract. • The Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. • The Project would not result in the loss of forest land or conversion of forest land to non-forest use. • The Project would not involve any changes in the existing environment that could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.
Biological Resources	• The Project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.
Cultural Resources	• The Project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines.
Energy	• The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. • The Project would not add capacity for the purpose of serving a nonrenewable energy resource.
Geology, Soils, and Paleontological Resources	• The Project would cause no impact involving rupture of a known earthquake fault. • There would be no landslide or slope instability impacts. • The Project would have no impact related to the use of septic tanks or alternative wastewater disposal systems.
Hazards and Hazardous Materials	• The Project would not result in a safety hazard relative to a public airport
Land Use and Planning	• The Project would not physically divide an established community. • The Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
Mineral Resources	• The Project would not result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state. • The Project would not result in the loss of availability of a locally important mineral resources recovery site.
Noise and Vibration	• Project would not expose people residing or working in the Project area to excessive airstrip or airport noise levels.
Population and Housing	• The Project would not displace people or housing that would require replacement housing elsewhere.
Public Services	• The Project would not require the construction of new or altered governmental facilities associated with fire protection, police protection, schools, parks, or other public facilities.
Recreation	• The Project would not include recreational facilities or require the construction or expansion of recreational facilities.
Transportation	• The Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system.

NOTES: PRC = public resources code; HCP = habitat conservation plan; NCCP = natural community conservation plan; CEQA = California Environmental Quality Act

In its Proponent's Environmental Assessment (PEA), SCE identified various Applicant proposed measures (APMs) and Best Management Practices (BMPs) intended to reduce or avoid potential impacts associated with the Project. In this Draft EIR, those APMs and BMPs have in some cases been superseded by mitigation measures. The APMs and BMPs that have not been superseded by mitigation measures are considered part of the Project for the purposes of this Draft EIR, and upon adoption of the Final EIR would become part of the Mitigation Monitoring Compliance and Reporting Program (MMCRP) for the Project so that such measures along with the required mitigation measures would be implemented and compliance would be appropriately monitored and enforced by the CPUC.

Based on the analysis documented in this Draft EIR, the implementation of SCE's APMs and BMPs, mitigation measures as recommended in the EIR would be implemented for the following resource areas to reduce potentially significant impacts of the Project to less than significant levels. For some of these resource areas (as shown in Table ES-3), even with the implementation of mitigation measures, impacts would remain significant and unavoidable.

- Aesthetics
- Biological Resources
- Geology, Soils, and Paleontological Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

The mitigation measures either supplement or supersede the APMs and BMPs proposed by the Applicant. Upon adoption of the Final EIR and approval of the Project, the recommended mitigation measures would become part of the Project's MMCRP.

Table ES-3, *Summary of Impacts and Mitigation Measures*, lists the environmental impacts of the Project and identifies mitigation measures that, if adopted, would avoid or substantially reduce potential significant impacts of the Project, as well as applicable APMs and BMPs for each environmental impact. The analyses of each Project impact and any associated cumulative impacts are provided on a resource-by-resource basis in Chapter 3 of this Draft EIR. The draft MMCRP included as Appendix N of this Draft EIR will be updated if needed to reflect the CPUC's final decision on the Project, including any revisions to the mitigation measures that must be implemented if the Project is approved.

TABLE ES-3
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Applicant-proposed measures and/or Best Management Practices	CEQA Mitigation Measures	Significance with Measures Implemented
Aesthetics			
Impact 3.1-1: The Project would not substantially damage scenic resources within a state scenic highway.	None proposed.	None required.	LTS
Impact 3.1-2a: Project construction would degrade the existing visual character or quality of public views of the site and its surroundings in non-urbanized areas.	BMP WE-1: Wind Erosion Control	None required.	LTS
Impact 3.1-2b: Project operation in the vicinity of KOPs 1, 4, 5, and 6, and Viewpoint 7 would degrade the existing visual character or quality of public views of the sites and their surroundings in non-urbanized areas.	APM AES-1: Glare and Color Contrast Reduction for Subtransmission Structures and Conductors. APM AES-2: Substation Visual Treatment.	None required.	LTS
Impact 3.1-2c: Project operation in the vicinity of KOPs 2 and 3 and BLM-suggested KOP 3 would substantially degrade the existing visual character or quality of public views of the sites and their surroundings in non-urbanized areas.	APM AES-1: Glare and Color Contrast Reduction for Subtransmission Structures and Conductors.	Mitigation Measure 3.1-2c: Treat Surfaces with Appropriate Colors, Finishes, and Textures.	SU
Impact 3.1-3: The Project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.	APM AES-1: Glare and Color Contrast Reduction for Subtransmission Structures and Conductors.	None required.	LTS
Air Quality			
Impact 3.3-1: The Project would not conflict with or obstruct implementation of the applicable air quality plans for EKAPCD and MDAQMD.	None proposed.	None required.	LTS
Impact 3.3-2: The Project would result in a net increase of criteria pollutants for which the project region is nonattainment under an applicable federal or state ambient air quality standard.	APM AIR-1: Tier 4 Construction Equipment. APM AIR-2: Dust Control.	None required.	LTS
Impact 3.3-3: The Project would not expose sensitive receptors to substantial pollutant concentrations.	APM AIR-1: Tier 4 Construction Equipment. APM AIR-2: Dust Control.	None required.	LTS
Impact 3.3-4: The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	None proposed.	None required.	LTS
Impact 3.3-5: Construction activities associated with the Project would expose local sensitive receptors to *Coccidioides immitis* spores.	APM AIR-2: Dust Control.	None required.	LTS

Environmental Impact	Applicant-proposed measures and/or Best Management Practices	CEQA Mitigation Measures	Significance with Measures Implemented
Biological Resources			
Impact 3.4-1: Project construction would have an adverse effect on special-status plant species.	APM BIO-GEN-1: Pre-construction Biological Clearance Surveys and Monitoring. APM ENV-GEN-1 WEAP: Worker's Environmental Awareness Training Program. APM BIO-RES-1: Develop and Implement Habitat Restoration Plan (HRP). APM BIO-RES-2: Develop Invasive Plant Management Plan. APM BIO-BOT-1: Special-status Herbaceous Plants. APM BIO-BOT-2: Special-status Perennial Plants and Other Species.	Mitigation Measure 3.4-1a: Invasive Plant Management Plan. Mitigation Measure 3.4-1b: Special-Status Herbaceous Plants Compensatory Mitigation and Restoration. Mitigation Measure 3.4-1c: Western Joshua Tree.	LSM
Impact 3.4-2: Project construction would have a substantial adverse effect on special-status wildlife species.	APM BIO-GEN-1: Pre-construction Biological Clearance Surveys and Monitoring. APM ENV-GEN-1 WEAP: Worker's Environmental Awareness Training Program. APM BIO-RES-1: Develop and Implement Habitat Restoration Plan (HRP). APM BIO-RES-2: Develop Invasive Plant Management Plan. APM BIO-HERP-1: Desert Tortoise. APM BIO-AVI-2: Nesting Bird Management Plan. APM BIO-AVI-3: Burrowing Owl. APM BIO-MAM-1: Mohave Ground Squirrel. APM BIO-MAM-2: Desert Kit Fox Preconstruction Surveys.	Mitigation Measure 3.4-1a: Invasive Plant Management Plan. Mitigation Measure 3.4-2a: Crotch's Bumble Bee. Mitigation Measure 3.4-2b: Raven Management to Protect Desert Tortoise. Mitigation Measure 3.4-2c: Nesting Bird Management Plan. Mitigation Measure 3.4-2d: Burrowing Owl. Mitigation Measure 3.4-2e: Mohave Ground Squirrel Protection. Mitigation Measure 3.4-2f: American Badger Protection.	LSM
Impact 3.4-3: Project operation would have a substantial adverse effect on special-status plant and wildlife species.	APM BIO-HERP-1: Desert Tortoise.	Mitigation Measure 3.4-3: APMs and Protection Measures Applicable during Operation and Maintenance Activities.	LSM
Impact 3.4-4: The Project could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.	APM ENV-GEN-1 WEAP: Worker's Environmental Awareness Training Program. APM BIO-RES-1: Develop and Implement Habitat Restoration Plan. APM BIO-RES-2: Develop Invasive Plant Management Plan.	Mitigation Measure 3.4-1b: Special-Status Herbaceous Plants Compensatory Mitigation and Restoration. Mitigation Measure 3.4-3: APMs and Protection Measures Applicable during Operation and Maintenance Activities. Mitigation Measure 3.4-4: Sensitive Natural Communities.	LSM
Impact 3.4-5a: Project construction could have an adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means.	APM WET-1: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.	Mitigation Measure 3.10-1a: Erosion Control Plan.	LSM

Environmental Impact	Applicant-proposed measures and/or Best Management Practices	CEQA Mitigation Measures	Significance with Measures Implemented
Impact 3.4-5b: Project operation and maintenance could have an adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means.	None proposed.	None required.	LTS
Impact 3.4-6: Project construction and operation could interfere with the movement of migratory wildlife species or migratory wildlife corridors or impede the use of native wildlife nursery sites.	APM ENV-GEN-1: Pre-construction biological clearance surveys and monitoring. APM BIO-RES-1: Develop and Implement Habitat Restoration Plan. APM BIO-RES-2: Develop Invasive Plant Management. Plan. APM BIO-AVI-2: Nesting Bird Management Plan.	Mitigation Measure 3.4-2b: Raven Management to Protect Desert Tortoise. Mitigation Measure 3.4-2c: Nesting Bird Management Plan. Mitigation Measure 3.4-3: APMs and Protection Measures Applicable during Operation and Maintenance Activities.	LSM
Impact 3.4-7a: Project construction would conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	APM BIO-BOT-2: Special-Status Perennial Plants and Other Species.	Mitigation Measure 3.4-1b: Special-Status Herbaceous Plants Compensatory Mitigation and Restoration.	LSM
Impact 3.4-7b: Project operation would not conflict with any local policies or ordinances protecting biological resources.	None proposed.	None required.	LTS
Cultural Resources			
Impact 3.5-1: Project construction could cause an adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines.	None proposed.	None required.	LTS
Impact 3.5-2: Project construction could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines.	APM CUL-1: Develop a Cultural Resource Management Plan. APM CUL-2: Avoid Environmentally Sensitive Areas. APM CUL-3: Train Construction Personnel. APM CUL-4: Conduct Construction Monitoring.	None required.	LTS
Impact 3.5-3: The Project may disturb human remains, including those interred outside of dedicated cemeteries.	APM CUL-5: Properly Treat Human Remains.	None required.	LTS
Energy			
Impact 3.6-1: The Project would result in consumption of energy resources during Project construction or operation.	APM NOI-1: follow noise-control techniques.	None required.	LTS
Geology and Soils			
Impact 3.7-1: The Project would be subject to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading.	None proposed.	None required.	LTS
Impact 3.7-2a: Project construction would result in soil erosion or the loss of topsoil.	None proposed.	Mitigation Measure 3.10-1a: Erosion Control Plan.	LSM

Environmental Impact	Applicant-proposed measures and/or Best Management Practices	CEQA Mitigation Measures	Significance with Measures Implemented
Impact 3.7-2b: Project operation and maintenance would result in soil erosion or the loss of topsoil.	None proposed.	None required.	LTS
Impact 3.7-3: The Project could 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 subsidence or collapse.	None proposed.	None required.	LTS
Impact 3.7-4: The Project would be located on expansive soil that could create direct or indirect risks to life or property.	None proposed.	None required.	LTS
Impact 3.7-5: Construction of the Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	APM PAL-1: Develop Paleontological Resource Mitigation and Monitoring Plan. APM PAL-2: Train Construction Personnel. APM PAL-3: Conduct Paleontology Resources Construction Monitoring.	None required.	LTS
Greenhouse Gas Emissions			
Impact 3.8-1: The Project would generate greenhouse gas emissions.	APM NOI-1: follow noise-control techniques.	None required.	LTS
Impact 3.8-2: The Project could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	None proposed.	None required.	LTS
Hazards and Hazardous Materials			
Impact 3.9-1: The Project would involve the routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment.	APM HAZ-1: Hazardous Materials Business Plan. BMP WM-4: Spill Prevention and Control. BMP WM-6: Hazardous Waste Management. BMP WM-7: Contaminated Soil Management.	None required.	LTS
Impact 3.9-2: The Project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing school.	BMP WM-4: Spill Prevention and Control. BMP WM-6: Hazardous Waste Management. BMP WM-7: Contaminated Soil Management.	None required.	LTS
Impact 3.9-3: The Project would create a hazard to the public or the environment by being located on and adjacent to sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	APM HAZ-1: Hazardous Materials Business Plan. APM HAZ-2: Soil Management Plan. BMP WM-7: Contaminated Soil Management.	None required.	LTS
Impact 3.9-4: Project construction could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	APM HAZ-3: consult with the Federal Aviation Administration.	Mitigation Measure 3.17-2a: Traffic Management Plan.	LSM

Environmental Impact	Applicant-proposed measures and/or Best Management Practices	CEQA Mitigation Measures	Significance with Measures Implemented
Impact 3.9-5a: Project construction and repairs could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	None proposed.	Mitigation Measure 3.17-2a: Traffic Management Plan.	LSM
Impact 3.9-5b: Project operation and maintenance could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	None proposed.	None required.	LTS
Impact 3.9-6: The Project could create a significant hazard to air traffic from the installation of new power lines and structures.	None proposed.	Mitigation Measure 3.9-6a: EAFB Communication Plan. Mitigation Measure 3.9-6b: EAFB Obstruction Evaluation.	LSM
Impact 3.9-7: The Project could create a significant hazard to the public or environment through the transport of heavy materials using helicopters.	APM HAZ-3: consult with the Federal Aviation Administration.	Mitigation Measure 3.9-6a: EAFB Communication Plan.	LSM
Impact 3.9-8: The Project could expose people to a risk of injury or death involving unexploded ordnances.	APM HAZ-4: Worker's Environmental Awareness Training Program.	None required.	LTS
Impact 3.9-9: The Project would not expose workers or the public to excessive shock hazards.	None proposed.	None required.	LTS
Hydrology and Water Quality			
Impact 3.10-1a: Project construction could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality.	BMP WE-1: Wind Erosion Control. BMP EC-1: Scheduling. BMP EC-2: Preservation of Existing Vegetation. BMP EC-3: Hydraulic Mulch. BMP EC-4: Hydroseeding. BMP EC-5: Soil Binders. BMP EC-6: Straw Mulch. BMP EC-7: Geotextiles and Mats. BMP EC-8: Wood Mulch. BMP EC-15: Soil Preparation and Roughening. BMP EC-16: Non-Vegetative Stabilization. BMP SE-4: Check Dam. BMP SE-6: Gravel Bag Berm. BMP SE-7; Street Sweeping and Vacuuming. BMP SE-10: Storm Drain Inlet Protection. BMP TC-1: Stabilized Construction.	Mitigation Measure 3.10-1a: Erosion Control Plan.	LSM

Environmental Impact	Applicant-proposed measures and/or Best Management Practices	CEQA Mitigation Measures	Significance with Measures Implemented
	BMP TC-2: Stabilized Construction Roadway. BMP WM-3: Stockpile Management. BMP NS-9: Vehicle and Equipment Fueling. BMP WM-1: Material Delivery and Storage. BMP WM-2: Material Use. BMP WM-4: Spill Prevention and Control. BMP WM-6: Hazardous Waste Management. BMP WM-7: Contaminated Soil Management.		
Impact 3.10-1b: Project operation could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality.	None proposed.	None required.	LTS
Impact 3.10-2: The Project could decrease groundwater supplies or interfere with groundwater recharge.	None proposed.	None required.	LTS
Impact 3.10-3a: Project construction of subtransmission lines and Cal City Substation improvements would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows.	APM WET-1: Avoidance and/or Minimization of Impacts on Jurisdictional Waters, Wetlands, and Riparian Habitats.	Mitigation Measure 3.10-1a: Erosion Control Plan	LSM
Impact 3.10-3b: Project operation of subtransmission lines and Cal City Substation improvements would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows.	None proposed.	None required.	LTS
Impact 3.10-4a: The Project subtransmission lines and Cal City Substation improvements would be located in a flood hazard zone which would present a risk of release of pollutants due to inundation during flooding.	APM HAZ-2: Soil Management Plan. BMP EC-1: Scheduling. BMP EC-2: Preservation of Existing Vegetation. BMP EC-3: Hydraulic Mulch. BMP EC-4: Hydroseeding. BMP EC-5: Soil Binders. BMP EC-6: Straw Mulch. BMP EC-7: Geotextiles and Mats. BMP EC-8: Wood Mulch.	Mitigation Measure 3.10-1a: Erosion Control Plan.	LSM

Environmental Impact	Applicant-proposed measures and/or Best Management Practices	CEQA Mitigation Measures	Significance with Measures Implemented
	BMP EC-15: Soil Preparation and Roughening. BMP EC-16: Non-Vegetative Stabilization. BMP SE-4: Check Dam. BMP SE-6: Gravel Bag Berm. BMP SE-7; Street Sweeping and Vacuuming. BMP SE-10: Storm Drain Inlet Protection. BMP TC-1: Stabilized Construction. BMP TC-2: Stabilized Construction Roadway.		
Impact 3.10-4b The Holgate Switchyard located in a flood hazard zone would risk release of pollutants due to inundation during flooding.	None proposed.	None required.	LTS
Impact 3.10-5: The Project could conflict with or obstruct implementation of a water quality control plan.	APM WET-1: Avoidance and/or Minimization of Impacts on Jurisdictional Waters, Wetlands, and Riparian Habitats.	Mitigation Measure 3.10-1a: Erosion Control Plan.	LSM
Noise and Vibration			
Impact 3.13-1: Project construction activities would generate a temporary increase in ambient noise levels that would exceed the City of California City Noise Ordinance.	APM NOI-1: Noise-control techniques.	Mitigation Measure 3.13-1a: Construction Noise Reduction Plan. Mitigation Measure 3.13-1b: Construction and O&M Helicopter Flight Restrictions.	SU
Impact 3.13-2: Project construction activities would generate a temporary increase in ambient noise levels in unincorporated jurisdictions.	None proposed.	None required.	LTS
Impact 3.13-3: The Project would generate excessive groundborne vibration or groundborne noise levels.	None proposed.	None required.	LTS
Population and Housing			
Impact 3.14-1: The Project could induce unplanned population growth.	None proposed.	None required.	LTS
Recreation			
Impact 3.16-1: Project construction could increase the use of existing neighborhood and regional parks or other recreational facilities.	None proposed.	None required.	LTS
Impact 3.16-2: The Project would reduce or prevent access to designated recreation facilities and areas.	APM REC-1: coordinate recreational area closures.	None required.	LTS
Impact 3.16-3a: Project construction would alter the character of a recreational area by reducing the scenic characteristics that contribute to the value of recreational facilities or areas.	None proposed.	None required.	LTS

Environmental Impact	Applicant-proposed measures and/or Best Management Practices	CEQA Mitigation Measures	Significance with Measures Implemented
Impact 3.16-3b: Project operation would alter the character of a recreational area by reducing the scenic characteristics that contribute to the value of recreational facilities or areas.	APM AES-1: Glare and Color Contrast Reduction for Subtransmission Structures and Conductors.	Mitigation Measure 3.1-2c: Treat Surfaces with Appropriate Colors, Finishes, and Textures.	SU
Impact 3.16 4: The Project could damage recreational trails or facilities.	None proposed.	None required.	LTS
Transportation			
Impact 3.17-1: Project operation and maintenance would result in an increase in daily vehicle miles traveled.	None proposed.	None required.	LTS
Impact 3.17-2a: Project construction could substantially increase hazards due to a geometric design feature.	None proposed.	Mitigation Measure 3.17-2a: Traffic Management Plan	LSM
Impact 3.17-2b: Project operation and maintenance would not substantially increase hazards due to a geometric design feature.	None proposed.	None required.	LTS
Impact 3.17-3: Project construction could result in inadequate emergency access.	None proposed.	Mitigation Measure 3.17-2a: Traffic Management Plan.	LSM
Impact 3.17-4a: Project construction could create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations.	None proposed.	Mitigation Measure 3.17-2a: Traffic Management Plan.	LSM
Impact 3.17-4b: Project operations could create potentially hazardous conditions for people driving.	None proposed.	None required.	LTS
Impact 3.17-5: Project construction would interfere with walking or bicycling accessibility.	None proposed.	Mitigation Measure 3.17-2a: Traffic Management Plan.	LSM
Impact 3.17-6: Project construction could substantially delay public transit.	None proposed.	Mitigation Measure 3.17-2a: Traffic Management Plan.	LSM
Tribal Cultural Resources			
Impact 3.18-1: The Project would 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, or 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.	APM TCR-1: Tribal Monitoring. APM TCR-2: Tribal Engagement Plan. APM CUL-1: Develop a Cultural Resource Management Plan. APM CUL-2: Avoid Environmentally Sensitive Areas. APM CUL-3: Train Construction Personnel. APM CUL-4: Conduct Construction Monitoring. APM CUL-5: Properly Treat Human Remains.	Mitigation Measure 3.18-1: Public Interpretation Land Acknowledgement.	SU

Environmental Impact	Applicant-proposed measures and/or Best Management Practices	CEQA Mitigation Measures	Significance with Measures Implemented
Utilities and Service Systems			
Impact 3.19-1a: The Project would require construction of new, expanded stormwater drainage that could cause significant environmental effects.	None proposed.	Mitigation Measures 3.10-1a: Erosion Control Plan.	LSM
Impact 3.19-1b: The Project would require operation of new, expanded stormwater drainage; relocation/construction of new electrical and telecommunications facilities; and relocation of natural gas facilities that could cause significant environmental effects.	None proposed.	None required.	LTS
Impact 3.19-2: The Project would require water supplies.	None proposed.	None required.	LTS
Impact 3.19-3: Project construction would result in a temporary demand for wastewater treatment during construction.	None proposed.	None required.	LTS
Impact 3.19-4: The Project would generate solid waste potentially in excess of local capacities.	None proposed.	None required.	LTS
Impact 3.19-5: The Project could conflict with state and local management and reduction statutes and regulations related to solid waste.	None proposed.	None required.	LTS
Impact 3.19-6: the Project could increase the rate of corrosion of adjacent utility lines as a result of alternating current.	None proposed.	None required.	LTS
Wildfire			
Impact 3.20-1: Project construction could substantially impair an adopted emergency response plan or conflict with emergency evacuation.	None proposed.	Mitigation Measure 3.17-2a: Traffic Management Plan.	LSM
Impact 3.20-2: The Project could, due to downslope winds, or other factors, exacerbate wildfire risks, and thereby contribute to the uncontrolled spread of a wildfire.	None proposed.	None required.	LTS
Impact 3.20-3: The Project would require the installation and maintenance of access roads, subtransmission power lines, and associated infrastructure that could exacerbate fire risk or result in temporary or ongoing impacts to the environment.	None proposed.	None required.	LTS
Impact 3.20-4: The Project could expose people or structures to significant risks as a result of runoff or drainage changes.	None proposed.	Mitigation Measure 3.10-1a: Erosion Control Plan.	LSM

NOTES: APM = Applicant-proposed measure; BMP = best management practices; CEQA = California Environmental Quality Act; EKAPCD = East Kern County Air Pollution Control District; FPs = field protocols; LSM = less than significant with mitigation; LTS = less than Significant; MDAQMD = Mojave Desert Air Quality Management District; EAFB = Edwards Air Force Base; SU = significant and unavoidable.

ES.6 Overview of Alternatives to the Project

CEQA requires that an EIR analyze a reasonable range of alternatives to the project that could feasibly attain the basic objectives of the project while substantially reducing or eliminating significant environmental effects. CEQA also requires that an EIR evaluate a "no project" alternative to allow decision-makers to compare the impacts of approving a project with the impacts of not approving the project. The alternatives development and screening process, alternatives eliminated from further consideration, and alternatives considered in the EIR are described in greater detail in Chapter 4, *Alternatives*.

ES.6.1 Alternatives Eliminated from Further Consideration

Consistent with CEQA Guidelines Section 15126.6, the CPUC eliminated the potential alternatives listed below from detailed consideration in this EIR because they failed to meet the screening criteria outlined in Section 4.3, *Alternatives Development and Screening Process*:

- Alternatives to the Cal City Substation Upgrade
- 115 kV Loop Alternative
- Underground Line Alternative
- 33 kV Reconductoring Alternative
- Microgrid Alternative
- Sequoia Boulevard Alternative
- Alternative Route 2 of the Pappas Line Realignment Options
- Cal City–Edwards and Edwards–Holgate Alternative
- Randsburg Alternative
- Windhub Alternative
- Goldtown Alternative
- Kramer–Edwards Alternative
- Kramer–Edwards-Holgate Alternative
- State Route 58 Alternative Route

ES.6.2 Alternatives Considered in the EIR

The CPUC initially considered and then carried forward the following four alternatives for more detailed evaluation:

- The CEQA-required No Project Alternative is described in Section 4.6.1 of Chapter 4, *Alternatives*. It reflects existing conditions at the time the notice of preparation of this EIR was published (November 8, 2023), as well as what reasonably would be expected to occur in the foreseeable future if the Project were not approved, based on current plans and consistent with available infrastructure and community services.

- Cal City/Ivanpah–Control Collocation (Alternative 1)
- Twenty Mule Team Parkway Alternative (Alternative 2)
- Cal City/Ivanpah–Control Collocation with Twenty Mule Team Parkway Alternative (Alternative 3)

ES.6.3 Comparison of Alternatives

Table 4-15, *Summary of Impacts of the Project and Alternatives*, in Chapter 4 comparatively analyzes the impacts of the No Project, Alternative 1, Alternative 2, and Alternative 3 relative to the Project. **Table ES-4**, *Comparison of Impacts*, summarizes the comparison of impacts among the Project, Alternative 1, Alternative 2, and Alternative 3. See Table 4-15 for details.

TABLE ES-4
COMPARISON OF IMPACTS

Resource Area	Alternative 1	Alternative 2	Alternative 3
Aesthetics	Less than the Project	Less than the Project	Less than the Project
Agriculture and Forestry Resources	Same as the Project	Same as the Project	Same as the Project
Air Quality	Less than the Project	Less than the Project	Less than the Project
Biological Resources	Less than the Project	Less than the Project	Less than the Project
Cultural Resources	Less than the Project	Less than the Project	Less than the Project
Energy	Less than the Project	Less than the Project	Less than the Project
Geology, Soils, and Paleontological Resources	Less than the Project	Less than the Project	Less than the Project
Greenhouse Gas Emissions	Less than the Project	Less than the Project	Less than the Project
Hazards and Hazardous Materials	Less than the Project	Less than the Project	Less than the Project
Hydrology and Water Quality	Less than the Project	Less than the Project	Less than the Project
Land Use and Planning	Same as the Project	Same as the Project	Same as the Project
Mineral Resources	Same as the Project	Same as the Project	Same as the Project
Noise	Same as the Project	Same as the Project	Same as the Project
Population and Housing	Same as the Project	Same as the Project	Same as the Project
Public Services	Same as the Project	Same as the Project	Same as the Project
Recreation	Less than the Project	Less than the Project	Less than the Project
Transportation	Same as the Project	Less than the Project	Less than the Project
Tribal Cultural Resources	Less than the Project	Less than the Project	Less than the Project
Utilities and Service Systems	Less than the Project	Less than the Project	Less than the Project
Wildfire	Less than the Project	Less than the Project	Less than the Project
NOTE: Project = Cal City Substation 115 kV Upgrade Project.			

ES.7 Environmentally Superior Alternative

The CEQA Guidelines define the environmentally superior alternative as that alternative with the least adverse impacts on the project area and its surrounding environment. The No Project Alternative is considered the environmentally superior alternative for CEQA purposes because it would avoid all impacts of the Project. However, the No Project Alternative would fail to meet the basic objectives of the Project. Because the environmentally superior alternative is the No Project Alternative, the EIR also must identify an environmentally superior alternative from among the other alternatives that meet the basic objectives of the project.

Determining an environmentally superior alternative requires balancing many factors that must be balanced. Nonetheless, at this draft stage, Alternative 3, *Cal City/Ivanpah–Control Collocation with Twenty Mule Team Parkway Alternative*, has been determined to be preferred as the environmentally superior alternative relative to the Project, because it would avoid and/or reduce potential significant impacts of the Project on aesthetics, biological resources, geology and soils, hydrology and water quality, recreation, and tribal cultural resources. It would also generate fewer air quality and greenhouse gas emissions.

Given the reduction in length of the subtransmission line and associated smaller overall area of disturbance, as well as its avoidance of the Fremont–Kramer Area of Critical Environmental Concern, the overall impact of Alternative 3 on special-status species would be reduced relative to the Project. In addition, by incorporating a modified route relative to the Project, Alternative 3 would result in reduced severity of significant and unavoidable aesthetics and recreational resources impacts of the Project and would reduce the severity of the less-than-significant with mitigation measures impacts on biological resources.

As Alternative 3 incorporates both the Cal City/Ivanpah–Control Collocation (Alternative 1) and the Twenty Mule Team Parkway Alternative (Alternative 2), this alternative would result in the lowest potential for new raven nesting and perching sites on new subtransmission line structures. Thus, Alternative 3 would minimize the effects of raven predation on desert tortoise during the operation and maintenance phase to a greater extent than the Project or either of the other alternatives considered alone. For these reasons, Alternative 3 has been selected by the CPUC as the environmentally superior alternative.

ES.8 Areas of Controversy and Issues to be Resolved

The CPUC conducted two virtual scoping meetings for the preparation of this EIR on November 30, 2023, where the public was provided with an opportunity to submit oral and/or written comments on issues to be addressed in the EIR. As detailed in the Scoping Report (Appendix B) four individuals commented during the scoping meetings and five written comments were received during the scoping period. The main resource issues raised in written comments were related to biological and tribal cultural resources. Concerns related to economics and property values were also raised by members of the public. In its Application and Proponent's Environmental Assessment prepared for the Project, SCE noted that possible areas of controversy may include: the temporary closure of lanes on some public roads during construction activities; the potential to

affect aesthetics and biological resources; and overall compatibility and design considerations (SCE 2023).

ES.9 Issues to be Resolved

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR identify issues to be resolved, which include the choice among alternatives and whether or how to mitigate significant impacts. The following major issues are to be resolved:

- Determine whether the EIR adequately described the environmental impacts of the Project.
- Choose among alternatives.
- Determine whether the recommended mitigation measures should be adopted or modified.
- Determine whether additional mitigation measures need to be applied to the Project.
- Determine whether the significant and unavoidable impacts related to aesthetics, noise, recreational resources, and tribal cultural resources outweigh the need for the Project and, if so, prepare a statement of overriding considerations.

ES.10 References

SCE (Southern California Edison Company). 2023. Application of Southern California Edison Company for a Permit to Construct Electrical Facilities with Voltages between 50 kV and 200 kV and Proponent's Environmental Assessment for the Cal City Substation 115 kV Upgrade Project. March 14, 2023.

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CHAPTER 1
Introduction

1.1 Purpose of This Document

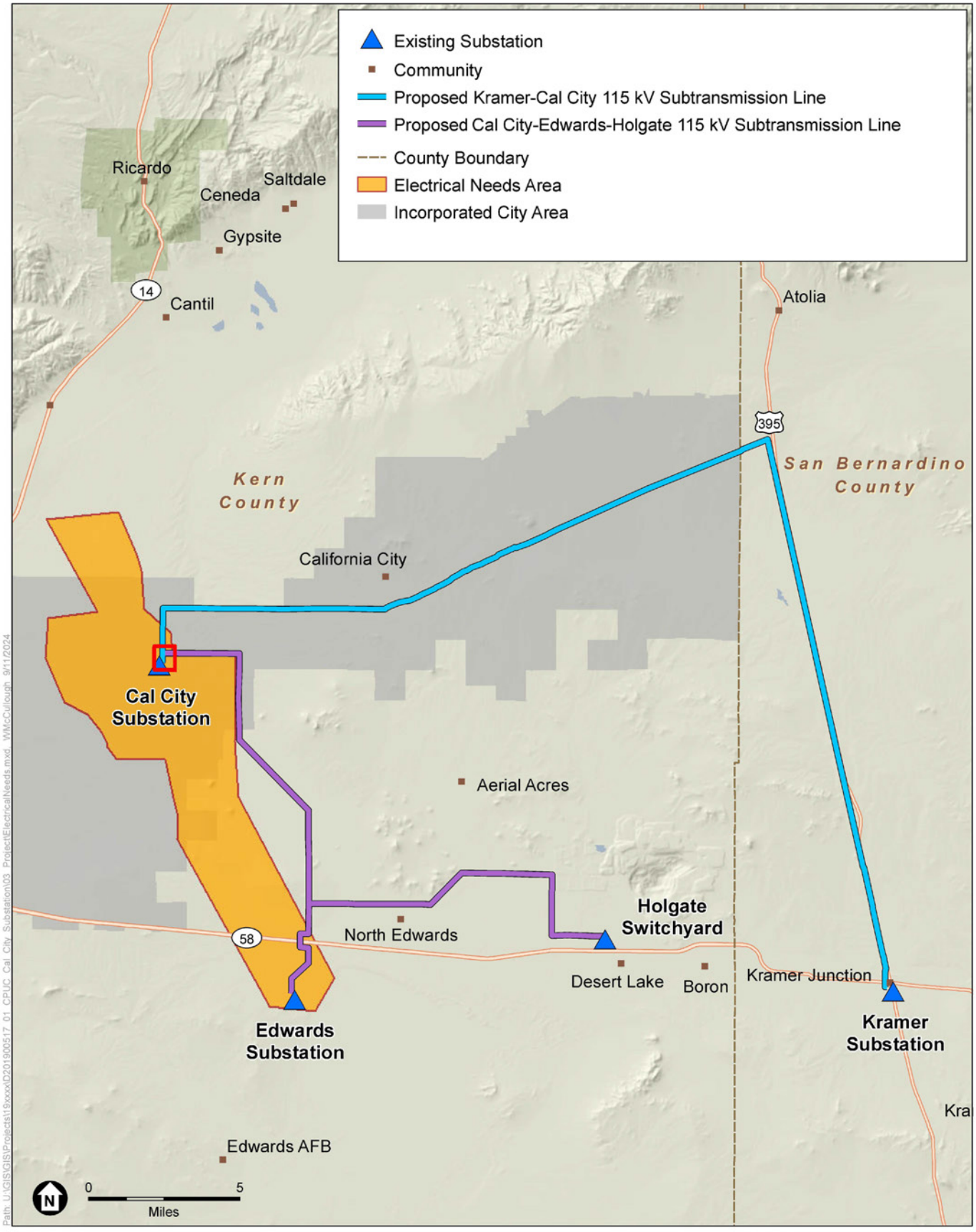
Southern California Edison (SCE), in its California Public Utilities Commission (CPUC) application (A.23-03-005), filed on March 14, 2023, requested a Permit to Construct the Cal City Substation 115 kilovolt (kV) Upgrade Project (Project) and related components pursuant to Rule 2.4 of the CPUC's Rules of Practice and Procedure (SCE 2023a). This Environmental Impact Report (EIR) is an informational document intended to disclose to the public and decision-makers the environmental impacts of the Project proposed by SCE. The EIR assesses the direct, indirect, and cumulative environmental impacts that would occur as a result of the construction, operation, and maintenance of the Project and its alternatives.

This EIR examines all of the resource areas in the California Environmental Quality Act (CEQA) Guidelines Appendix G Checklist including Aesthetics, Agriculture and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire. For each resource area, the criteria identified in CEQA Guidelines Appendix G are addressed, as well as additional criteria identified by CPUC that are specific to the types of projects evaluated by the CPUC (CPUC 2019).

1.2 Project Overview

The Project would include two new subtransmission lines: the Kramer–Cal City 115 kV Subtransmission Line, from Kramer Substation to Cal City Substation, and the Cal City–Edwards-Holgate 115 kV Subtransmission Line, from Cal City Substation to Holgate Switchyard with a tap line to Edwards Substation on Edwards Airforce Base, upgrades to the existing SCE-owned Cal City Substation from 33/12 kV to 115/33 kV and 115/12 kV and the addition of fourteen new underground 12 kV distribution getaways and two new underground 33 kV distribution getaways, and upgrades at Edwards and Kramer substations and Holgate Switchyard.

The Cal City Substation upgrade component is intended to serve current and projected demand for electricity in the California City portion of the Electrical Needs Area (ENA). The subtransmission line components are proposed to maintain electric system reliability and flexibility to the entire ENA, which also includes surrounding portions of unincorporated Kern County and Edwards Air Force Base. **Figure 1-1**, *Electrical Needs Area*, shows the location of



SOURCES: ESA, 2023; SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 1-1
Electrical Needs Area

the Project and ENA in relation to the larger regional area. The proposed 115 kV line segment to Edwards Substation component of the Project is to address the operational flexibility and reliability need for a second source of power to the Edwards Substation consistent with SCE's subtransmission planning criteria and guidelines.

The southern portion of the ENA contains SCE's Edwards Substation, one of two SCE substations that serve customer electrical demand on the U.S. Air Force installation at Edwards Air Force Base, the other being Southbase Substation. Both substations currently receive power from a single 115 kV source line originating from SCE's Holgate Switchyard, located approximately 11 miles to the east-northeast of Edwards Substation. Dependence on a single source line reduces reliability, as an unplanned outage along this source line could result in total loss of power to Edwards Substation and, by extension, total loss of power to all of Edwards Air Force Base. Therefore, a second 115 kV source line to Edwards Substation is required to conform with SCE's subtransmission planning criteria and guidelines to ensure safe and reliable electrical service to Edwards Air Force Base.

1.3 Proposed Project Purpose and Objectives

A project description must state the objectives sought by the proposed project. The statement of objectives should include the underlying purpose of the project and should be clearly written to guide the selection of mitigation measures and alternatives to be evaluated in the EIR (CEQA Guidelines Section 15124(b)). Below are descriptions of the proposed Project purpose and objectives.

1.3.1 Project Purpose

The Project would add load serving capacity in the California City portion of the ENA to serve current and long-term forecasted electrical demand. SCE's existing Cal City Substation serves customer electrical demand in the California City portion of the ENA. Presently, Cal City Substation receives power from two 33 kV distribution source lines. One of the source lines originates from Edwards Substation, which is approximately 12 miles south-southeast of Cal City Substation, and the other originates from Randsburg Substation, which is approximately 24 miles northeast of Cal City Substation. The maximum operating limit of Cal City Substation is limited by the power the two 33 kV distribution source lines can provide, which is 18 megavolt amperes (MVA). Due to new development and the associated increase in electrical demand within the California City portion of the ENA, electrical demand loading has exceeded the capacity of Cal City Substation (as limited by the 33 kV source lines and the transformation capacity of the substation) beginning in 2017 and the load is forecast to grow to 167 MVA during peak demand in a 1-in-10-year heat storm by 2026 and plateau at that level through 2031 (SCE 2023b). Because the expected in-service date of the Project is not until 2028, SCE is implementing several "mitigation projects" to provide up to 77 MVA additional temporary capacity to minimize the amount of load that would otherwise go unserved until the Project would be constructed (SCE 2023b).

These mitigation projects include constructing one new 33 kV distribution circuit from Edwards Substation to the Cal City ENA, reconductoring the existing 33 kV source line from Edward Substation (maximizing its capacity), extending an existing 33 kV circuit to Cal City Substation

from Randsburg Substation, and installing several 33/12 kV temporary distribution pad mount substations,[1] which would provide power from the 33 kV lines from Edwards Substation (SCE 2023a). SCE has completed reconductoring of the existing Cal City Substation 33 kV source line from Edwards Substation and is in the process of extending the 33 kV line from Randsburg Substation to Cal City Substation and installing several temporary 33/12 kV distribution pad mount substations (SCE 2023b). The distribution line extension project from Randsburg Substation to Cal City Substation is known as the Distribution Pappas 33 kV Line Project and is evaluated in this EIR as a cumulative project (see Section 3.0, Table 3.0-1, Project No. 7).

These mitigation projects would provide some loading relief, but they would not be sufficient to meet the 10-year forecast need of the Cal City Substation portion of the ENA and therefore would not be a substitute for the long-term solution provided by the Project. As the electrical demand is projected to continue to grow, additional substation capacity, source line capacity, and distribution facilities are needed to support the continued growth (SCE 2023a).

The Project would also improve operational flexibility for SCE to provide power to the ENA by minimizing reliance on Edwards Substation, which is located on Edwards Air Force Base with restricted access. By providing new 115 kV subtransmission lines between Kramer and Cal City substations and between Cal City Substation, Edwards Substation, and Holgate Switchyard, along with necessary substation improvements and distribution getaway improvements to increase capacity of Cal City Substation, the Project would serve current and projected demand for electricity within the ENA.

In addition, Edwards Substation is in the southern portion of the ENA and is currently served by a single 115 kV source line, which reduces reliability to Edwards Air Force Base as an unplanned outage along this line could result in a total loss of power to the substation and Edwards Air Force Base. Section 2.3.8.1 of SCE's *Subtransmission Planning Criteria and Guidelines* state that when a substation either serves more than 28 MVA of load or when more than a single 28 MVA transformer is installed, two subtransmission source lines should be provided (SCE 2023a). Edwards Substation meets both criteria requiring installation of a second subtransmission source line. Therefore, the Project would also improve system reliability and operational flexibility in the ENA by providing a second 115 kV subtransmission source line to Edwards Substation consistent with SCE's reliability criteria to ensure safe and reliable electrical service to Edwards Air Force Base.

[1] Temporary distribution pad mount substations consist of pad mounted distribution transformers and associated switching and protective equipment. They provide temporary capacity but because they are not constructed using substation-class equipment and cannot accommodate many of the design elements associated with a standard substation (telemetry, remote monitoring and operation, emergency overload capacity, security measures, etc.) they are not adequate for long-term use and do not provide a level of service consistent with the rest of SCE's electrical system.

1.3.2 Objectives

SCE has identified the objectives for the Project in its Permit to Construct Application (SCE 2023) as follows:

- Add load serving capacity in the California City portion of the ENA to serve current and long-term forecasted electrical demand.
- Improve system reliability within the ENA by providing diverse routes of power supply to the region.
- Improve system operational flexibility by minimizing reliance on Edwards Substation (located on a military base with restricted access) to provide power to the ENA (adjacent to the military base).
- Improve system reliability within the ENA by providing a diversely routed second 115 kV source line to Edwards Substation.

1.4 Agency Use of This Document

Section 15124(d) of the CEQA Guidelines requires that an EIR contain a statement briefly describing the intended uses of the EIR. The CEQA Guidelines indicate that the EIR should identify the ways in which the lead agency and any responsible agencies would use this document in their approval or permitting processes. The following discussion summarizes the roles of the agencies and the intended uses of the EIR.

1.4.1 CPUC

Pursuant to Article XII of the Constitution of the State of California, the CPUC is charged with the regulation of investor-owned public utilities, including SCE. The CPUC is the lead agency for CEQA compliance in evaluation of the SCE's Project and has directed the preparation of this EIR. This EIR will be used by the CPUC, in conjunction with other information developed in the CPUC's formal record, to act on SCE's application for a Permit to Construct for construction, operation, and maintenance of the proposed Project. Under CEQA requirements, the CPUC will determine the adequacy of the Final EIR and, if adequate, will certify the document as complying with CEQA. If the CPUC approves a project with significant unavoidable environmental impacts, it must state why in a Statement of Overriding Considerations, setting forth reasons supporting its actions, which would be included in the CPUC's decision on the application.

1.4.2 Other Agencies

Several other state agencies will rely on information in this EIR to inform them in their decision over issuance of specific permits related to Project construction, operation, and/or maintenance. In addition to the CPUC, state agencies such as the California Department of Transportation, California Department of Fish and Wildlife, the Regional Water Quality Control Board, and the State Office of Historic Preservation would be involved in reviewing and/or approving the proposed Project. On the federal level, agencies with potential reviewing and/or permitting authority include the U.S. Department of Interior/Bureau of Land Management, U.S. Fish and Wildlife Service and U.S. Department of Defense, Edwards Air Force Base.

Because the CPUC has preemptive jurisdiction over construction, operation, and maintenance of SCE facilities in California, no local discretionary (use permits) are required. However, SCE would be responsible for obtaining all necessary ministerial building, grading, and encroachment permits from local jurisdictions. The CPUC's General Order 131-D requires SCE to comply with local building, design, and safety requirements and standards, to the degree feasible, to minimize potential Project conflicts with local land uses.[2]

In the context of electric utility projects, CPUC General Order 131-D, Section XI.B, states that:

> *Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters.*

The CPUC's authority does not preempt special districts, such as air quality districts, or other state agencies or the federal government. SCE would obtain all necessary permits, approvals, and licenses, and would participate in reviews and consultations as needed with federal, state, and local agencies as shown in **Table 1-2**, *Summary of Potential Permit Requirements.*

1.5 Public Review and Comment

1.5.1 Educational Outreach and Scoping

On November 8, 2023, the CPUC published and distributed a Notice of Preparation (NOP) of an environmental impact report to solicit input from federal, state, and local agencies, and the public to inform the scope and content to be considered in the EIR being prepared for the Project. A copy of the NOP was provided to the State Clearinghouse of the Governor's Office of Planning and Research, which assigned State Clearinghouse Number 2023110218 as the Project's unique State identification number for the CEQA review. The Notice of Scoping Meetings and Release of the NOP was mailed to property owners within 300 feet of the Project alignments and locations, and the NOP was mailed directly to responsible and trustee agencies, and individuals that had previously shown interest in the Project. The NOP provided a brief description of the Project, included a map showing the location of proposed components of the Project, identified potential areas of environmental impacts, and provided notice for virtual public scoping meetings.

To announce the release of the NOP and provide details about the public scoping meetings, the CPUC published a legal notice in the Mojave Desert News, a weekly periodical in general circulation in the Project vicinity. The legal notice was published for two successive weeks, on November 8, 2023, and November 15, 2023. Proof of the publication is provided in **Appendix B**, *Scoping Report*. The meeting announcement and an electronic copy of the NOP was also posted on the CPUC's website established for the Project at https://ia.cpuc.ca.gov/environment/info/esa/CalCity/index.html.

[2] On January 30, 2025, in Decision 25-01-055, the CPUC adopted General Order 131-E (GO 131-E), which supersedes GO 131-D. However, as SCE filed its PTC application prior to the adoption of GO 131-E, this Draft EIR has been prepared pursuant to the protocol under GO 131-D.

TABLE 1-2
SUMMARY OF POTENTIAL PERMIT REQUIREMENTS

Permits and Other Requirements	Agency	Jurisdiction/Purpose
Federal		
Right-of-Way Grant	Bureau of Land Management (BLM)	Use of federal lands managed by Bureau of Land Management typically constituting a major federal action, which triggers review of the Project under the National Environmental Policy Act
Easement Acquisition	U.S. Department of Defense (DoD)	Use of federal lands under the jurisdiction of U.S. Department of Defense, which triggers review of the Project under the National Environmental Policy Act
Endangered Species Consultation (Section 7 or Section 10 incidental take permit)	U.S. Fish and Wildlife Service	If project has the potential to affect federally listed threatened or endangered species, consultation would be required
National Historic Preservation Act Section 106 consultation	BLM and California State Historic Preservation Office	If project includes a Federal Undertaking (BLM right-of-way grant and DoD easement acquisition permit processes)
State		
Permit to Construct	California Public Utilities Commission	Overall project approval and CEQA review
National Pollutant Discharge Elimination System Construction Stormwater Permit (NPDES)	State Water Resources Control Board	Storm water discharges associated with construction activities disturbing more than 1 acre of land
Encroachment Permit	California Department of Transportation	Construction, operation, and maintenance within, under, or over state highway (U.S. 395 and State Route 58) right-of-way
Endangered Species Consultation (California Endangered Species Act, California Fish and Game Code Sections 2050 et seq., 3511, and 1900–1913)	California Department of Fish and Wildlife	Construction, operation, and maintenance that may affect a state-listed species or its habitat, incidental take authorization (if required)
Lake and Streambed Alteration (Section 1600)	California Department of Fish and Wildlife	Construction and operation that may have an impact on wetlands or other jurisdictional waterways
Local		
Roadway Encroachment Permit (ministerial)	City of California City, Kern County, San Bernardino County	Construction, operation, and maintenance within, under, or over local road right-of-way
Commercial Grading Permit (ministerial)	City of California City Building Department	Industrial/commercial grading that affects soil erosion and dust

The two virtual scoping meetings were held on November 30, 2023, from 2:30 to 4 p.m. and from 6:30 to 8 p.m. Fourteen people attended the afternoon meeting, and four attended the evening meeting. Boris Sanchez of the CPUC, as well as Matt Fagundes, Maria Hensel, and Olivia Silverstein of Environmental Science Associates, consultant to the CPUC, hosted the meetings.

During the meetings, the CPUC summarized the lead agency's decision and environmental review process and noted the opportunities for public participation within the CEQA process. A brief description of the Project as identified by SCE in its PEA was presented and the range of environmental issue areas to be addressed in the EIR was discussed. The types of alternatives that can be considered in the EIR and the next steps in the environmental review process were also

addressed at the scoping meetings. Following the presentation, the public was provided with an opportunity to submit oral and/or written comments.

Three members of the public provided oral comments on the Project during the afternoon scoping meeting, and one person commented during the evening meeting session. The CPUC received five written comments during the 30-day public scoping period. Transcripts from the virtual scoping meetings and copies of the written comments are provided in Appendix B.

Themes of the written and verbal comments in the scoping report that fall within the purview of CEQA are as follows:

- Project alignment appeared to be near desert tortoise critical habitat areas.
- Special-status species have been documented in the study area per the California Natural Diversity Database (CNDDB).
- A qualified biologist should conduct a habitat assessment during biological studies in support of the EIR.
- The Draft EIR should include measures to avoid, minimize, and/or mitigate impacts related to riparian and wetland habitats.
- Consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of Project is recommended as early as possible.

1.5.2 Public Comment on the Draft EIR

This Draft EIR is being circulated to local, state, and federal agencies and to interested individuals who may wish to review and comment on the report. **Appendix C**, *Mailing List and Certificate of Service*, provides a copy of the mailing list to which the Draft EIR and/or Notice of Availability were sent. Written comments may be submitted to the CPUC during the 45-day Draft EIR public review period. Written and verbal comments on this Draft EIR will be accepted via regular mail, fax, and e-mail and at a noticed public meeting (either noticed in this document or under separate cover). All comments received will be addressed in a Response to Comments document, which, together with this Draft EIR, will constitute the Final EIR for the Project.

This Draft EIR identifies the physical environmental impacts of the Project on the environment, indicates whether and how significant impacts would be mitigated or avoided, and identifies and evaluates a reasonable range of alternatives to the Project. This document is intended to provide the CPUC with sufficient information about the environmental effects of the proposed Project such that it may approve the proposed Project. Project approval would be considered at a separate noticed public meeting of the CPUC, subsequent to publication of the Final EIR.

CEQA requires that a lead agency shall neither approve nor implement a project as proposed unless it has eliminated or substantially lessened all significant environmental impacts to the extent feasible and has determined that any remaining significant effects are “acceptable” when balanced against the project’s benefits. To approve a project when significant impacts identified in the Final EIR cannot be fully mitigated, the lead agency must adopt a statement of overriding considerations, setting forth the reasons supporting its action. Findings of Fact and the Statement

of Overriding Considerations must be included in the record of project approval and referenced in the Notice of Determination.

1.6 Reader's Guide to This EIR

This EIR is organized as follows:

- **Executive Summary.** This summary provides a summary description of the Project, the alternatives, their respective environmental impacts, and identifies the Environmentally Superior Alternative. It also provides a summary table of the impacts of the proposed Project and alternatives, as well as feasible mitigation measures to reduce identified effects.
- **Chapter 1, *Introduction*.** The introduction provides a discussion of the proposed Project's background and project objectives, briefly describes the Project, and outlines public agencies' use of the EIR.
- **Chapter 2, *Project Description*.** This chapter provides a detailed description of the Project.
- **Chapter 3, *Environmental Analysis of the Project.*** Provides a comprehensive analysis and assessment of impacts and mitigation measures for the proposed Project. This chapter is divided into sections for each environmental issue area (e.g., air quality, biological resources, etc.) that describe the environmental and regulatory settings for each issue area, as well as identifying impacts and mitigation measures for the Project. This chapter also identifies the cumulative projects considered in the analysis of cumulative impacts and provides a discussion of the cumulative impacts of the Project in combination with reasonably foreseeable past, present and future projects.
- **Chapter 4, *Alternatives Analysis*.** Provides a description of the alternatives screening and evaluation process, describes the alternatives considered but eliminated from further analysis and the rationale, therefore, describes the alternatives analyzed, and includes analysis of the alternatives relative to the issue areas evaluated in Chapter 3. Chapter 4 also provides a discussion of the relative environmental advantages and disadvantages of the Project and the alternatives that were evaluated in the Draft EIR and identifies the Environmentally Superior Alternative.
- **Chapter 5, *Other CEQA Considerations.*** Provides a discussion of growth-inducing impacts, significant environmental effect that cannot be avoided, irreversible environmental changes, and issues related to environmental justice.
- **Chapter 6, *Report Preparers*.** Identifies the primary authors of this Draft EIR.
- **Appendices:**
  - Appendix A, *Project Map Book*
  - Appendix B, *Scoping Report*
  - Appendix C, *Mailing List and Certificate of Service*
  - Appendix D, *(EMF) Field Management Plan*
  - Appendix E, *Supplemental Visual Simulations*
  - Appendix F, *Air Quality and GHG Calculations*

- Appendix G, *Biological Resources*
- Appendix H, *Geology Technical Report*
- Appendix I, *Radius Search List*
- Appendix J, *Noise*
- Appendix K, *Tribal Consultation*
- Appendix L, *SCE Wildfire Plans*
- Appendix M, *Routing Report*
- Appendix N, *Mitigation Monitoring, Compliance, and Reporting Program*

1.7 References

CPUC (California Public Utilities Commission). 2019. *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*. Version 1.0. November 2019.

SCE (Southern California Edison Company). 2023a. Application of Southern California Edison Company for a Permit to Construct Electrical Facilities with Voltages between 50 kV and 200 kV and Proponent's Environmental Assessment for the Cal City 115 kV Substation Upgrade Project. March 14, 2023.

SCE. 2023b. Southern California Edison Company Responses to California Public Utilities Commission (CPUC) Data Request No. 2 for the Cal City Substation 115 kV Upgrade Project. Received via email, August, September 2023.

CHAPTER 2
Project Description

2.1 Introduction

Southern California Edison (SCE), in its California Public Utilities Commission (CPUC) application (A.23-03-005) filed on March 14, 2023, requested a Permit to Construct electrical facilities with voltages between 50 Kilovolts (kV) and 200 kV for the proposed Cal City Substation 115 kV Upgrade Project (Project) in Kern and San Bernardino counties. SCE's application for a Permit to Construct included the Proponent's Environmental Assessment (PEA), which SCE prepared pursuant to Rule 2.4 of CPUC's Rules of Practice and Procedure.

The following description of the Project is based on information provided in the application, the PEA (SCE 2023a), and other written clarifications provided by SCE in response to CPUC data requests (SCE 2023b, 2023c, 2024a, 2024b).

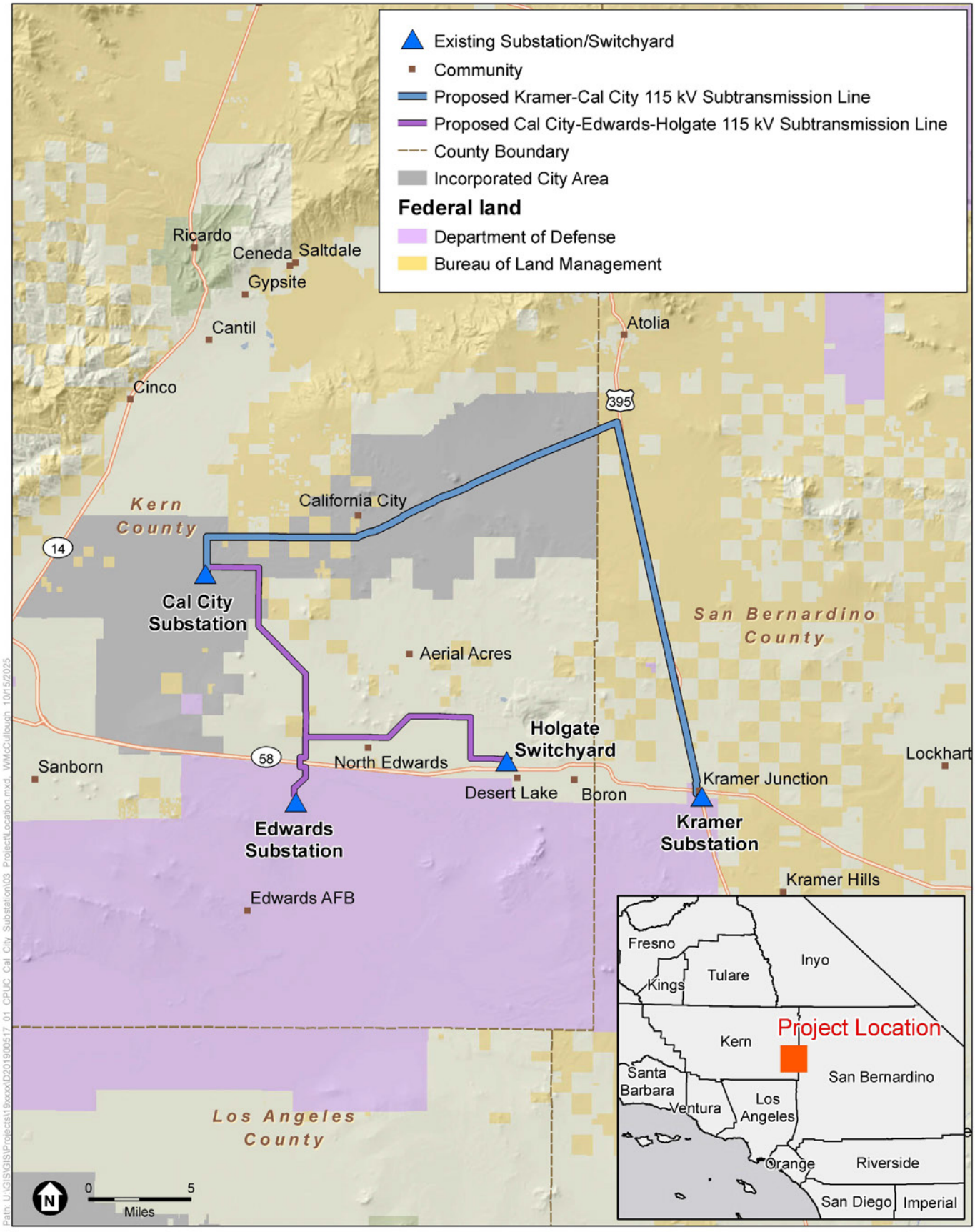
2.2 Project Location

The Project would be located in unincorporated Kern and San Bernardino counties, the city of California City, and Edwards Air Force Base (EAFB) in the Mojave Desert region of California, on federal, state, municipal, and private property. A map that shows the location of the Project is presented in **Figure 2-1**, *Project Location and Overview*.

2.3 Existing System

2.3.1 Existing Utility System

The existing utility system related to the Project is defined by the existing transmission, subtransmission, and distribution lines in the Project vicinity, and by the switchyard and substations present along these lines. The existing Cal City Substation has no subtransmission voltage (e.g., 115 kV) infrastructure. Currently, power is provided to the substation through two 33 kV distribution lines, one extending from SCE's Randsburg Substation approximately 24 miles to the northeast, and one extending from SCE's Edwards Substation 12 miles southeast of the Cal City Substation. Transformers at the Cal City Substation transform the voltage from 33 kV to 12 kV, then distribute it via 12 kV distribution circuits.



SOURCE: ESA 2023; SCE 2023b

Cal City Substation 115 kV Upgrade Project

Figure 2-1
Project Overview

The Edwards Substation, located on U.S. Department of Defense (DoD) property on EAFB, is one of two SCE-owned substations (the other being the Southbase Substation approximately 7 miles to the south) that serves customers on EAFB. The Edwards Substation also serves other SCE customers not located on the base. Power is provided to the Edwards Substation through a single 115 kV line originating from SCE's Holgate Switchyard, situated approximately 11 miles to the northeast. **Figure 2-2**, *Existing System Configuration*, shows the existing subtransmission and 33 kV distribution lines that provide power to the Cal City Substation. Existing transmission lines (i.e., with voltage greater than 200 kV) and existing 12 kV distribution lines in the vicinity of the Project are not shown in Figure 2-2. The existing utility system in the Project vicinity consists of the following components:

Existing Substations and Switchyard

- Cal City Substation (33/12 kV)
- Randsburg Substation (115/33 kV)
- Kramer Substation (220/115 kV and 115/33 kV)
- Holgate Switchyard (115 kV)
- Southbase Substation (115/33 kV)
- Edwards Substation (115/33 kV)

Existing Transmission Line

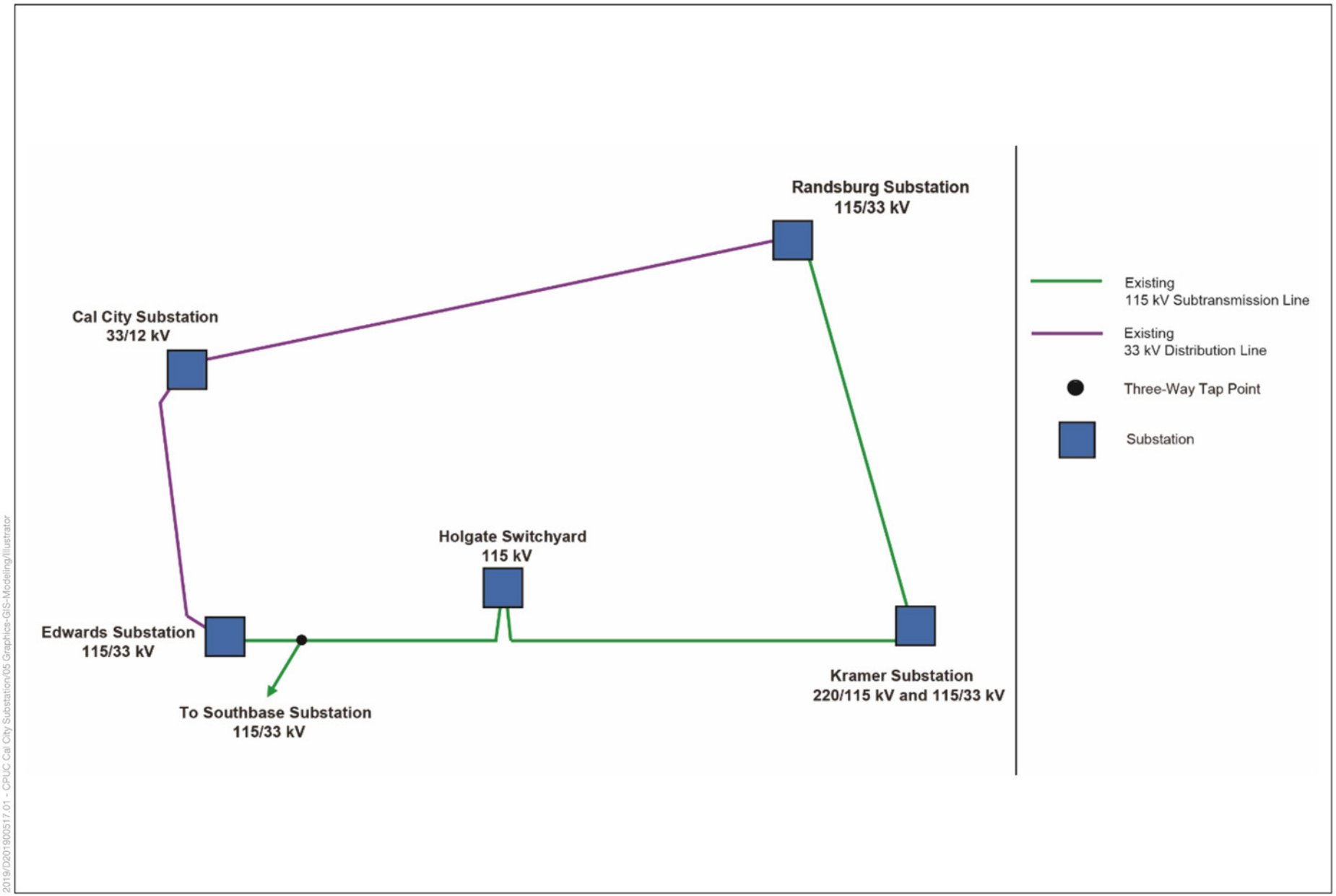
- West–Kramer (220 kV)

Existing Subtransmission Lines

- Edwards–Holgate-Southbase (115 kV)
- Kramer–Holgate (115 kV)
- Kramer–Inyokern-Randsburg No. 1 (115 kV)
- Kramer–Inyokern-Randsburg No. 3 (115 kV)

Existing Distribution Lines

- Heavy (33 kV), one of two existing source lines for the Cal City Substation
- Castle Butte (33 kV), one of two existing source lines for the Cal City Substation
- Isner (33 kV)
- Dogbane (12 kV)
- Overall (12 kV)
- Greasewood (12 kV)
- Brittle Bush (12 kV)
- Conte (12 kV)



2019/D201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE 2023a

Cal City Substation 115 kV Upgrade Project

Figure 2-2
Existing System Configuration

ESA

2.3.2 Users and Area Served by the Existing Utility System

The infrastructure associated with the existing utility system provides power to communities served by the existing Cal City 33/12 kV substation, including California City and surrounding communities. The existing infrastructure also serves unincorporated Kern and San Bernardino counties and EAFB. These communities are served primarily by the Edwards 115/33 kV, Kramer 220/115 kV and 115/33 kV, Randsburg 115/33 kV, and Southbase 115/33 kV substations and the Holgate 115 kV switchyard.

2.3.3 Existing Rights-of-Way and Easements

2.3.3.1 Identification and Description

SCE has existing rights-of-way (ROWs), which are a combination of easements, permits, grants, and/or franchise rights along portions of the Project alignment (see Appendix A for existing SCE ROW locations). The existing ROWs on BLM lands generally range from 75 feet to 225 feet wide. The existing easements on DoD lands range from 65 feet to 105 feet wide. Easements on California Department of Fish and Wildlife (CDFW) lands are 225 feet wide. Easements on private lands vary in width from approximately 30 feet to 225 feet. Portions of the Project alignment are also located within or across areas within franchise rights.

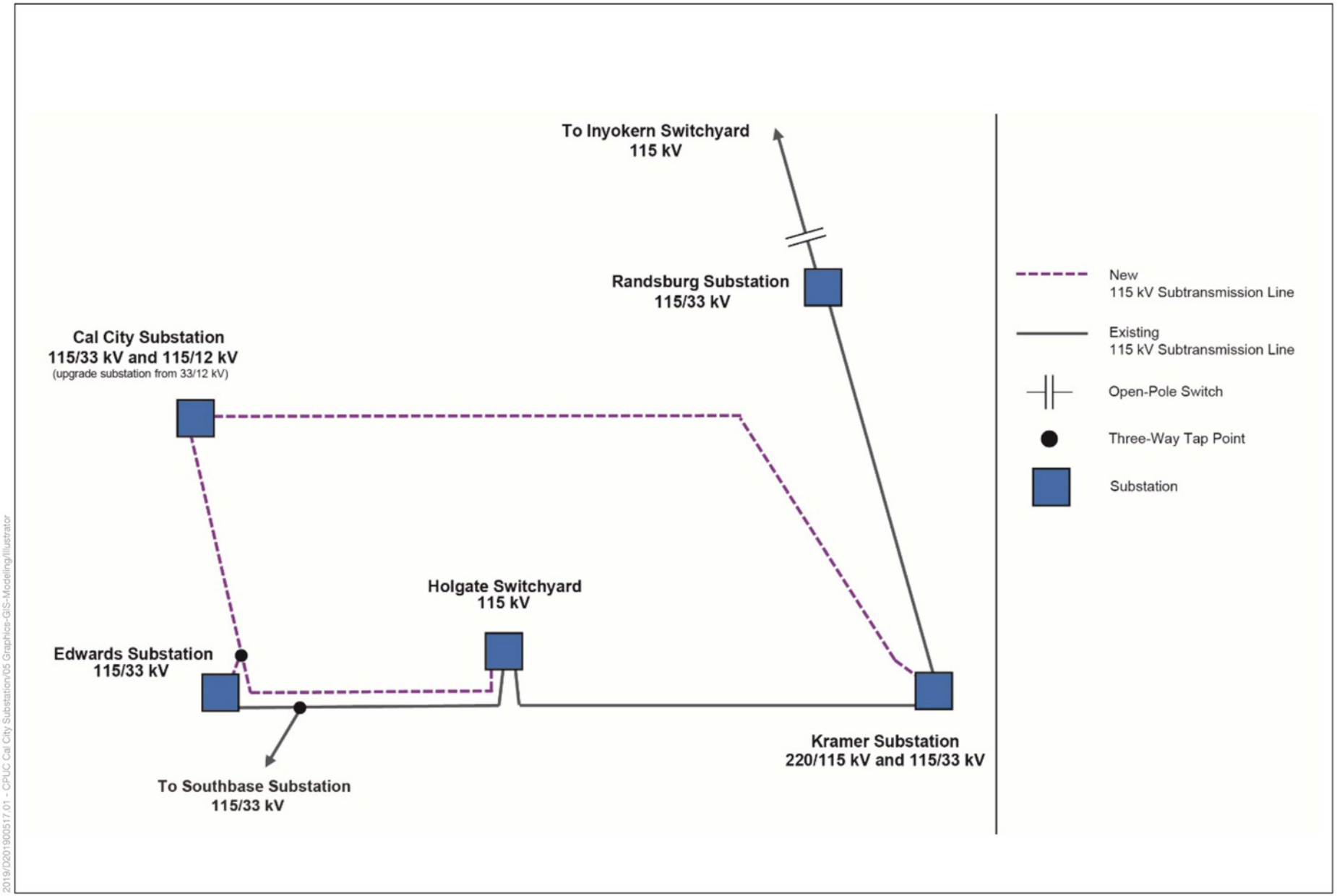
2.3.3.2 Replacement, Modification, or Relocation of Project Facilities

The Project proposes to replace, modify, and install facilities within or near existing SCE facilities and/or ROW along portions of the Project alignment where such existing facilities and/or ROW exist. SCE may be able to use portions of its existing land rights and/or ROW along portions of the Project alignment (see Appendix A for existing SCE ROW locations).

2.4 Overview of the Project

As described in Chapter 1, *Introduction*, the Project would add load-serving capacity in the Electrical Needs Area (ENA) to serve current and long-term forecast electrical demand; improve system reliability within the ENA by providing diverse routes of power supply to the region; improve system operational flexibility by minimizing reliance on the Edwards Substation (located on a military base with restricted access) to provide power to the ENA (adjacent to the military base); and improve system reliability within the ENA by providing a diversely routed second 115 kV source line to the Edwards Substation.

An overview map of the Project is presented in Figure 2-1 and the proposed new and existing 115 kV subtransmission lines that would provide power to the proposed utility system are shown in **Figure 2-3**, *Proposed System Configuration*. The Project would include the major components described below in Sections 2.4.1 through 2.4.4 and illustrated at the end of this chapter in **Figure 2-13**, *Project Index Map, Map 1 of 14,* through **Figure 2-26**, *Project Index Map 14 of 14* (SCE 2023b).



SOURCE: SCE 2023a

Cal City Substation 115 kV Upgrade Project

Figure 2-3
Proposed System Configuration

2019/D201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

2.4.1 Subtransmission Lines

The Project would include the following subtransmission-related components:

- Kramer–Cal City 115 kV Subtransmission Line.
  - Construction of approximately 42 miles of subtransmission line in an overhead configuration from the Kramer Substation to the Cal City Substation.
  - Transfer approximately 5 miles of existing Castle Butte 33 kV and 2 miles of existing Isner 33 kV distribution lines to the new Kramer–Cal City 115 kV Subtransmission Line structures, and remove 151 existing distribution structures along these line segments.
  - Install optical ground wire (OPGW) on the new Kramer–Cal City 115 kV Subtransmission Line.
- Cal City–Edwards-Holgate 115 kV Subtransmission Line.
  - Construction of approximately 28 miles of subtransmission line in an overhead configuration from the Cal City Substation to the Holgate Switchyard, including a tap line connecting to the Edwards Substation.
  - Transfer approximately 2 miles of existing Castle Butte 33 kV and 2 miles of existing Conte 12 kV distribution lines to the new Cal City–Edwards-Holgate 115 kV Subtransmission Line structures and remove 90 existing distribution structures along these line segments.
  - Install OPGW and all-dielectric self-supporting (ADSS) fiber optic cable on the new Cal City–Edwards-Holgate 115 kV Subtransmission Line.

2.4.2 Substations

The Project would include the following substation-related components.

- Cal City Substation improvements:
  - Expand the existing substation by approximately 10 acres.
  - Install a new five-position 115 kV switchrack with five positions initially equipped.
  - Install a new five-position 33 kV switchrack with five positions initially equipped.
  - Install a new 21-position 12 kV switchrack with 19 positions initially equipped.
  - Install two 115 kV/33 kV, 28 megavolt-ampere (MVA) transformers.
  - Install four 115 kV/12 kV, 28 MVA transformers.
  - Install one 115 kV, 28.8 megavolt-ampere reactive (MVAR) capacitor.
  - Install two 33 kV, 4.8 MVAR capacitors.
  - Install four 12 kV, 4.8 MVAR capacitors.
  - Install a new mechanical electrical equipment room (MEER), with the associated communication, control, and protection for the expanded substation.
  - Install two new underground 33 kV distribution getaways.

  - Install 14 new underground 12 kV distribution getaways at the Cal City Substation.
  - Install equipment to support substation automation and protection requirements.
- Edwards Substation improvements:
  - Equip one existing 115 kV line position.
  - Expand the existing 115 kV switchrack to a breaker-and-a-half configuration.
  - Convert two 115 kV bank positions to a double bus–double breaker configuration.
  - Install or upgrade protection for two 115 kV lines and two buses.
  - Install equipment in support of the new telecommunications cable.
- Holgate Switchyard improvements:
  - Equip one existing 115 kV line position.
  - Upgrade protection for four 115 kV lines and the north 115 kV bus.
  - Install equipment in support of the new telecommunications cable.
- Kramer Substation improvements:
  - Equip one existing 115 kV line position.
  - Convert two 115 kV bank positions to a double bus–double breaker configuration.
  - Install or upgrade protection for two 115 kV lines and two banks.
  - Install equipment in support of the new telecommunications cable.

2.5 Project Components

The major structural systems proposed as part of the Project include subtransmission, substation, distribution, and telecommunications components. The Project consists of construction, operation, and maintenance of the components described below.

2.5.1 Subtransmission Lines

Two new 115 kV subtransmission lines that would total a combined length of 70 miles are proposed to be built on new structures. The Project would include the new Kramer–Cal City 115 kV Subtransmission Line, which would extend approximately 42 miles in an overhead configuration from the Kramer Substation to the Cal City Substation. Additionally, the proposed new Cal City–Edwards-Holgate 115 kV Subtransmission Line would extend approximately 28 miles in an overhead configuration from the Cal City Substation to the Holgate Switchyard, including a tap line connecting to the Edwards Substation. Figure 2-1 presents an overview of the proposed alignments for these subtransmission lines.

The following facilities would be installed for the new Kramer–Cal City 115 kV Subtransmission Line:

- Approximately 685 single-circuit lightweight steel (LWS) poles and tubular steel poles (TSPs).
- Approximately 42 circuit-miles of new 954 SAC Magnolia and/or 954 Aluminum Core Steel Reinforced (ACSR) Rail conductor in a single-circuit configuration on new poles.
- Approximately 42 miles of OPGW on new poles.
- Marker balls on OPGW, as required.

The following facilities would be installed for the new Cal City–Edwards-Holgate 115 kV Subtransmission Line:

- Approximately 463 single-circuit LWS poles (including LWS H-frames) and TSPs.
- Approximately 28 circuit miles of new 954 SAC Magnolia and/or 954 ACSR Rail conductor in a single-circuit configuration on new poles.
- Approximately 28 miles of OPGW on new poles.
- Approximately 1,600 feet of ADSS fiber optic cable on new poles connecting into the Cal City Substation.
- Marker balls on OPGW, as required.

2.5.1.1 Subtransmission Structures

Structures supporting the two new subtransmission lines would include TSPs, LWS poles, and LWS pole guy stubs and/or TSP stub poles if there is no room for down guys and anchors (SCE 2024a). TSPs are self-supporting, engineered structures constructed from galvanized steel; the design of a given TSP is specific to the location and engineering considerations. TSPs would be either installed on a drilled, poured-in-place concrete foundation or installed on drilled micro-piles. To reduce the effect of long-term deterioration of the TSP concrete foundations from potential corrosive soils, the Project design for TSP foundation concrete mix would be consistent with American Concrete Institute building code requirements[1] to resist corrosive soils (SCE 2024a). LWS poles are self-supporting or guyed structures constructed from galvanized steel. LWS poles would be direct buried. **Table 2-1**, *Proposed Subtransmission Line Structures*, presents an accounting of the numbers and types of facilities proposed to be installed, by subtransmission line. This table also presents the range of aboveground and belowground dimensions of the proposed structures.

The Project LWS poles that are not dead-ended and without distribution underbuild and single-circuit TSPs without distribution underbuild would be crossarm-less designs of horizontal post insulators (SCE 2024a). The design reduces the opportunity for desert tortoise predators by providing limited stable surfaces for perching or nesting (SCE 2023c). Subtransmission facilities would be designed consistent with the Avian Power Line Interaction Committee (APLIC)

[1] ACI Code 318, Section 19.3.1 Building Code Requirements for Structural Concrete.

Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 where feasible. Subtransmission facilities would also be evaluated for potential collision reduction devices in accordance with APLIC's *Reducing Avian Collisions with Power Lines: The State of Art in 2012*. In addition, upon completion of construction, the Project would be included in SCE's programmatic raven management plan, which seeks to minimize the effects of raven predation on desert tortoises from SCE infrastructure (SCE 2023c).

TABLE 2-1
PROPOSED SUBTRANSMISSION LINE STRUCTURES

Structure Type	Proposed Approximate Number of Structures	Approximate Height Above Ground (feet)	Approximate Pole Diameter (feet)	Approximate Burial Depth (LWS poles) and Foundation Depth (TSPs) (feet)	Approximate Auger Width (LWS pole) and Foundation Diameter (TSPs) (feet)	Approximate Concrete Volume/Pole (cubic yards)
New Kramer–Cal City 115 kV Subtransmission Line						
LWS Poles	681	34–109	1.5–3	6–14	2–3	NA
TSP[a]	4	42–132	2–6	20–50	5	15–154
New Cal City–Edwards-Holgate 115 kV Subtransmission Line						
LWS Poles	437	34–109	1.5–3	6–14	2–3	NA
LWS H-Frame Poles[b]	10	56–74	1.5–3	9–11	2–3	NA
TSP[a,c]	16	42–100	2–6	20–50	5	15–154

NOTES: kV = kilovolt; LWS = lightweight steel; NA = not applicable; TSP = tubular steel pole.

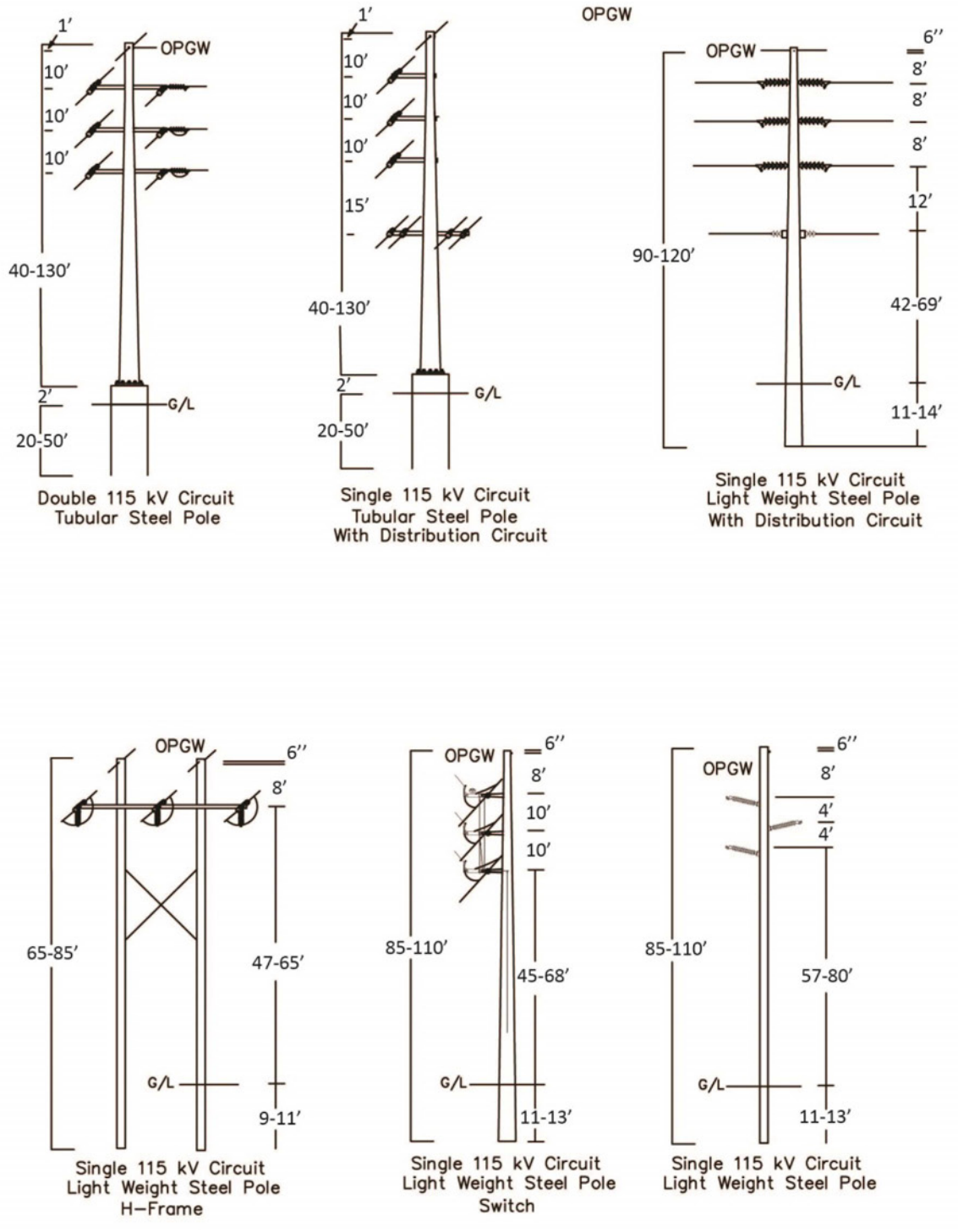
a. Some structures may be TSP stub poles (SCE 2024a), which range in height from approximately 42 feet to 52 feet.
b. H-frames consist of two LWS poles each. The number of H-frames provided reflects the total number of poles (10 poles) associated with H-frames (five H-frame structures).
c. Includes seven TSPs entering the Cal City Substation from the north that would be shared by both proposed 115 kV subtransmission lines. These would be double-circuit TSPs.

SOURCE: SCE 2023a.

The TSPs and LWS poles installed for the Project would be gray, with a dull non-specular finish. Because the galvanized steel would be dull, the light reflectivity of the TSPs and LWS poles would be moderate and would lessen over time as the poles weather. Diagrams of the proposed structures are presented in **Figure 2-4a**, *Proposed Subtransmission Structures,* and **Figure 2-4b**, *Proposed Subtransmission Structures.* The dimensions of the structures are presented in Table 2-1.

Aviation lighting and/or marking may be required for some structures that would be constructed as part of the Project, specifically near EAFB. Upon completion of final design, SCE would file with the Federal Aviation Administration (FAA) for official study and determination of lighting and/or marking requirements for all structures near EAFB.

Six existing subtransmission line wood poles along SCE's Edwards-Holgate-Southbase 115 kV Subtransmission Line would be removed west of the Holgate Switchyard to accommodate the proposed new Cal City–Edwards-Holgate 115 kV Subtransmission Line. The existing subtransmission infrastructure (e.g., insulators, conductor) would be transferred onto the new Cal City–Edwards-Holgate 115 kV Subtransmission Line double-circuit TSPs.



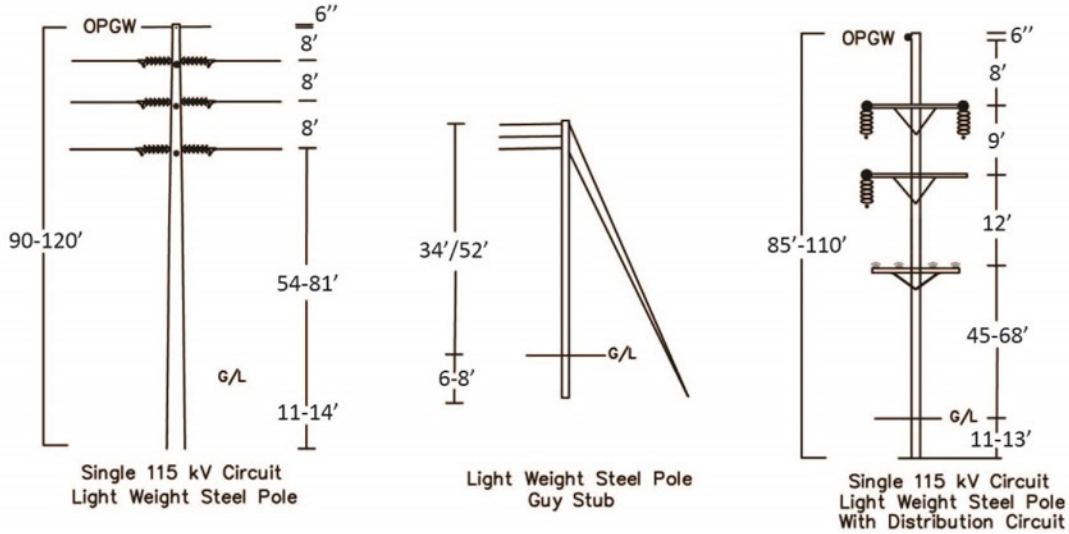
NOTE: OPGW= optical ground wire

2019/D201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE 2024

Cal City Substation 115 kV Upgrade Project

Figure 2-4a
Proposed Typical Subtransmission Structures



NOTE: OPGW= optical ground wire

2019/D201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE 2024

Cal City Substation 115 kV Upgrade Project

Figure 2-4b
Proposed Typical Subtransmission Structures

2.5.1.2 Guy Wires

When LWS poles are located on angles or corners, guy wires may be used to provide support to the poles. Guy wires may also be used on tangent/suspension poles as field conditions dictate. Guying consists of a guy wire (down guy) that is fastened to a pole and attached to a buried anchor, or when there is not adequate space for the required down guy, a shorter guy pole (stub pole) is typically placed with a down guy and buried anchor in a location that has sufficient room for these facilities.

The need and location of guy wires and anchors for LWS poles would be determined during final engineering and construction on a case-by-case basis. Guying locations along the Project alignments may include LWS pole guy stub lines and anchors or guy stub TSPs (SCE 2024a). See Figure 2-4b for an illustration of a LWS pole guy stub. Guying across a roadway would be avoided where feasible; however, based on preliminary guying locations identified at this time, guying across Rosamond Boulevard, Suckow Road, Gephart Road, Sequoia Boulevard, and various other non-dedicated/unpaved roads may occur. Though not anticipated based on current design, guying across Twenty Mule Team Parkway, California City Boulevard, and Borax Road may also be required pending final engineering. In instances where guying would cross existing roadways, the crossing would be established to ensure that existing roadway access would not be impeded.

2.5.1.3 Conductor/Wire

As part of the Project, approximately 70 circuit-miles of new non-specular 954 SAC Magnolia and/or 954 ACSR Rail conductor would be installed along the lengths of the new Kramer–Cal City and Cal City–Edwards-Holgate 115 kV subtransmission lines. The 954 SAC Magnolia and 954 ACSR Rail conductors would measure 1.124 inches and 1.165 inches in diameter, respectively. OPGW would be installed along the lengths of the new Kramer–Cal City and Cal City–Edwards-Holgate 115 kV subtransmission lines. The OPGW would have a diameter of 0.773 inch. A total of 70 miles of new OPGW would be installed overhead at the top of the proposed new structures.

2.5.1.4 Access Roads

Access roads would have a minimum 14-foot drivable width with 2 feet of shoulder on each side, as determined by the existing land terrain, to accommodate required drainage features. The drivable road area would be further widened by up to 8 feet along curved sections of the access road, creating up to 22 feet of drivable surface for the access road. Access road gradients would be leveled so that sustained grades generally would not exceed 14 percent. Curves would have a minimum radius of 50 feet as measured from the centerline of the drivable road width. Specific site locations may require a wider drivable area to accommodate multi-point turns where 50-foot minimum radii cannot be achieved.

The proposed subtransmission lines are designed to extend primarily along existing roads that would be used for access. However, the condition of existing unpaved roads in the area is unpredictable, and new permanent access roads are anticipated to be required. The Project would require approximately 22 linear miles and 7 linear miles, respectively, of new, 18-foot-wide unpaved access roads along the proposed Kramer–Cal City 115 kV Subtransmission Line and Cal City–Edwards-Holgate 115 kV Subtransmission Line alignments. Additionally, the need has been identified for heavy improvements to existing unpaved access roads along the alignments of the

proposed Kramer–Cal City 115 kV and Cal City–Edwards-Holgate 115 kV subtransmission lines (15 linear miles and 19 linear miles, respectively). The locations of new access roads and heavily improved roads are identified in Appendix A. As design progresses, opportunities to use or improve existing unpaved roadways along the Project alignment may be identified, which would result in reduced construction of new permanent access roads.

2.5.1.5 Distribution Underbuild

The Project would also include underbuilding approximately 7 miles of existing 33 kV distribution circuitry on new subtransmission structures along the Kramer–Cal City 115 kV Subtransmission Line, as well as 2 miles of existing 33 kV and 2 miles of existing 12 kV distribution circuitry on new subtransmission structures along the Cal City–Edwards-Holgate 115 kV Subtransmission Line. This would entail transferring approximately 5 miles of the existing Castle Butte 33 kV Distribution Line and 2 miles of the existing Isner 33 kV Distribution Line to the proposed new Kramer–Cal City 115 kV Subtransmission Line structures. It should be noted that the 5-mile segment of the existing Castle Butte 33 kV Distribution Line is proposed to be renamed the Distribution Pappas 33 kV Line Project (see Section 3.0, Table 3.0-1, Project No. 7). The transfer of approximately 2 miles each of existing Castle Butte 33 kV and Conte 12 kV distribution lines to new Cal City–Edwards-Holgate 115 kV Subtransmission Line structures is also proposed. The distribution underbuild would involve transferring existing distribution circuitry to new subtransmission structures and removing a total of 241 existing distribution wood poles. See Figures 2-14 through 2-16 and Figures 2-21, 2-24, 2-25, and 2-26 for the locations of the proposed distribution wood poles to be removed for the transfer of the distribution circuitry as underbuild; and see Figures 2-4a and 2-4b for illustrations depicting the appearance of subtransmission structures that would include distribution underbuild.

2.5.1.6 Wood Pole Removal and Replacement

Existing distribution poles would be removed along portions of the new Kramer–Cal City and Cal City–Edwards-Holgate 115 kV subtransmission lines where distribution underbuild is proposed. The existing distribution infrastructure (e.g., distribution transformers, conductor) is proposed to be transferred onto the new subtransmission structures. Also, approximately six existing wood poles located east of the Cal City Substation, but within the general disturbance area of the substation expansion, would be replaced in kind with similar wood poles in similar locations. **Table 2-2**, *Existing Distribution Wood Poles to Be Removed or Replaced***,** describes the type and approximate number of existing distribution wood poles that would be removed or replaced.

2.5.1.7 Telecommunications

OPGW would be installed on the new Kramer–Cal City 115 kV Subtransmission Line structures. OPGW and ADSS fiber optic cable would be installed on the proposed new Cal City–Edwards-Holgate 115 kV Subtransmission Line structures. Cable types and approximate lengths for the new infrastructure are as follows:

- Kramer–Cal City 115 kV Subtransmission Line—42 miles of OPGW.
- Cal City–Edwards-Holgate 115 kV Subtransmission Line—28 miles of OPGW.
- Cal City–Edwards-Holgate 115 kV Subtransmission Line—1,600 feet of ADSS fiber optic cable.

TABLE 2-2
EXISTING DISTRIBUTION WOOD POLES TO BE REMOVED OR REPLACED

Pole Type	Number of Poles Removed	Number of Poles Replaced	Approximate Height Above Ground (feet)
New Kramer–Cal City 115 kV Subtransmission Line			
Wood Poles	151	0	35–80
Cal City-Edwards-Holgate 115 kV Subtransmission Line			
Wood Poles	90	0	35–80
Cal City Substation			
Wood Poles	0	6	35–80

NOTE: kV = kilovolt
SOURCE: SCE 2023a.

Telecommunications line appurtenances include splice boxes and risers, among other infrastructure. *Risers* are small-diameter (2- to 5-inch) plastic or galvanized steel conduit attached with strapping to poles or other structures through which fiber optic cable is placed to transition from an overhead to an underground configuration. *Splice boxes* are metal or plastic enclosures, with dimensions approximately 36 inches by 36 inches by 10 inches, that are attached to subtransmission structures with strapping.

2.5.2 Substation Improvements

2.5.2.1 Cal City Substation Improvements

Electrical Improvements

The existing 5-acre Cal City Substation would be expanded by approximately 10 acres. A portion of the expanded substation property would accommodate the expanded substation footprint and security fence line; the remainder of the property would be used for drainage improvements and material staging. Substation improvements would consist of demolition of the existing 33/12 kV substation facility infrastructure and installation of a new five-position 115 kV switchrack, a new five-position 33 kV switchrack, and a new 21-position 12 kV switchrack with vacuum circuit breakers at the Cal City Substation. Twelve new 115 kV sulfur hexafluoride (SF_6) gas or vacuum circuit breakers would be installed. The Project would entail the replacement of existing transformers with six new 28 MVA transformers, four of which would be 115/12 kV and two would be 115/33 kV. The transformers would be installed with engineered spill containment structures.

The new subtransmission and substation facilities would increase the Cal City Substation's load-serving capacity to 168 MVA.[2] Full substation buildout would include the installation of two additional 28 MVA, 115/33 kV transformers, which would increase the substation's capacity to

[2] Based on six transformers, each with a nameplate rating of 28 MVA. When permissible, SCE operates its distribution substation transformers at 130 percent of the nameplate rating during peak-load conditions, which equates to 218.4 MVA. The planned maximum operating limit at the Cal City Substation from 2022 to 2030 is 36.4 MVA.

224 MVA.[3] See **Figure 2-5**, *Proposed Plot Plan for the Cal City Substation Expansion*, for an illustrative drawing of the Cal City Substation improvements.

Control Buildings

As part of the Project, the existing cabinets that house the substation's automation and protection and telecommunications equipment would be demolished. New telecommunications equipment would be installed within the proposed new 35-foot by 16-foot MEER along with substation automation and protection equipment.

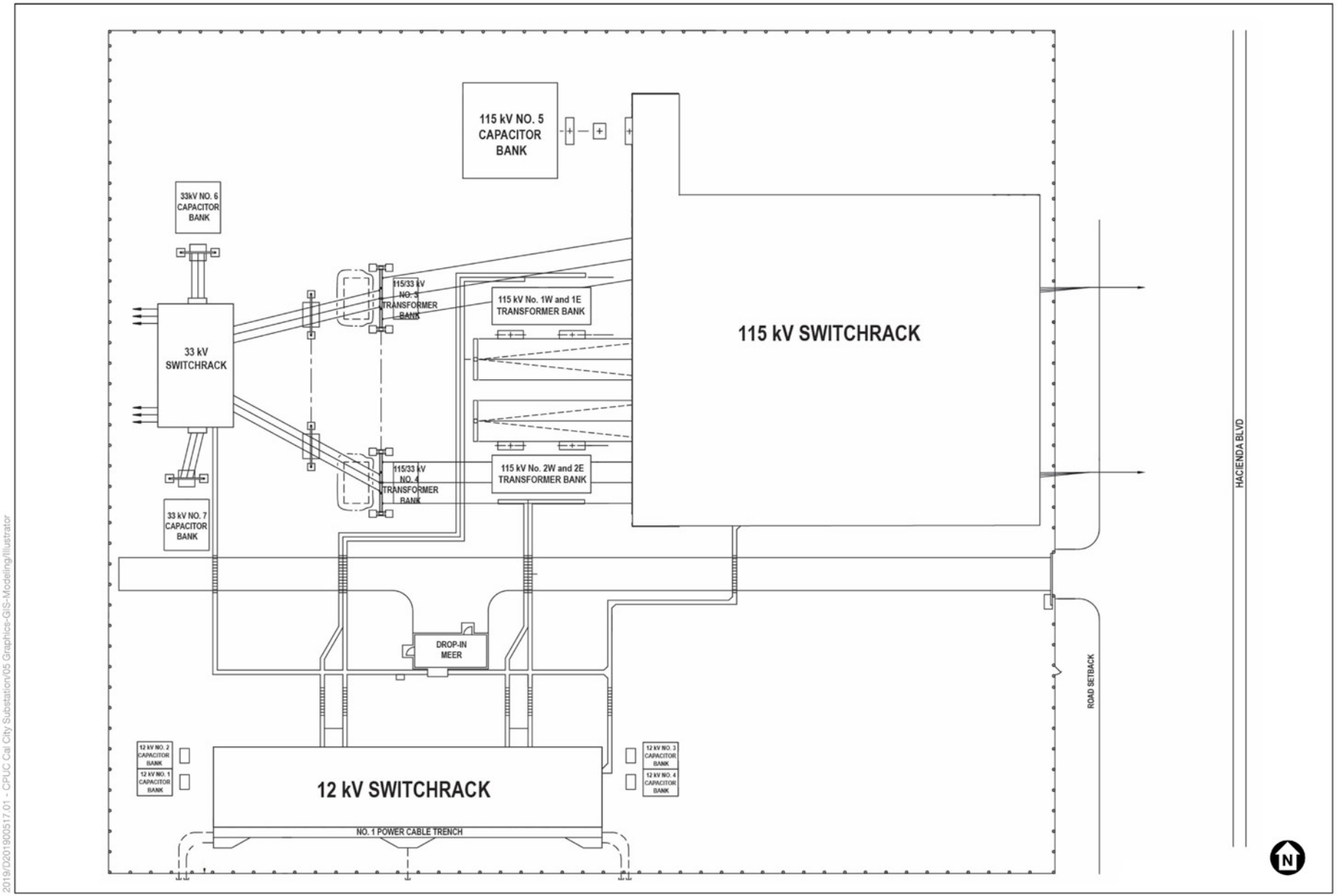
Distribution Getaways

Within the existing and expanded Cal City Substation, 14 new 12 kV distribution getaways and two new 33 kV distribution getaways would be installed in underground conduit systems. Distribution getaways would be constructed to the perimeter of the substation in underground duct banks. See **Figure 2-6**, *Proposed Fencing and Distribution Getaways for Cal City Substation*, for an illustration of the locations for the distribution getaways and associated vaults. The 12 kV distribution getaways shown in Figure 2-6 reflect underground distribution duct banks that could accommodate several 12 kV circuits per each duct bank (SCE 2024a). These duct banks would be installed in appropriate directions based on substation orientation and would terminate in the first distribution vault along the future distribution circuitry close to the proposed substation. The direction of the future circuitry is unknown at this time and would be designed at a later date to respond to customer distribution and location, as well as customer power consumption profiles, and to ensure a cost-effective and efficient design. Electrical distribution circuits from the existing substation to areas of demand would be constructed as needed, with consideration of the location of current load growth, existing electrical distribution facilities in the ENA, and locations of roads and existing SCE ROWs.

Relocation of Battery Energy Storage System Connection

Also, SCE is planning to build and operate a battery energy storage system (BESS) to provide additional short-term loading capacity for the Cal City ENA before the Project comes online. The BESS and the Project have independent utility and these projects are neither connected nor reliant upon each other (SCE 2023b). The BESS is proposed on the adjacent parcel immediately south of the existing Cal City Substation. The BESS is not included in the scope of the Project. However, implementation of the Project would require relocating the connection of the BESS from the existing 12 kV switchrack at the Cal City Substation to the new 12 kV switchrack at the expanded Cal City Substation.

[3] As noted previously, when permissible, SCE operates its distribution substation transformers at 130 percent of the nameplate rating during peak-load conditions. Under full substation buildout, installing two additional 28 MVA, 115/33 kV transformers would increase capacity to a substation total of 291.2 MVA (218.4 MVA + 72.8 MVA) during peak-load conditions.



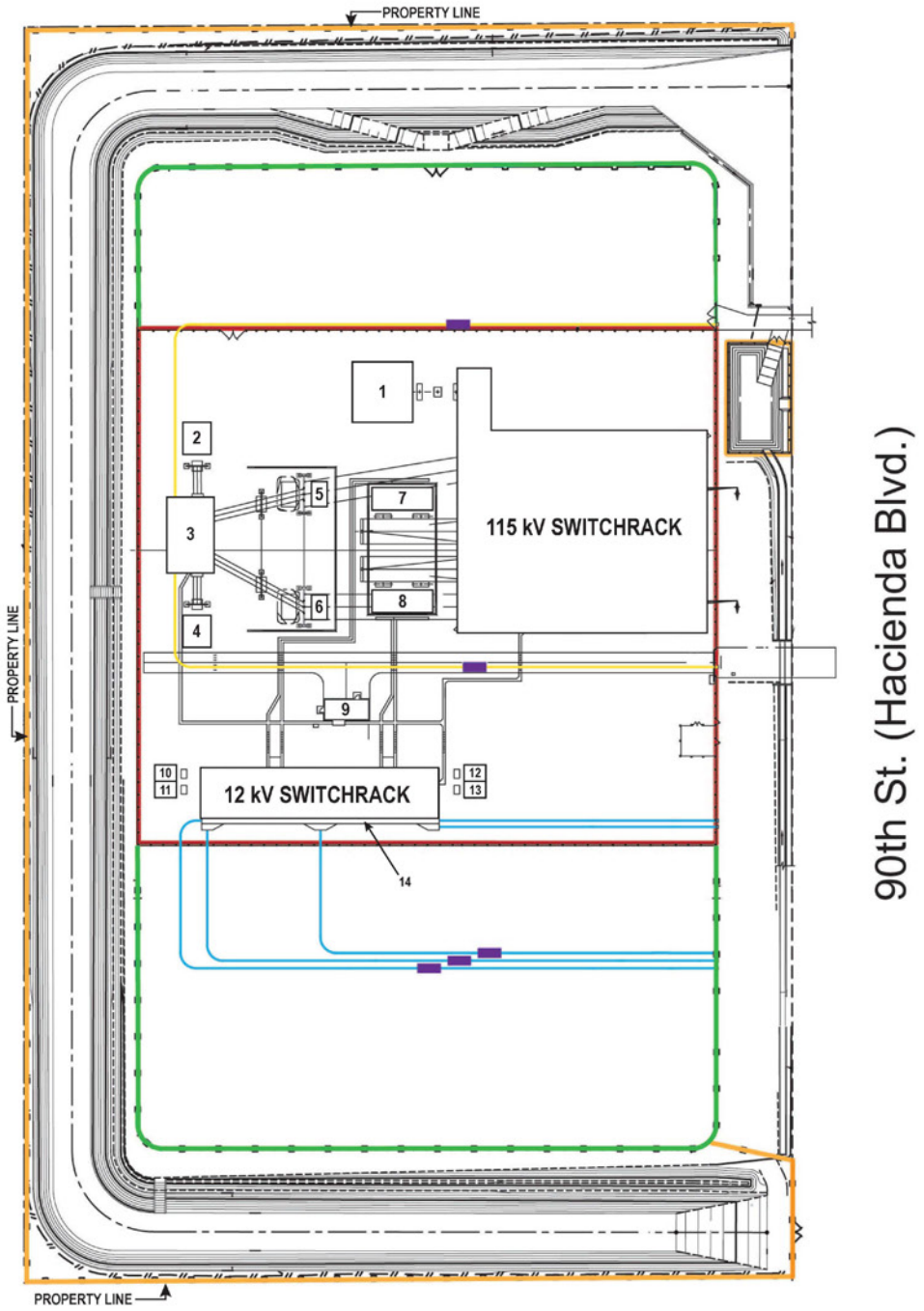
2019/D201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE 2023a

Cal City Substation 115 kV Upgrade Project

Figure 2-5
Proposed Plot Plan for Cal City Substation Expansion

ESA



Additional Substation Components

1. 115 kV NO. 5 CAPACITOR BANK
2. 33 kV NO. 6 CAPACITOR BANK
3. 33 kV SWITCHRACK
4. 33 kV NO. 7 CAPACITOR BANK
5. 115/33 kV NO. 3 TRANSFORMER BANK
6. 115/33 kV NO. 4 TRANSFORMER BANK
7. 115 kV kV NO. 1W and 1E TRANSFORMER BANK
8. 115 kV kV NO. 2W and 2E TRANSFORMER BANK
9. DROP-IN MEER
10. 12 kV NO. 2 CAPACITOR BANK
11. 12 kV NO. 1 CAPACITOR BANK
12. 12 kV NO. 3 CAPACITOR BANK
13. 12 kV NO. 4 CAPACITOR BANK
14. NO. 1 POWER CABLE TRENCH

2019/D201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE 2023b

Cal City Substation 115 kV Upgrade Project

Figure 2-6
Proposed Fencing and Distribution Getaways for Cal City Substation

Telecommunications

The existing Cal City Substation includes a cabinet housing telecommunications equipment, which would be removed as part of the Project. New telecommunications infrastructure would be installed inside the new Cal City Substation MEER to connect to SCE's telecommunications system and would provide Supervisory Control and Data Acquisition, protective relaying, data transmission, and telephone services for the substation.

Driveways

The existing access to the Cal City Substation would continue to be provided via 90th Street (formerly Hacienda Boulevard), which is a dirt road. As part of the Project, three driveways would be installed along 90th Street. The primary driveway entrance would be approximately 24 feet wide and 105 feet long, with 2-foot-wide shoulders. The primary driveway may also have drainage appurtenances and 2-foot by 4-foot culvert crossings with energy dissipators, where necessary. The primary driveway would be paved with asphalt concrete and would extend from the edge of the access road to the substation gate. Two additional driveways would provide access to the new northern and southern parcels. Secondary access to the Cal City Substation would be provided from the new northern parcel. The substation's internal access roads would be paved and maintained by SCE to provide safe access for substation operation and maintenance (O&M) activities. Should road improvements be needed due to wear and major erosion, pavement rehabilitation would be implemented to ensure safe access to the substation.

Fencing

Figure 2-6 shows the proposed location of fencing at the expanded Cal City Substation. As shown, a new 6-foot-high galvanized, chain-link property fence would be installed around the northern, western, and southern perimeters of the approximately 15-acre Cal City Substation property to restrict access. Similar fencing would be installed around the proposed water quality basin just east of the substation facility. In addition, an 8-foot-high galvanized, chain-link fence with an additional approximately 18-inch-tall top guard would be installed inside of the property's perimeter fence around open areas located on the new northern and southern parcels, which may be used for material or equipment staging. Lastly, the proposed Cal City Substation facility would be enclosed on all sides by an 8-foot-high security metal fence system with an additional approximately 18-inch-tall top guard. Top guards may be composed of barbed wire, razor wire, or similar material pending final design.

Gates

As part of the Project, one 28-foot vehicular gate and a 4- to 5-foot personnel pedestrian gate would be installed at the primary entrance to the Cal City Substation property, and two 20-foot vehicular access gates would be installed at the secondary northern and southern parcels.

2.5.2.2 Edwards Substation Improvements

Proposed improvements at the Edwards Substation would consist of installing equipment at one existing 115 kV line position and installing six 115 kV SF_6 gas insulated circuit breakers within the substation. The existing 115 kV switchrack would be expanded to a new configuration and two 115 kV bank positions would be upgraded to double bus–double breaker positions. Additional

protection and telecommunications equipment would also be installed in the MEER at the Edwards Substation.

Telecommunications upgrades at Edwards Substation would involve the installation of new equipment supporting new telecommunications cables. Additional telecommunications equipment would be installed within the existing MEER.

2.5.2.3 Holgate Switchyard Improvements

Proposed improvements at the Holgate Switchyard would consist of installing equipment at one existing 115 kV line position and installing two 115 kV SF_6 gas insulated circuit breakers within the switchyard. Existing protection would be upgraded for four 115 kV lines and the north 115 kV bus. Additional protection and telecommunications equipment would also be installed in the MEER at the Holgate Switchyard.

Telecommunications upgrades at Holgate Switchyard would involve the installation of new equipment supporting new telecommunications cables. Additional telecommunications equipment would be installed within the existing MEER.

2.5.2.4 Kramer Substation Improvements

Proposed improvements at the Kramer Substation would consist of installing equipment at one existing 115 kV line position and installing three 115 kV SF_6 gas insulated circuit breakers within the substation. Two 115 kV bank positions would be upgraded to double bus–double breaker positions. Additional protection and telecommunications equipment would also be installed in the MEER at the Kramer Substation.

Telecommunications upgrades at Kramer Substation would involve the installation of new equipment supporting new telecommunications cables. Additional telecommunications equipment would be installed within the existing communications room at the Kramer Substation.

2.6 Land Ownership, Rights-of-Way, and Easements

2.6.1 Land Ownership

The Project would be located mostly on private lands, with the exceptions described in Sections 2.6.1.1 through 2.6.1.3 below.

2.6.1.1 Federal Land

- Approximately 15.5 miles of the Project alignment are located on lands managed by BLM.
- Approximately 2.7 miles of the Project alignment are located on lands managed by DoD (EAFB).

2.6.1.2 State Land

- Approximately 0.6 mile of the Project alignment is located on land managed by CDFW.
- The Project would be located over state lands where the alignment crosses state highways owned and administered by the California Department of Transportation (Caltrans).

2.6.1.3 County/City Lands

- Approximately 0.06 mile of the Project alignment is located on lands owned by Kern County.
- Approximately 8.8 miles of the Project alignment is located on lands owned by the City of California City.
- The Project would be located over county and city lands where the alignment crosses county- or city-maintained roadways.

Work proposed at the Cal City, Edwards, and Kramer substations and the Holgate Switchyard would be performed on lands owned by SCE whereby SCE has existing land rights.

2.6.2 New or Modified Rights-of-Way or Easements

2.6.2.1 New Permanent or Modified Rights-of-Way or Easements

SCE would acquire the necessary land rights along the length of the Project alignments where new facilities would be installed. The new ROW and/or easements would range in width from 30 to 60 feet. The specific width of necessary easements and/or ROW along the Project alignments would be refined during the final engineering process.

2.6.2.2 Acquisition of New Permanent or Modified Rights-of-Way or Easements

SCE would acquire land rights to support the Project, as required. The land rights to be acquired would be a combination of new permanent easement rights on private property, franchise, permits, grants, or licenses on public lands along with modified/upgraded ROWs. SCE would acquire the permanent easement rights through negotiations with private landowners. New permanent or modified ROWs may also be acquired from the applicable public agency through that agency's designated process. SCE would also utilize its franchise rights, if applicable. The total number of land rights to be acquired would be finalized during final engineering. Pursuant to California Public Utilities Code Section 612, SCE also has the ability to implement eminent domain to acquire any necessary land rights for construction of the Project.

2.7 Construction

The following subsections describe the proposed construction activities for the Project.

2.7.1 Access

The proposed subtransmission access road network would consist of unpaved and paved roads accessed from public and private roads located on public, private, and government lands. These access roads would consist of a network of through roads and spur roads that would be used to access subtransmission facility locations during construction. Access to the subtransmission line ROWs for construction activities and future O&M activities associated with the Project would be provided by this network of roads. The following sections describe the construction activities associated with the construction of these roads and the proposed dimensions of access roads.

Access roads would typically have turnaround areas to provide safe ingress/egress for vehicles accessing the structure location during construction. Access road turnaround areas are commonly used for the dual purposes of providing structure access and accommodating a crane pad setup area for construction activities. The Project would utilize a combination of existing roads and new roadways to access proposed subtransmission line work areas. Rehabilitation of access roadways and construction and maintenance of new roadways would also occur.

2.7.1.1 Existing Access Roads

During Project construction, crews would utilize existing public roads and existing SCE access roads to the maximum extent feasible; however, the Project would require improvements of existing access roads along both the proposed Kramer–Cal City and Cal City–Edwards-Holgate 115 kV subtransmission lines.

Existing Roads that Require No Rehabilitation

The Project is designed primarily along existing roads that would be used for access. Approximately 20 miles of existing SCE-maintained dirt access and spur roads would potentially be used during Project construction. Existing access roads are located along the Kramer-Inyokern-Randsburg No. 1 and No. 3 115 kV subtransmission lines. The widths of existing access roadways that would be used during Project construction are variable but range generally from 8 to 25 feet, and these roads would account for approximately 28 acres of existing permanent disturbance.

Approximately 35 miles of existing unpaved public or unpaved private (non-SCE-maintained) roads are adjacent and parallel to the Project alignments, thus allowing work to be performed from the roadway. The widths of these roads vary, but they are generally 10–50 feet wide; these roads would account for approximately 111 acres of existing permanent disturbance. In addition, 7.4 miles of existing paved public roads are located adjacent and parallel to the Project alignment, thus allowing work to be performed from the roadways. The widths of these roads vary, but they are generally 20–38 feet wide; these roads would account for approximately 24 acres of existing permanent disturbance.

Existing Roads that Require Rehabilitation

Approximately 20 miles of existing access roads are proposed for rehabilitation, which would include regrading and repair of the existing roadbed. These roads would be cleared of vegetation; blade-graded to remove potholes, ruts, and other surface irregularities; and re-compacted to provide a smooth and dense riding surface capable of supporting heavy construction equipment. As part of this rehabilitation, vegetation within the existing road prism may be trimmed and/or removed to prevent it from intruding into the roadway. In some locations, roadwork would include placement of crushed rock base and/or temporary plates or mats within the existing road prism to compensate for soft soils. Plating or matting would be removed after construction. Existing unpaved roads may require additional upgrades such as protection (e.g., soil cover, steel plates) for existing underground utilities.

Before the start of construction, some of the existing access and spur roads may require more extensive rehabilitation; however, the ultimate extent and scope of road rehabilitation would be

determined as design of the Project progresses. The types of more-extensive rehabilitation that may be required could include:

- Widening of the existing roadbed at curves and other locations.
- Installation of new or repair of existing drainage structures such as wet crossings, water bars, overside drains, and pipe culverts to allow for construction traffic usage, and to prevent road damage caused by uncontrolled water flow.
- Repair and stabilization of slides, washouts, and other slope failures by installing retaining walls or other means necessary to prevent future failures. The type of structure to be used would be based on specific site conditions.
- Where existing access or spur roads cross culverted waterways, placement of temporary plating or matting over the roadway to protect the culverts and to support the movement of heavy construction equipment. Plating or matting may also be placed in other locations depending on surface conditions at the time of construction.

2.7.1.2 New Access Roads

Proposed new access roads would be constructed for use during construction and O&M activities; therefore, these roads are considered permanent features for the purpose of this environmental analysis. New access roads would be constructed in a manner consistent with current SCE construction and O&M safety practices. Typical construction activities for new access roads generally are similar to those described for the rehabilitation of existing unpaved roads, but new access roads may also include the following additional construction requirements that depend upon the existing land terrain.

- *Existing relatively flat terrain, approximately 0–4 percent grade:* Construction activities would generally be similar to rehabilitation activities for existing unpaved roads. Additional activities such as clearing, grubbing (i.e., vegetation removal), and construction of drainage improvements (e.g., wet crossings, water bars, culverts) may also be required. Detailed information regarding locations requiring drainage improvements would be provided during final engineering.
- *Existing rolling terrain, approximately 5–12 percent grade:* Construction activities would be similar to those required for flat terrain; however, additional activities may be required, such as cut and fill in excess of 2 feet in depth, benched grading, drainage improvements (e.g., v-ditches, downdrains, and energy dissipaters), retaining walls, and slope stability improvements such as geogrid reinforcement. The extent of retaining walls and slope stability improvements that would be required for the Project would be determined during final engineering (see Section 2.7.3.7, *Retaining Walls*, for more details). Detailed information regarding locations requiring cut and fill, benched grading, and/or drainage improvements would be provided during final engineering.
- *Existing mountainous terrain, over 12 percent grade:* Construction activities would include activities similar to those for rolling terrain construction. In addition, significant cut and fill depths, benched grading, drainage improvements, and slope stability improvements would likely be required. Detailed information regarding locations requiring cut and fill, benched grading, and/or drainage improvements would be determined during final engineering.

Slope stability improvements that may be required for new access road construction include mechanically stabilized systems along with drainage improvements (e.g., v-ditches, downdrains, energy dissipaters). The extent of slope stability improvements would be determined during final engineering.

2.7.1.3 Overland Access Routes

Where existing spur or access roads to a construction work area are not present, and where surface conditions are amenable, that location may be accessed overland. Where overland travel is feasible, vegetation would be trimmed while leaving the root structure intact, or vehicles would drive overland over the extant vegetation. In some locations, temporary matting may be placed on the surface to facilitate access to a work location. No blading, grading, or gravel placement would occur on overland access routes.

Preliminary design for the Project has identified 12 overland access routes. These routes have been identified to access proposed temporary construction work areas where no existing spur or access road exists. Overland access routes are anticipated to be approximately 10 feet wide and vary in length, ranging from 7 to 144 linear feet. Overland access routes are shown in Appendix A.

2.7.1.4 Watercourse Crossings

Perennial, intermittent, and ephemeral watercourses are crossed at grade by existing SCE and public access roads. Watercourses are generally crossed at grade or are culverted; larger watercourses crossed by improved roads or human-made watercourses (e.g., canals) are bridged or culverted. Some watercourse crossings would require permanent improvements. SCE has identified 15 hardened wet-crossing locations along access roads that follow the Project alignment. Depending on potential wet-crossing designs, these permanent structures would be installed in a manner similar to retaining walls, as described in Section 2.7.3.7 later in this chapter. Hardened wet crossings would be lined by approximately 10-foot-wide riprap upstream and downstream of the crossing. The locations of permanent wet crossings are identified in Appendix A.

Where existing access or spur roads cross a culverted watercourse, temporary steel plating or matting may be laid over the roadway to protect the culverts and to support the movement of heavy construction equipment. Steel plating or matting may also be placed where access roads cross watercourses at grade, depending on surface conditions at the time of construction. The need to place temporary steel plating or matting would be determined immediately before construction, as the locations, morphologies, and physical conditions of the ephemeral drainages crossed by the access road network are subject to change over time.

2.7.1.5 Helicopter Access

Types and Quantities

Light- and medium-duty helicopters would be used to support construction activities. The Project would not include the use of heavy-duty helicopters. Helicopter use supporting construction may

include but would not be limited to areas where access is limited (e.g., lack of a suitable access road; limited construction area to facilitate on-site structure assembly; environmental constraints to accessing the Project area using standard construction vehicles and equipment) or where system outage constraints are a factor.

Activities by light-duty helicopters (e.g., Hughes 500 or similar) may include transportation of construction workers, delivery of equipment and materials to construction work area, hardware installation, marker ball installation (if applicable), and conductor and cable stringing operations. Activities by medium-duty helicopters (e.g., Kaman K-Max or similar) may include delivery of equipment and materials to structure sites, installation of poles and structures, and removal of existing structures, if necessary.

Takeoff and Landing Areas

Helicopter takeoff and landing areas typically include helicopter landing zones and staging areas, and public and private airports or airstrips. SCE proposes to use the 17 staging areas listed in **Table 2-3**, *Potential Construction Staging Areas*, as helicopter takeoff and landing areas for the Project. Helicopter operation crews and fueling and maintenance trucks may be based in the staging areas or at public or and private airports or airstrips in the Project vicinity (see Appendix A for all staging areas, which may serve as helicopter landing zone locations). Specifically, helicopters would most likely be based out of California City Municipal Airport, approximately 2.2 miles west of the Cal City Substation, and Mojave Air & Space Port, approximately 11.3 miles southwest of the Cal City Substation. In addition to staging areas, helicopters may land on sited helicopter landing zones on existing or proposed access roads or within SCE ROW as needed.

Refueling Procedures and Locations

Helicopter refueling would generally occur off-site at the local airports identified above and at the staging areas listed in Table 2-3; in some instances, refueling could occur at locations along the Project alignment that are not identified as staging areas, such as helicopter landing zones that may be sited within access roads and/or SCE ROWs (see Appendix A for all helicopter landing zone locations). Best Management Practice (BMP) WM-4, *Spill Prevention and Control*, and BMP NS-9, *Vehicle and Equipment Fueling*, would be implemented during refueling at all locations where commercial refueling services are not available. These BMPs are described in more detail in Sections 2.12.2.2 and 2.12.2.3.

Flight Paths, Payloads, and Hours and Durations of Operation

Flight paths would be determined immediately before construction by the helicopter contractor. Flight paths would be filed with the appropriate authorities as needed. Helicopter payloads would vary by construction activity. For example, during conductor and cable installation, the payload would consist of a lightweight sock line; during structure installation and removal, the payload would comprise structures or sections of structures being removed or being installed, and human external cargo (i.e., construction workers), which could be transported using a “long line” attached to the helicopter.

TABLE 2-3
POTENTIAL CONSTRUCTION STAGING AREAS

Staging Area Number	Location	Condition	Area (approx. acres)
1-1	U.S. 395	Disturbed	3.6
1-2	Lorraine Avenue	Disturbed	8.4
1-3	Suckow Road	Disturbed	6.4
1-4*	140th Street	Disturbed	10.0
1-5	140th Street	Undisturbed	10.0
1-6*	Twenty Mule Team Parkway	Disturbed	5.0
1-7	U.S. 395	Undisturbed	4.7
1-8	U.S. 395	Undisturbed	2.6
1-9	U.S. 395	Undisturbed	3.4
1-10*	U.S. 395	Disturbed	4.9
1-11	U.S. 395	Undisturbed	4.1
1-12	U.S. 395	Undisturbed	1.6
1-13	U.S. 395	Undisturbed	5.0
1-14	U.S. 395	Undisturbed	4.3
1-15*	90th Street	Undisturbed	5.1
1-16*	90th Street	Undisturbed	5.1
1-17*	90th Street	Undisturbed	4.2

NOTES: approx. = approximate; U.S. = U.S. Highway

* Denotes preferred staging area.

Staging Area 1-4 would include an up to 10-acre staging area within an approximately 86-acre potential area at the southeast corner of 140th Street and Suckow Road. Staging Area 1-5 would include an up to 10-acre staging area within an approximately 65.7-acre area at the northeast corner of 140th Street and Suckow Road.

SOURCE: SCE 2023a.

Table 2-7, *Anticipated Subtransmission Construction Equipment and Workforce*, presented in Section 2.7.15.3 later in this chapter, lists the hours and duration of operation for helicopter use during construction. When operated, helicopters would be flown only during daytime hours (i.e., the period from 30 minutes before sunrise to 30 minutes after sunset), with the exception of emergency occurrences.

Safety Procedures or Requirements

As necessary, SCE or its construction contractor would develop a Helicopter Plan and would coordinate development of a Congested Area Plan pursuant to Code of Federal Regulations (CFR) Title 14, Part 133.33(d) with the FAA Flight Standards district offices in Van Nuys and Riverside, which have jurisdiction over the Project area.

2.7.2 Staging Areas

One or more construction staging areas would be established and used as the reporting location(s) for workers, vehicle and equipment parking, helicopter landing zones, and material storage areas. SCE anticipates using one or more of the locations listed in Table 2-3 for construction staging.

Staging areas are shown in Appendix A. SCE has identified six preferred staging areas for use during Project construction. These preferred staging areas are denoted with an asterisk in Table 2-3. However, each staging area described in the table could be used for the Project. The approximate area of each identified staging area is presented in Table 2-3 and their locations are depicted in Appendix A.

2.7.2.1 Staging Area Site Preparation

Preparation of the staging areas would include installation of temporary perimeter fencing. Depending on existing ground conditions at the site, grubbing (i.e., vegetation removal) and/or minor grading may be required to provide a flat and dense surface for the application of gravel or crushed rock. No new access roads would be constructed to access any of the staging areas. Land that may be disturbed at the staging area would be returned to preconstruction conditions after the completion of Project construction, unless otherwise agreed to by the property owner.

2.7.2.2 Staging Area Uses

Staging areas would be used as a reporting location for workers, and for vehicle and equipment parking, helicopter landing zones, and material storage areas. Materials commonly stored at the staging areas would include but not be limited to construction trailers, a generator, construction equipment, portable worker sanitation facilities, steel bundles, steel/wood poles, conductor/cable reels, hardware, insulators, crossarms, signage, consumables (such as fuel and filler compound), waste materials for salvaging, recycling, or disposal, and storm water pollution prevention plan (SWPPP) BMP materials such as straw wattles, gravel bags, and silt fences.

Most of the materials associated with the construction efforts would be delivered by truck to designated staging areas, while some materials may be delivered directly to the temporary construction areas described in Section 2.7.3, *Work Areas*. The staging areas may also have construction trailers for supervisory and clerical personnel. Normal maintenance and refueling of construction equipment would also be conducted at these staging areas. All refueling, which may include helicopters, and storage of fuels would occur in accordance with the site-specific SWPPP and all applicable laws and regulations.

2.7.2.3 Staging Area Security

The staging areas would be secured through the installation of temporary perimeter fencing and one or more gates; typically, chain-link fencing is used. In some instances, existing fencing may be present at the staging area location; in these instances, temporary perimeter fencing would not be installed. Other security measures that may be employed at staging areas could include cameras, privacy screening, and security personnel.

2.7.2.4 Staging Area Power

Temporary power needs would be determined based on the type of equipment/facilities being used at the staging areas. If existing distribution facilities are available, a temporary service meter may be used for electrical power at one or more of the staging areas. If it is determined that temporary power is not needed or available at the staging areas full time, a portable generator may be used intermittently for electrical power at one or more of the staging areas.

Should SCE determine that power is needed at staging area sites, temporary power or other utility lines may be installed at one or more staging areas to support construction activities. The process for installing temporary power would be determined by SCE or another utility service provider based on the staging area's utility service needs, but would generally include the installation of a temporary meter on a temporary structure, the temporary installation of one or more wood poles (to be installed in the same manner as guard structure poles), and the installation of temporary electrical cable from the meter to the load source(s) at the staging area(s). The temporary power lines and poles would be removed after construction of the Project.

2.7.2.5 Staging Area Temporary Lighting

Staging areas may be lit for security or for staging area operations; this lighting would be directed internally and on-site. Should temporary lighting be needed at staging areas, portable light standards would be placed along the outside of the staging area, as necessary. The sources of illumination on the light standards would be shielded, resulting in light being directed downward and inward (toward the staging area). To the extent feasible, light standards would be positioned so that illumination is directed away from the nearest residence(s).

2.7.2.6 Staging Area Grading Activities and/or Slope Stabilization

No slope stabilization or extensive grading activities would be performed at any staging area; the identified staging areas are relatively level, and thus grading activities would be focused on leveling the surface. Because generally level areas have been selected for staging areas, no slope stabilization is proposed.

2.7.3 Work Areas

Construction of the Project would be performed in the construction work areas described in Sections 2.7.3.1 through 2.7.3.8 below. The temporary and permanent disturbance that would be associated with the work areas is discussed in Section 2.7.3.9.

2.7.3.1 Helicopter Landing Zones and Touchdown Areas

Helicopter touchdown areas would be located within wire-pull areas and utilized for touching down during conductor cable installation activities, as opposed to helicopter landing zones that would be within staging areas and would be utilized for activities such as re-fueling and picking up supplies. It is not anticipated that touchdown areas would be used for fueling (SCE 2024a). The following activities may be performed at any given helicopter landing zone:

- Dropping off or picking up construction crew members.
- Dropping off or picking up air-portable construction equipment.
- Assembling pole sections (installing crossarms, hardware, etc., on a section of pole).
- Lifting pole sections using a helicopter.
- Depositing sections of removed structures.
- Dropping off or picking up conductor sock line.

- Dropping off or picking up conductor pull rope.
- Dropping off or picking up conductor.
- Loading and unloading poles, structure sections, and other material to and from trucks.
- Fueling helicopters.

2.7.3.2 Vehicle and Equipment Parking, Passing, or Turnaround Areas

Vehicles and construction equipment would be parked during the day and overnight at staging areas, pull-and-tension/stringing sites, and other construction work areas along the Project alignment. During work on a structure, vehicles and construction equipment would be parked during construction hours at structure work areas and guard structures, and on adjacent access or spur roads. Vehicles and construction equipment would be parked at helicopter landing zones and on adjacent access or spur roads during helicopter operations from a particular helicopter landing zone. Passing and turnaround areas would be available along the Project's access and spur road network.

2.7.3.3 Temporary Work Areas for Structure Installation, Modification, or Removal

Temporary work areas (interchangeably referred to herein as "construction work areas") would contain crew activities and the locations where Project-related equipment and/or materials would be placed at or near each structure. Among the activities that may be performed at any given temporary work area are the following:

- Install TSPs.
- Install LWS poles.
- Install LWS H-frames.
- Remove existing structures (wood poles).
- Modify existing structures (wood poles).
- Install conductor and cable on existing, replacement, or new structures.
- Splice conductor.
- Complete substation modifications.
- Remove or trim vegetation.
- Conduct surface grading, leveling, and/or compaction.
- Install benching.

2.7.3.4 Excavations and Associated Equipment Work Areas

The Project would include excavations to install LWS poles, install TSP foundations, install guy anchors, remove existing wood poles, expand the Cal City Substation, install underground

distribution conductor and telecommunications cable duct banks, and install other distribution and telecommunications structures. Excavations to install underground distribution conductor and telecommunications cable would require an equipment work area extending approximately 10 feet on either side of the conductor/cable route. If needed, excavations may be required in staging areas for the installation of temporary distribution poles to deliver temporary power during construction.

2.7.3.5 Temporary Guard Structure Work Areas

Temporary work areas would be needed for guard structures that would typically be installed at aboveground transportation, flood control, and utility crossings before conductor or cable installation activities. These structures are designed to stop the movement of a conductor or cable should it momentarily drop below a conventional stringing height. Approximately 28 guard structures are proposed along the proposed subtransmission line routes. The locations of temporary guard structure work areas are identified in Appendix A. Additional guard structures may be required based on the actual conditions present during construction (e.g., new roads or new critical access points). Each guard structure would require a work area that would be approximately 50 feet by 150 feet.

2.7.3.6 Pull-and-Tension/Stringing Sites

Pull-and-tension/stringing sites are those locations where the equipment necessary for installation of conductor and cable would be set up and operated. The pull-and-tension/stringing sites for the Project would be temporary.

Wire pull is the term used to describe the length of any given continuous wire installation process between two selected points along the line. Wire pulls are selected based on a variety of factors, including the availability of dead-end structures, conductor size, geometry of the line as affected by points of inflection, terrain, and suitability of stringing and splicing equipment setup locations. On relatively straight alignments, typical wire pulls occur approximately every 12,000 feet on flat terrain. When the line route alignment contains multiple deflections or is situated in rugged terrain, the length of the wire pull is typically diminished.

Generally, pull-and-tension/stringing sites would be in a direct line with the direction of the overhead conductors and would be established at a distance equal to approximately three times the height of the adjacent structure. Pull-and-tension/stringing sites would require an approximately 300-foot by 200-foot work area. Approximately 93 pull-and-tension/stringing sites would be required along the Project alignment. Potential locations of proposed pull-and-tension/stringing sites are identified in Appendix A.

Each conductor or cable installation operation consists of a puller setup positioned in a pull-and-tension/stringing site located at one end of a wire pull, and a tensioner setup with wire reel stand truck positioned in a pull-and-tension/stringing site at the other end of a wire pull. Pull-and-tension/stringing sites may also be used for splicing and field snubbing of the conductors. Field snubs (i.e., anchoring and dead-end hardware) would be temporarily installed to sag conductor wire to the correct tension at locations where stringing equipment cannot be positioned in back of a dead-end structure. See Section 2.7.5.2, *Conductor and Cable Installation Process*, for additional details.

2.7.3.7 Retaining Walls

Retaining walls and slope stability improvement work areas may also be required for access road and/or subtransmission line components, such as during construction of new access roads, widening of existing access roads, repair of earthen slopes damaged by erosion, grading with significant cut-and-fill depths, and benched grading activities. Rehabilitating and constructing access and spur roads and repairing and stabilizing slides, washouts, and other slope failures may include the installation of retaining walls or other means necessary to prevent future failures. It is typically preferable to use cut-and-fill slopes configured at slope ratios that are stable without using reinforcement. However, because of ROW limitations, the need to avoid sensitive resources, and existing topography, the Project may require reinforced earthen slopes, permanent erosion control, or an earth-retaining system. Potential retaining wall locations are based on planning-level assumptions; the ultimate number of retaining wall structures and locations would be identified during final engineering.

2.7.3.8 Guying

Typical guying locations would require an approximately 100-foot by 100-foot work area if located at alignment corners, or a 100-foot by 60-foot work area would be required if located along the alignment; guying across a roadway would require location-specific work area dimensions. Proposed guying locations are identified in Appendix A.

2.7.3.9 Work Area Disturbance

Table 2-4, *Approximate Work Area Disturbance Areas*, identifies the temporary and permanent disturbance at each work area (in acres), and the total area of temporary and permanent disturbance for the entire Project (in acres).

2.7.4 Site Preparation

Site preparation would consist of initial activities in advance of ground disturbance. Before the start of structure installation activities, the location of each structure to be installed would be surveyed and staked. Conventional surveying techniques and equipment would be used. Site preparation would also include identification and relocation of utilities, installation of temporary power, and vegetation clearing, described in additional detail below.

2.7.4.1 Utility Identification and Relocation

SCE and/or its construction contractor would identify, mark, and locate existing subsurface utilities before the start of activities that require excavation. This would entail contacting DigAlert (or a similar service), conducting visual observations, conducting exploratory excavations (i.e., potholing), and/or using buried line–locating equipment.

Some existing underground utilities may be relocated as part of the Project. Existing third-party overhead utilities installed on poles proposed for modification or removal as part of the Project may be transferred to replacement poles or left in place on existing poles.

TABLE 2-4
APPROXIMATE WORK AREA DISTURBANCE AREAS

Work Area Type	Approximate Number/ Distance	Approximate Preferred Size (feet)[a]	Approximate Disturbance, Temporary (acres)[b]	Approximate Disturbance, Permanent (acres)[b]
Staging Areas[c]	17	Varies	215.7	0
Helicopter Landing Zones and Touchdown Areas[d]	17	Varies	0	0
Access Roads/Overland Travel	64.1 miles	Varies	122.9	192.1
Heavily Improved Access Road	34.3 miles	Varies	67.4	101.5
New Design Road	28.9 miles	Varies	53.9	87.6
Overland Travel Path	0.1 mile	Varies	0.1	0
Other[e]	0.8 mile	Varies	1.5	3.0
Railroad, Bridge, or Watercourse Crossings[f]	15	Varies	0	0
Temporary/Permanent Work Areas for Facility Installation, Modification, or Removal	1,433	Varies	272.2	10.3
Installation of TSP or LWS Pole[g]	1,148	100 x 100 (LWS) 200 x 200 (TSP)	261.7	8.0
Permanent O&M Structure Pads	32	Varies	0	2.3
Removal/Modification of Existing Wood Pole	253	100 x 100	10.5	0
Cal City Substation General Disturbance[h]	1	1,100 x 760	4.6	4.3
Temporary Guard Structures	28	50 x 150	2.8	0
Cable/Conductor Pull-and-Tension/Stringing Sites	93	300 x 200	74.7	0
Conductor/Cable Splicing	10–20	75 x 75	1.9	0
Total Temporary/Permanent Disturbance Area	–	–	694.9	206.7

NOTES:LWS = lightweight steel; O&M = operation and maintenance; TSP = tubular steel pole

a. The dimensions listed above are proposed for construction efficiency; actual dimensions may vary depending on Project constraints.
b. Acreages provided are calculated based on current Project design. Where both temporary and permanent disturbance are anticipated, temporary disturbance area is not inclusive of permanent disturbance area. Where Project component disturbance areas would overlap (e.g., access roads and temporary/permanent work areas), disturbance was assigned to just one Project component to avoid accounting for disturbance more than once. Therefore, total temporary/permanent disturbance area represents the approximate total Project footprint.
c. Staging Area 1-4 and Staging Area 1-5, if selected, would only require up to 10 acres each of disturbance. However, because the exact location of this disturbance area within each potential staging area footprint is not known at this time, temporary disturbance accounts for potential disturbance of the entire staging area.
d. Disturbance acreage for helicopter landing zones and touchdown areas located within staging areas are included in staging areas disturbance totals.
e. "Other" includes existing disturbed area in which no access road grading is proposed, but temporary or permanent disturbance is anticipated because of ongoing use during Project construction and operation.
f. Includes approximately 15 hardened wet crossings along existing and/or proposed access roads. Disturbance associated with these crossings is captured under access road disturbance area.
g. Permanent impacts reflect pole locations with a 10-foot permanent disturbance buffer. Temporary impacts reflect limits of grading at pole locations, excluding access road grading and permanent disturbance areas.
h. Temporary impacts reflect general disturbance area, excluding proposed staging areas and structure installation workspaces. Permanent impacts reflect expansion of the Cal City Substation's security fence line.

SOURCE: SCE 2023a

2.7.4.2 Vegetation Clearing

Vegetation and trees would be trimmed or removed as needed at or adjacent to construction work areas to facilitate the safe construction of the Project and to reduce fire hazards associated with construction activities. Only the minimum amount of vegetation necessary for the safe construction and operation of structures and facilities would be removed. Where feasible, construction work areas have been preferentially selected to minimize the trimming or removal of vegetation and/or trees. During road rehabilitation and construction activities, vegetation would be trimmed and/or removed within the access or spur road prism, as necessary. Where overland travel is feasible, vegetation would be trimmed while leaving the root structure intact, or vehicles would drive over the extant vegetation.

Vegetation removal would consist of "brushing" (i.e., shrubs and other low-lying vegetation within the construction work area would be trimmed and/or removed). Vegetation removal would generally be accomplished using a mower-type attachment mounted to a tractor; in some instances, areas would be brushed by individuals using heavy-duty "weed whacker" type equipment. Vegetation growing on the road surface would be removed by a motor grader during the blade-grading of roads to remove potholes, ruts, and other surface irregularities. Where overland travel is feasible, vegetation would be trimmed while leaving the root structure intact, or vehicles would drive over the extant vegetation.

2.7.4.3 Tree Trimming and Removal

Trees or portions of trees that encroach upon the access and spur road prism or on an overland travel route may be removed to facilitate the safe movement of construction equipment. Similarly, trees or portions of trees within or adjacent to staging areas and temporary work areas may be trimmed and/or removed; staging areas have been preferentially selected to minimize the trimming or removal of trees. Protected western Joshua trees (*Yucca brevifolia* var. *brevifolia*) occur in the vicinity of the Project alignment. Based on surveys completed in support of the Project, six western Joshua trees are present in areas that may be temporarily disturbed by the Project. Additional information including potentially protected trees found along the Project alignment is available in Section 3.4, *Biological Resources*.

Tree removal or trimming, if necessary, would be accomplished using such equipment as a dump truck, pickup truck, chipper, stump grinder, and bucket truck. Hand tools used during tree removal would include chainsaws and/or hand saws.

2.7.4.4 Stabilization of Work Areas

Work areas would be stabilized utilizing BMPs described in the SWPPP developed and implemented for the Project. Typical BMPs that may be used for work area stabilization are presented in Section 2.12.2, *Best Management Practices*.

During improvements of access and spur roads and repair and stabilization of slides, washouts, and other slope failures, installation of retaining walls or other means necessary to prevent future failures may be required. The type of structure to be used would be based on specific site conditions. See Section 2.7.3.7, *Retaining Walls*, for more details. Erecting the structures may

also require establishing a permanent O&M structure pad for stabilization where terrain is steeper than 5 percent slope (see Section 2.7.5.1, *Pole and H-Frame Installation*). In addition, benching[4] of temporary work areas and pull-and-tension/stringing sites may be required to provide access for foundation construction, assembly, structure erection, and wire stringing activities during line construction. Benching may also be used as needed to help ensure the safety of personnel during construction activities. SCE has not identified the need for benching as part of the Project; however, because the physical environment in which the Project would be constructed is dynamic, this description of benching is included should the need for benching arise during construction.

2.7.4.5 Grading

Staging areas and construction work areas could undergo minor grading and/or grubbing (i.e., vegetation removal) as required to provide a reasonably level, vegetation-free surface. Staging areas and construction work areas would be graded so that water would run toward the direction of the natural drainage. In addition, drainage would be designed to prevent ponding and erosive water flows that could damage new structure foundations or poles. SCE would delineate temporary work areas adjacent to each structure location at which work would occur as part of the Project where the terrain is less than five percent slope. The graded area would be compacted to at least 90 percent relative density and would be capable of supporting heavy vehicles.

Earthmoving or Substantial Grading Activities

Earth movement, grading, and clearing and grubbing are anticipated across all temporary and permanent disturbance areas along the proposed subtransmission line alignments, including temporary work areas, widening of existing access roads, and blading of proposed new access roads. Additionally, more substantial grading activities may be required for construction of new access roads and permanent O&M structure pads. Though not currently proposed, removal and re-compaction of all Project disturbance areas may occur if recommended by geotechnical engineering studies that would be conducted for the Project. In addition, earthmoving and grading activities would occur at the Cal City Substation. All soil at the Cal City Substation would be balanced on-site such that no import or export of material would be required.

Estimated Volumes of Earthwork

Table 2-5, *Proposed Earthwork Volumes*, summarizes the estimated detailed earthwork volumes associated with the Project, based on current design and engineering. Cut and fill volumes have been provided for Project components for which earthwork estimates have been prepared, including grading, blading, and removing/recompacting of new/existing access roads and permanent O&M structure pads. Excess cut material is anticipated to be balanced within the Project site; organic material removed during clearing and grubbing activities may be hauled off-site as needed. Grading quantities for construction work areas and blading of new and existing access roads have not been prepared at this time, as all soil from such activities is anticipated to be balanced on-site. Approximately 592,000 cubic yards (cy) of material would be moved (cut

[4] *Benching* is a technique in which an earthmoving vehicle excavates a terraced access to structure locations in extremely steep and rugged terrain.

and fill during earthwork operations). Import/export of material is not anticipated at this time but may be necessary pending final engineering or if recommended by a geotechnical engineer because of site-specific soil conditions (SCE 2024a).

TABLE 2-5
PROPOSED EARTHWORK VOLUMES

Project Component	Estimated Cut (cubic yards)	Estimated Fill (cubic yards)	Estimated Import/Export (cubic yards)[a]
Proposed Kramer–Cal City 115 kV Subtransmission Line			
Earthwork (New Access Road and O&M Structure Pads)	154,000	154,000	0
Proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line			
Earthwork (New Access Road and O&M Structure Pads)	108,000	108,000	0
Cal City Substation			
Earthwork	34,000	34,000	0

NOTES: kV = kilovolt; O&M = operation and maintenance

a. For all components of the Cal City Substation 115 kV Upgrade Project, soil is proposed to be balanced on-site, aside from removal/export of organic material generated from clearing and grubbing activities.

SOURCE: SCE 2023a and 2024a

2.7.5 Subtransmission Line Construction

2.7.5.1 Pole and H-Frame Installation

Tubular Steel Pole Installation

TSP structures typically consist of multiple sections. The TSP sections would be placed in temporary work areas at each pole work area location. Depending on conditions at the time of construction, the top sections may come preconfigured (i.e., assembled at a staging area), may be configured on the ground, or may be configured after pole installation with the necessary crossarms, insulators, and wire stringing hardware. A crane would then be used to set each TSP base section on top of the previously prepared concrete pier or micro-pile foundation (see *Foundation Installation*, below). Direct-buried TSPs would be installed similarly to LWS poles as described below. If existing terrain around the TSP location is not suitable to safely support the use of a crane, a temporary crane pad would be established within the temporary work area. Alternatively, TSPs may be set by helicopter. When the base section is secured, the subsequent section(s) of the TSP would be slipped together into place onto the base section by crane or helicopter. Hydraulic jacks may be temporarily mounted between pole sections to jack the pole sections together. The TSP sections may then be spot welded together for additional stability. Depending on the terrain and available equipment, the pole sections could also be pre-assembled into a complete structure before setting the pole.

Lightweight Steel Pole and H-Frame Installation

LWS poles would be installed using a direct-burial approach. This process entails excavating a hole either using an auger or backhoe or by hand. In some locations, workers may need to place corrugated steel, cardboard, or plastic forms to stabilize the excavated walls before pole installation. Excavated material would generally be used as backfill, pending geotechnical engineering design recommendations that would be prepared for the Project.

Depending on conditions at the time of construction, the top sections of the LWS poles may come preconfigured, may be configured on the ground, or may be configured after pole installation with the necessary crossarms, insulators, and wire-stringing hardware. The LWS poles would then be installed in the holes, typically by a line truck or crane. When the base section is secured, the top section(s) would be installed on top of it. Depending on the terrain and available equipment, the pole sections could also be assembled into a complete structure on the ground before setting the poles in place within the holes. LWS poles also may be installed by helicopter, depending upon existing field conditions at the time of construction.

The vertical components of LWS H-frames would be installed as described above. After installation of the vertical components, the horizontal member of the LWS H-frame would be installed on the vertical poles using the same types of equipment as for installation of the vertical components.

Delivery and Assembly

TSPs and LWS poles and associated hardware generally would be delivered to each temporary work area overland by truck. In some locations where existing access or spur roads are not amenable to overland delivery, TSP or LWS pole sections and associated hardware may be delivered to a temporary work area by helicopter. Depending on conditions at the time of construction, the top sections may come preconfigured, may be configured on the ground, or may be configured after pole installation with the necessary crossarms, insulators, and wire stringing hardware.

Pads

The Project includes installation of 32 permanent O&M structure pads in areas where the existing ground gradient exceeds five percent. Pads would be graded during construction and used for future O&M activities at the structure site. Typical dimensions for O&M structure pads vary depending on location and terrain. The locations of the proposed O&M structure pads are provided in Appendix A. Temporary crane pad locations have not been identified for the Project at this time. Temporary crane pads would be located at pole/TSP locations where the existing grade is less than 5 percent. Final pad dimensions would be refined further during final engineering, further identification of field conditions, and compliance with applicable environmental and permitting requirements.

Foundation Installation

TSPs would be either installed on a drilled, poured-in-place, concrete foundation; installed on drilled micro-piles; or direct-buried. If a single concrete foundation is used, the hole would be

drilled using truck or track-mounted excavators. Excavated material would generally be used as backfill. After excavation for the foundations, steel-reinforced cages would be set, positioning would be survey verified, and concrete would then be poured. Foundations in soft or loose soil or those that extend below the groundwater level may be stabilized with drilling mud slurry. In this instance, mud slurry would be placed in the hole during the drilling process to prevent the sidewalls from sloughing. Concrete would then be pumped to the bottom of the hole, displacing the mud slurry. Depending on site conditions, the mud slurry brought to the surface would typically be collected in a pit adjacent to the foundation or vacuumed directly into a truck to be reused or discarded at an appropriate off-site disposal facility. TSP concrete drilled foundations typically require an excavated hole approximately 5 feet in diameter and extend 20–50 feet deep with approximately 1–3 feet of concrete visible above ground (SCE 2024a). TSPs would require approximately 15–154 cy of concrete delivered to each structure location. See Table 2-1 for dimensions of foundations and associated structures.

Installation of micro-piles would require the drilling of several smaller diameter holes (approximately 3 to 10, 8-inch holes) for each foundation. An anchor rod would be placed within each hole and the holes would be filled with cement grout (approximately 0.5 to 2.0 cy). The micro-piles would then be tied together to form a single, reinforced concrete cap upon which the TSP would be installed.

During construction, concrete from existing concrete supply facilities would be used where feasible; the use of a concrete batch plant for the Project is not proposed. Should groundwater be encountered during excavation or drilling for foundations, it would be discharged to the surface or pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

Wood Pole Removal

Approximately 241 existing distribution wood poles and six existing subtransmission wood poles would be removed as part of the Project. Wood poles would generally be removed using a crane. The above-ground and below-ground portions of each pole would be removed. Ground crew would hand-excavate at the base of the wood pole and hydraulic jacks would be placed around the base of the pole; a crane would be attached to the pole, and the pole would then be jacked and lifted out and placed in the temporary work area or on a trailer. The wood pole would be transported by truck to a staging area, and then to a SCE facility for reuse or recycling.

In some cases, if access to a given wood pole is not available or the topography is not amenable to surface vehicle–supported construction, that pole may be removed by helicopter. In these cases, crews would cut the pole approximately 4 feet above ground and fell this portion to the ground within the temporary work area in a controlled manner. The remaining aboveground and belowground portions of the pole would be removed using hydraulic pole jacks or by hand-digging, or both. The two portions of the pole would then be removed by helicopter; each portion would be placed on the ground in a previously disturbed area or on a trailer or flown to a helicopter landing zone. The hole left from removing the pole would be backfilled and compacted with soils available as a result of the excavation for a new structure at that location, with excess soil from the area, or with imported fill as needed.

Existing distribution/subtransmission conductors and equipment (underbuild) would be transferred to the new subtransmission structure and upgraded to current specifications, if necessary. Construction crews may require temporary access to adjacent structures during the underbuild transfer. Minor construction activities related to distribution switching may be required.

Wood Pole Topping

The Project may include pole topping where existing distribution and telecommunications lines are present. Where distribution underbuild is proposed, existing distribution infrastructure (e.g., distribution conductor, transformers) may be transferred onto the new subtransmission structures, leaving telecommunications lines temporarily in place on the existing distribution poles. In that case, the pole may be topped at the telecommunications line level (i.e., a portion of the existing distribution pole may be removed where it exists above the telecommunications line) until the existing telecommunications line is transferred to a new structure and the distribution pole could be completely removed.

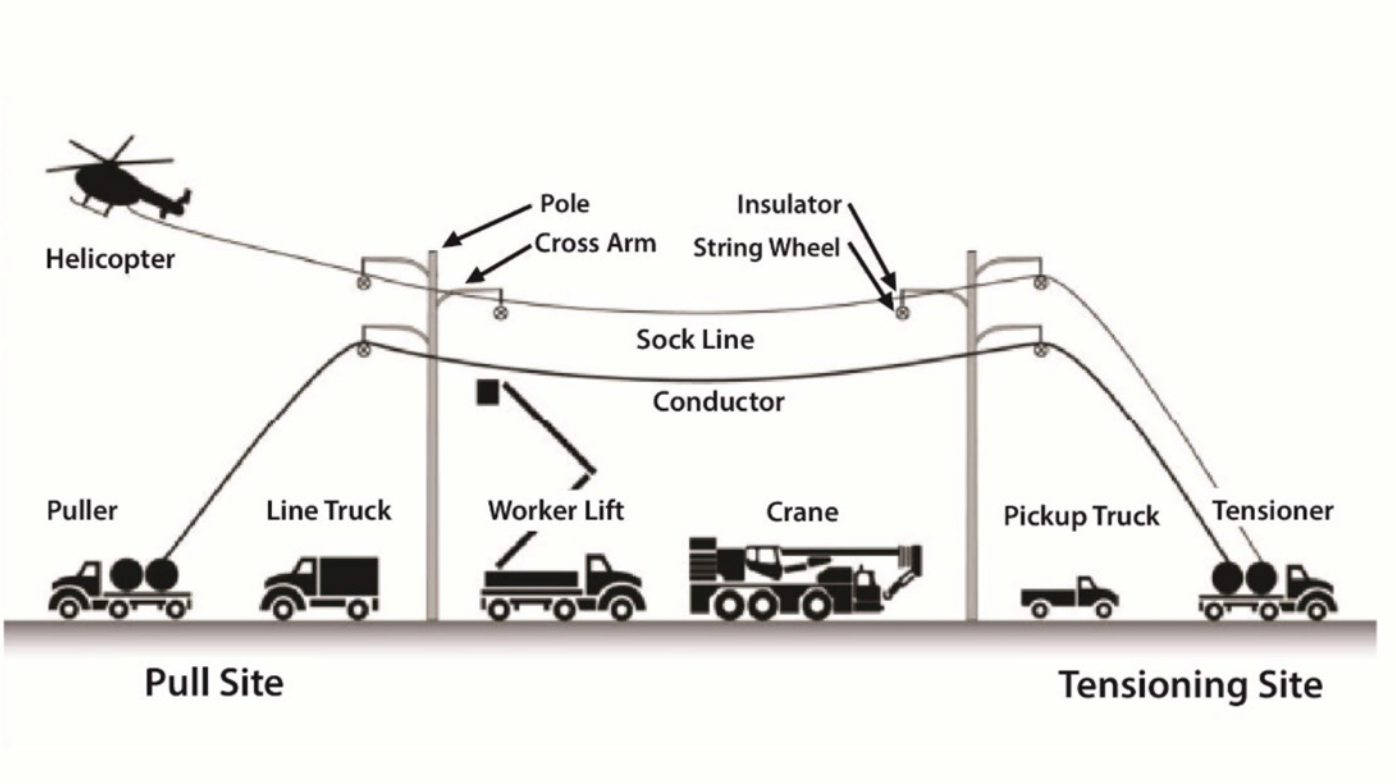
2.7.5.2 Conductor and Cable Installation Process

Conductor and fiber optic cable installation activities would take place at every pull-and-tension stringing site, at every existing structure that would be removed, at every existing structure that would be modified, and at every newly installed structure within the new Kramer–Cal City 115 kV and Cal City–Edwards-Holgate 115 kV Subtransmission Line alignments (see Appendix A for the specific locations). **Figure 2-7**, *Proposed Pull-and-Tension/Stringing Site Setup*, provides a diagram of a typical construction pull-and-tension/stringing site.

Wire stringing would include all activities for installation of the primary conductors onto the subtransmission line structures. These activities include the installation of conductor, telecommunications cable, insulators, stringing sheaves (rollers or travelers), vibration dampeners, weights, suspension, and dead-end hardware assemblies for the entire length of the route. Wire stringing activities would be conducted in accordance with SCE common practices and similar to process methods detailed in IEEE Standard 524-2003, *Guide to the Installation of Overhead Transmission Line Conductors*. To ensure the safety of workers and the public, safety devices such as traveling grounds, guard structures, radio-equipped public safety roving vehicles, and linemen would be in place before the initiation of wire stringing activities.

As described below, wire stringing would involve a five-step process: planning, sock line threading, pulling, splicing/sagging/dead-ending, and clipping in.

- *Planning:* A wire stringing plan would be developed in the planning step to determine the sequence of wire pulls and establish locations for wire pull tensioning and splicing equipment.
- *Sock line threading:* A bucket truck would be used to install a lightweight sock line from structure to structure. The sock line would be threaded through the wire rollers to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a particular set of spans selected for a conductor pull. In areas where a bucket truck would be unable to install a lightweight sock line, a helicopter would fly the lightweight sock line from structure to structure, and the threading would follow the same process as for the use of a bucket truck.



SOURCE: SCE 2023a

Cal City Substation 115 kV Upgrade Project

Figure 2-7
Proposed Pull-and-Tension/Stringing Site Set-Up

2019/D201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

ESA

- *Pulling:* The sock line would be used to pull in the conductor pulling rope and/or cable. The pulling rope or cable would be attached to the conductor, using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel. A piece of hardware known as a "running board" would be installed to feed the conductor into the wire roller. This device would keep the conductor from wrapping during installation. The new conductor would be installed by utilizing conductor tensioning equipment at the conductor end of the pull.
- *Splicing/sagging/dead-ending:* Once the conductor would be pulled in, the splicing/sagging/dead-ending step would be initiated, and if necessary, all mid-span splicing would be performed. Conductor would be spliced using compression splices applied per manufacturer's instructions and specifications. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures.
- *Clipping in:* After dead-ending of the conductor, the conductors would be secured ("clipped in") to all tangent structures. Once this is completed, spacers would be attached between the conductors of each phase to keep uniform separation between each conductor.

The average distance between pull-and-tension/stringing sites along the Project alignments would be approximately 2.3 miles, with a splice site in between two pull-and-tension/stringing sites. The dimensions of each pull-and-tension site/stringing site would be approximately 300 feet by 200 feet and splicing sites would be 75 feet by 75 feet. Pull-and-tension/stringing sites may be located at existing dead-end structures, at points of inflection in the transmission line alignment, and according to the capacity of conductor reels. Generally, pull-and-tension/stringing sites would be in a direct line with the direction of the overhead conductors being installed and established at a distance equal to approximately three times the height of the adjacent structure. The equipment types that would be required at pull-and-tension/stringing sites are identified in Table 2-7, presented in Section 2.7.15.3 later in this chapter. The pull-and-tension/stringing sites used for conductor installation would also be used for OPGW installation.

2.7.5.3 Guard Structures

Guard structures would be standard wood poles with diameters of 12–18 inches at the base and burial depths of 5–7 feet. Depending on the overall spacing of the conductors being installed, approximately three to five guard poles would be required on either side of a crossing. Guard structure wood poles would be installed using a direct-burial approach. Installing direct-buried wood poles would require workers to excavate a hole using either an auger or a backhoe, or with the use of hydraulic or pneumatic equipment (e.g., jackhammers, drills). In some locations, corrugated steel or plastic forms may be placed to stabilize the excavation walls before installation of the pole.

After excavation of the pole hole, the wood pole would be installed in the excavated or augured hole, typically by a line truck with an attached boom; the base would be secured by backfilling excavated material in the interstitial space between the wall of the excavated or augured hole and the pole. In some cases, the wood pole could be installed using specifically equipped boom trucks, or at highway crossings, temporary netting could be installed if required by the applicable county or Caltrans. The guard structures would be removed after the conductor is secured into place.

For crossings of U.S. Highway 395, State Route 58, other roads and highways, and the Burlington Northern Santa Fe Railroad tracks, SCE would work with the applicable jurisdictions to secure the necessary permits to string conductor over the infrastructure.

2.7.5.4 Optical Ground Wire Installation

OPGW would be installed along the new Kramer–Cal City 115 kV and Cal City–Edwards-Holgate 115 kV subtransmission lines on new structures simultaneously with conductor as described above. ADSS fiber optic cable would be installed along 1,600 feet of the Cal City–Edwards-Holgate 115 kV Subtransmission Line where it connects to the Cal City Substation. Overhead ADSS fiber optic cable would be installed in the same manner as described for conductor, above.

2.7.6 Cal City Substation Upgrade Construction

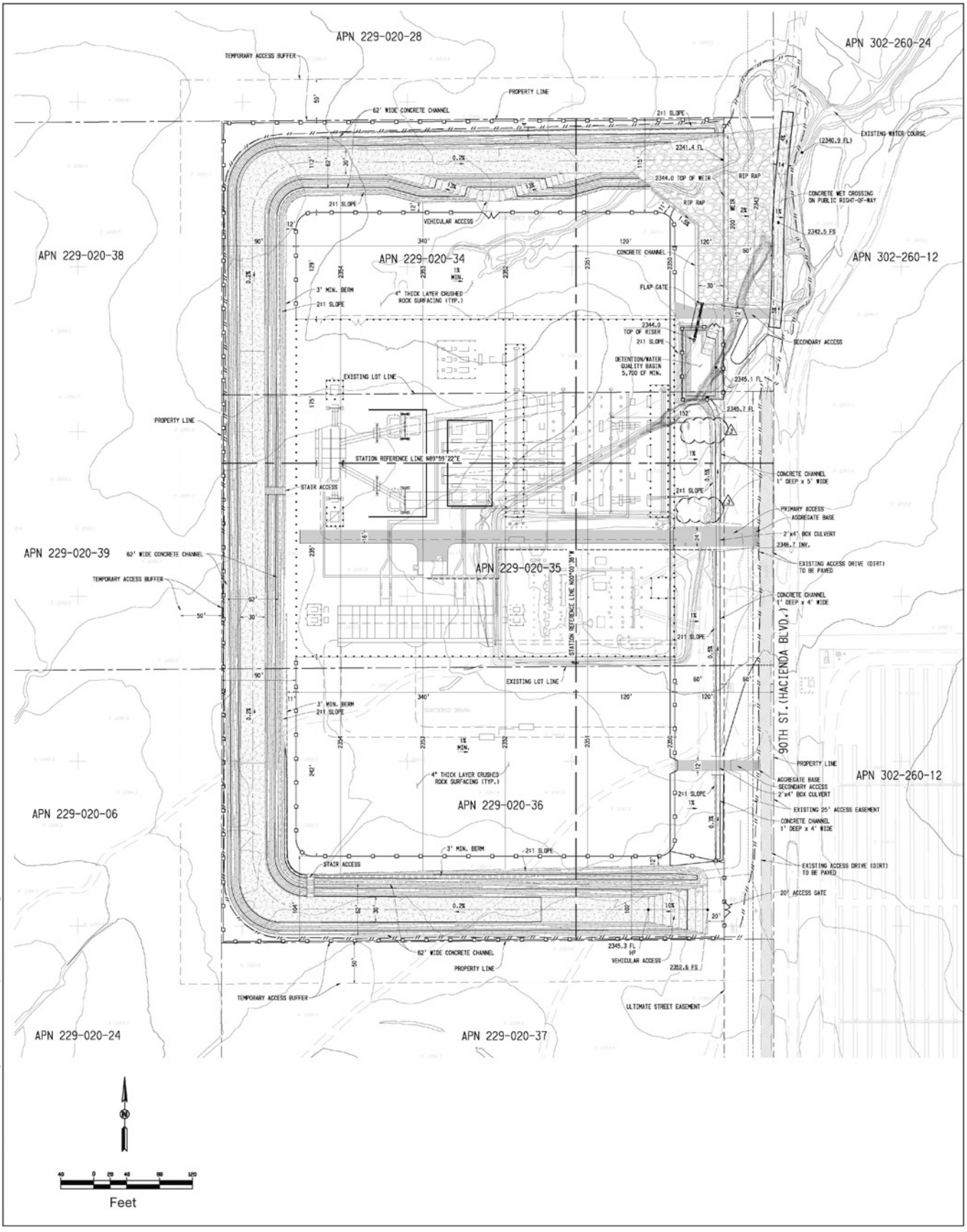
The entire Cal City Substation expansion area would be graded, compacted, and leveled to create a generally flat surface. The expansion area would be prepared for installation of the new substation equipment, drainage improvements, and the creation of staging areas.

After site preparation, below-grade facilities would be installed. Examples of such below-grade facilities that would require some excavation activities include a concrete drainage channel, a ground grid, cable trenches, equipment foundations, substation equipment foundations, conduits, duct banks, and vaults. Existing concrete supply facilities would be used where feasible. Above-grade installation of substation facilities such as buses, capacitor banks, switchracks, disconnect switches, circuit breakers, transformers, steel support structures, fences, and the MEER would begin after the below-grade structures are in place. The transformers would be delivered by heavy-transport vehicles and installed on the transformer foundation. The grounding system at the Cal City Substation would be modified as part of the Project.

2.7.6.1 Grading and Drainage

Civil work at the Cal City Substation would include grading and installation of drainage within the existing approximately 5-acre Cal City Substation property and the proposed property expansion areas to the north and south. The graded area would be required for the expanded substation facility infrastructure, staging areas, spoils or borrow area, drainage devices, substation driveway, and room to grade back to the existing surface. Water would be imported to the site for grading and compacting activities as needed (see Section 2.7.8.1, Water Use, for more information). Applicable grading and drainage plans would be prepared and submitted to the City of California City for approval before construction. Before grading, the substation property would be cleared and grubbed. Existing terrain at the Cal City Substation is relatively flat, but the proposed slope of the substation would be at a minimum of 1 percent from west to east (see **Figure 2-8**, *Site Development Plan for the Cal City Substation*).

In addition, civil work at the Cal City Substation would include construction of a new concrete-lined drainage channel that would extend along the southerly, westerly, and northerly sides of the expanded substation property. The 62-foot-wide channel would capture flows from the west and south off-site tributary area (run-on) and would route flows around the Project infrastructure, conveying flows to a riprap area where a concrete wet crossing would allow a natural flow path



SOURCE: SCE 2023c

Cal City Substation 115 kV Upgrade Project

Figure 2-8
Site Development Plan for Cal City Substation

2019/D20190O517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

outfall to an existing discharge point at the northeast corner of the property, on 90th Street. Sheet flow would be from west to east. A 5-foot-wide, 1-foot-deep concrete-lined channel would be constructed along the easterly side of the property between the fence and 90th Street. Concrete culverts measuring 2 feet by 4 feet would be installed under each proposed driveway. An approximately 100-foot-long, 50-foot-wide, 5-foot-deep basin would be installed for water quality and runoff reduction. Engineered spill containment structures are included at the Cal City Substation as part of the Project for the six proposed transformers.

2.7.6.2 Communication Systems

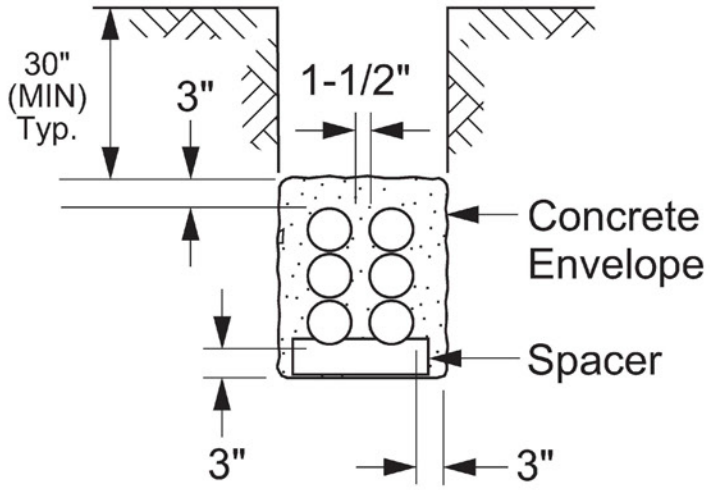
SCE would install new terminal equipment, channel multiplexer equipment, equipment cabling, and other telecommunications equipment devices within the existing MEERs or control buildings at the Kramer and Edwards substations and the Holgate Switchyard, or within the proposed MEER at the Cal City Substation. This work would provide the required telecommunications circuit connection for subtransmission line protection relay equipment within previously disturbed surfaces at the substations and switchyards. SCE would also install cabling between existing breakers to the existing or proposed control room/MEER at each substation and switchyard and would install new relay and protection racks in those facilities. This work may require the use of a manlift or similar equipment to gain access to the connection points on the breakers. Short sections of fiber optic cable would be installed underground at and adjacent to the existing Cal City Substation. The existing telecommunications cabinet at the Cal City Substation would be removed.

2.7.6.3 Distribution Getaways

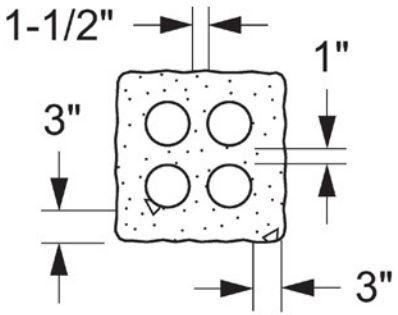
The distribution getaway construction would involve excavation, installation of conduits, concrete encasements, installation of vaults, backfilling, and restoration of surfaces, if required. The underground conduit would be placed in rows that would be horizontally spaced by 1.5 inches on a 3-inch-deep base spacer and would be encased within a concrete envelope. The concrete-encased duct bank would be buried at least 30 inches below the ground surface (see **Figure 2-9**, *Proposed Distribution Conduit and Duct Bank*). The civil crew would trench, install, and backfill short distances of duct bank at a time up to the substation fence line (SCE 2024a). The civil crew would excavate the holes for the vaults; lower the 8-foot-wide, at least 14-foot-long, and 9-foot 4-inch or 9-foot 6-inch-tall precast concrete vaults into the excavated holes; and backfill on top and around the vaults. The vaults would include a venting precast concrete cover on the top and a sump on the bottom (SCE 2024a; see **Figure 2-10**, *Proposed Distribution Vault*).

2.7.7 Modifications at Other Substations

Modifications at the Edwards Substation, Holgate Switchyard, and Kramer Substation could include minor grading and installation of foundations to accommodate an expanded equipment area. This work could include the installation of new fittings or structural reinforcement of the existing racks. Modifications would also involve the installation of cabling between existing breakers to the existing or proposed control room/MEER at each substation and switchyard and new relay and protection racks in those facilities. This work may require the use of a manlift or similar equipment to gain access to the connection points on the breakers. Modifications would also include connecting telecommunications cables to the existing ground grid at these facilities.



Full Encasement
More than 4 conduits
(base spacer required)



Conduit Bank Terminations
Minimum separations required between all types of conduit at conduit entrances to substructures.

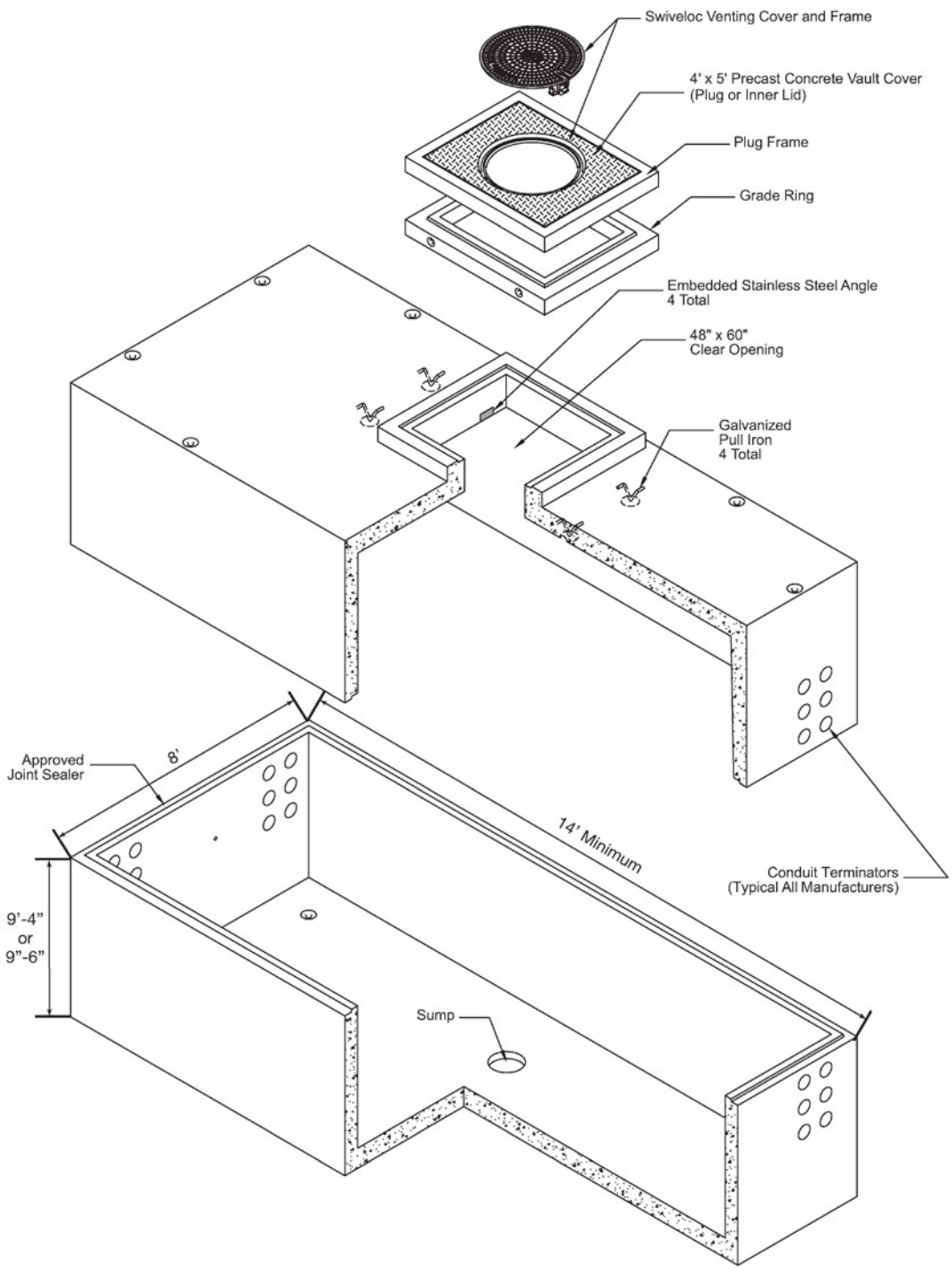
NOTE: Spacing and concrete coverage as shown is minimum.

SOURCE: SCE 2024

Cal City Substation 115 kV Upgrade Project

Figure 2-9
Proposed Distribution Conduit and Duct Bank

2019/D201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator



SOURCE: SCE 2024

Cal City Substation 115 kV Upgrade Project

Figure 2-10
Proposed Distribution Vault

2019/0201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

The existing switchracks would be reconfigured to add the new conductor; telecommunications cable would be connected to the existing ground grid. SCE would install new terminal equipment, channel multiplexer equipment, equipment cabling, and other telecommunications equipment devices within the existing MEERs or control buildings at the Kramer and Edwards substations and the Holgate Switchyard, or within the proposed MEER at the Cal City Substation. This work would provide the required telecommunications circuit connection for subtransmission line protection relay equipment within the substations and switchyards. This work would occur generally within the substation/switchyard fence line on previously disturbed surfaces.

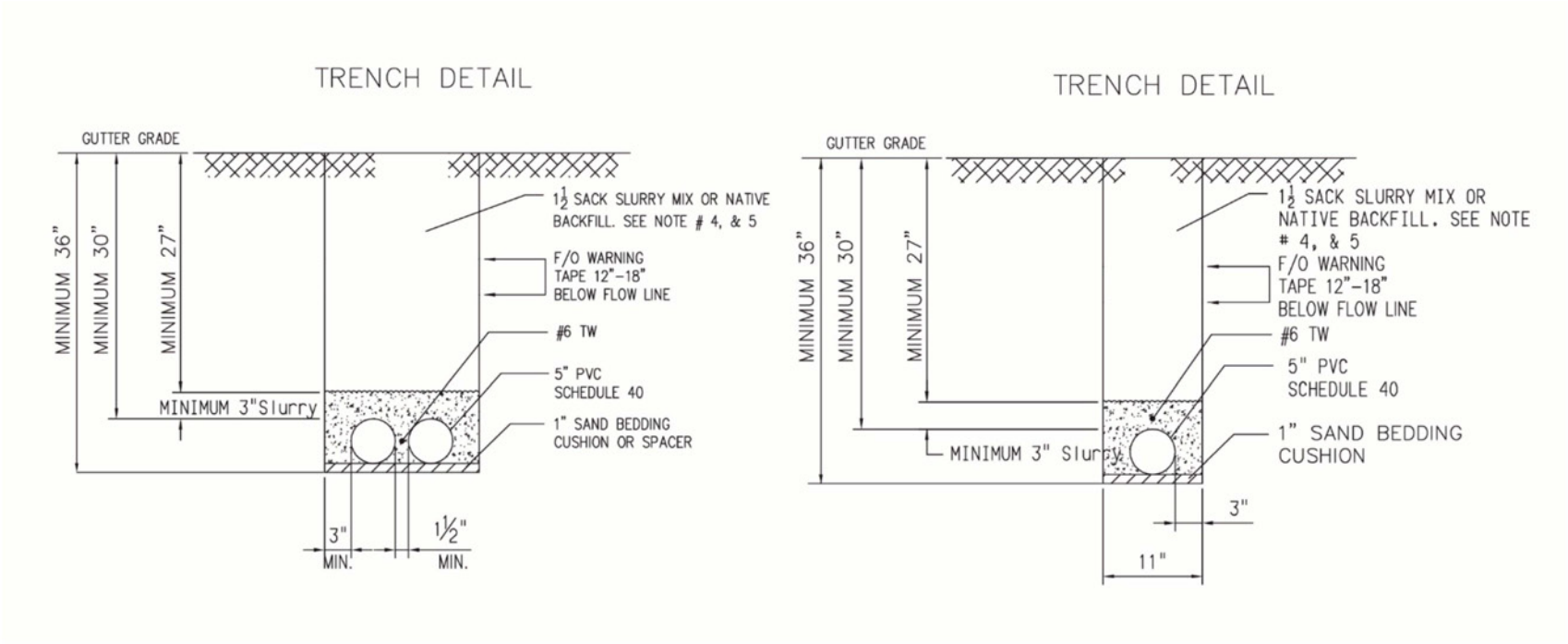
SCE would also install cabling between existing breakers to the existing or proposed control room/MEER at each substation and switchyard and would install new relay and protection racks in those facilities. This work may require the use of a manlift or similar equipment to gain access to the connection points on the breakers.

Short sections of fiber optic cable would be installed underground at and adjacent to the existing Kramer and Edwards substations and the Holgate Switchyard. Cable would transition from an overhead configuration to an underground configuration through risers installed on new, replacement, or existing poles (known as *getaway poles*).

Where existing conduit or cable raceways within and adjacent to the substations and the switchyard are available, underground fiber optic cable would be installed in those structures. If existing conduit or raceways are not available within the substation, new conduit would be installed in trenches. New conduit would also be installed in trenches between the getaway pole(s) and the MEER/telecommunications room/telecommunications cabinet within each substation. Conduit trenches would be approximately 12 inches wide and 36 inches deep.

New underground conduit and structures would typically be installed with a backhoe. The fiber optic cables would be installed in one or two 5-inch-diameter polyvinyl chloride (PVC) conduits that would be placed in the trench and covered with a minimum of approximately 30 inches of concrete slurry, then backfilled and compacted (see **Figure 2-11**, *Proposed Telecommunications Conduit and Dunk Bank*, for diagram). The dimensions and configuration of manholes are included in **Figure 2-12**, *Proposed Telecom Manhole*. The telecom manhole illustrated in Figure 2-10 is an underground structure that would be located at the last subtransmission structure outside the substation fence. Telecom manholes are typically used for splicing, pulling, adding slack, and transitioning from overhead fiber to underground fiber (SCE 2024a). The fiber optic cable would be installed in an innerduct that would protect and identify the cable within the underground conduit and structures. To install the innerduct, it would first be pulled in the conduit using a pull rope and pulling machine or truck-mounted hydraulic capstan. Then the fiber optic cable would be pulled inside the innerduct using the same procedure.

Undergrounding would require excavation for installation of vaults or pull boxes at each end of the underground conduit. For each vault or pull box, a hole would be excavated approximately 8 feet deep by approximately 6 feet long by approximately 6 feet wide. The vault or pull box would be lowered into place and connected to the conduits, and the hole would be backfilled with concrete slurry. One or more splice boxes would also be required on each getaway pole. SCE would install the fiber optic cable at the vaults and pull boxes and splice the cable segments, where it would transition from underground to overhead.



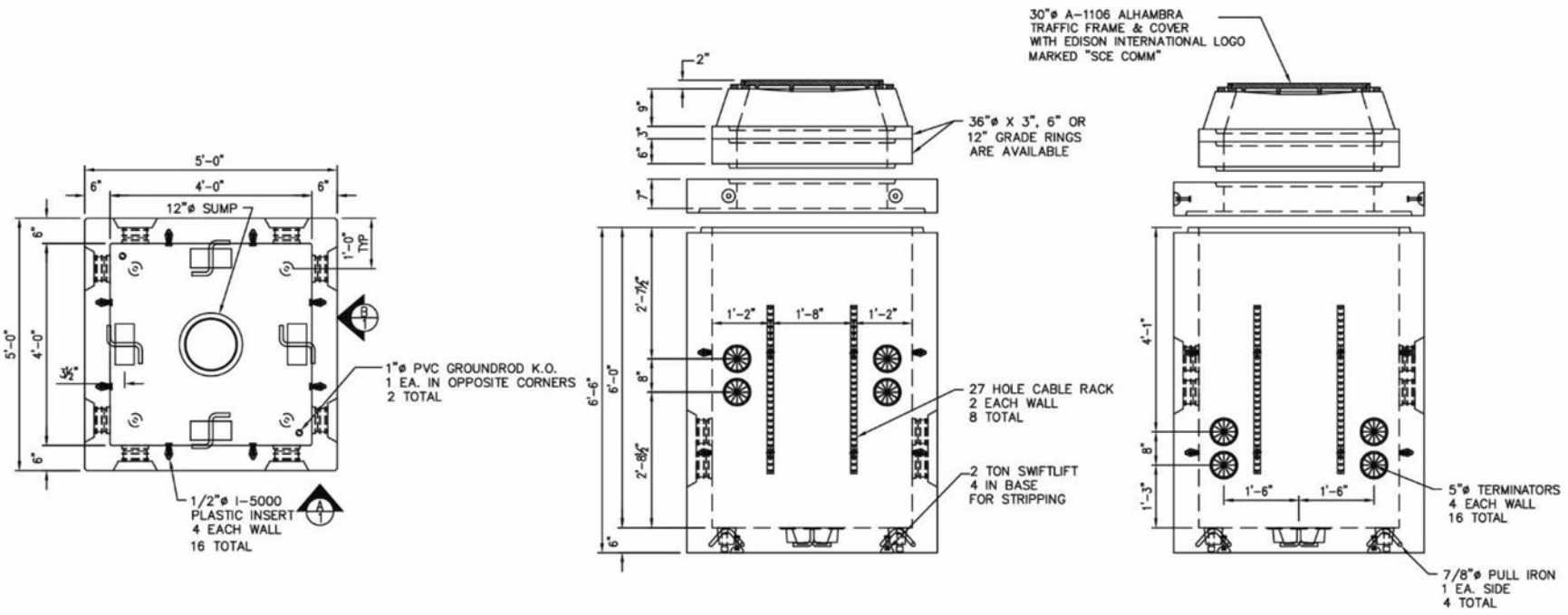
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SOURCE: SCE 2023a

Cal City Substation 115 kV Upgrade Project

Figure 2-11
Proposed Telecommunications Conduit and Duct Bank

ESA



2019/D2019005517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE 2023a

Cal City Substation 115 kV Upgrade Project

Figure 2-12
Proposed Telecom Manhole

ESA

New terminal equipment, channel multiplexer equipment, cabling, and other telecommunications equipment devices would be installed within the existing control buildings at the Kramer and Edwards substations and the Holgate Switchyard.

Undergrounding would require excavation for installation of vaults or pull boxes at each end of the underground conduit. For each vault or pull box, a hole would be excavated approximately 8 feet deep by approximately 6 feet long by approximately 6 feet wide. The vault or pull box would be lowered into place and connected to the conduits, and the hole would be backfilled with concrete slurry. One or more splice boxes would also be required on each getaway pole. SCE would install the fiber optic cable at the vaults and pull boxes and splice the cable segments, where it would transition from underground to overhead.

New terminal equipment, channel multiplexer equipment, cabling, and other telecommunications equipment devices would be installed within the existing control buildings at the Kramer and Edwards substations and the Holgate Switchyard.

Undergrounding would require excavation for installation of vaults or pull boxes at each end of the underground conduit. For each vault or pull box, a hole would be excavated approximately 8 feet deep by approximately 6 feet long by approximately 6 feet wide. The vault or pull box would be lowered into place and connected to the conduits, and the hole would be backfilled with concrete slurry. One or more splice boxes would also be required on each getaway pole. SCE would install the fiber optic cable at the vaults and pull boxes and splice the cable segments, where it would transition from underground to overhead.

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New terminal equipment, channel multiplexer equipment, cabling, and other telecommunications equipment devices would be installed within the existing control buildings at the Kramer and Edwards substations and the Holgate Switchyard.

2.7.8 Water Use and Dewatering

2.7.8.1 Water Use

Water would be used for dust control, ground compaction, restoration activities, and the construction of TSP foundations. Project construction is estimated to require approximately 476 acre-feet of water; this water would be consumed over the approximately 24-month construction duration.

If available and cost effective, the Project would utilize reclaimed or recycled water to the extent feasible during construction. If recycled or reclaimed water is not available in sufficient quantities to supply the Project's entire water demand, SCE would purchase water from commercial purveyors to supplement the volumes of recycled or reclaimed water available. Given the nature of water resources in the Project area, water purchased from commercial purveyors could be sourced from either surface water or groundwater resources. Construction water supply may be sourced directly from nearby hydrants along the Project alignment into water trucks or stored in elevated tanks at Project staging areas. SCE anticipates that water would likely be obtained from water suppliers in the region, specifically the City of California City, Antelope Valley–East Kern Water Agency, or Mojave Water Agency, all of which have service areas covering the Project area (SCE 2023b).

2.7.8.2 Dewatering

During installation of TSPs or LWS poles, shallow groundwater may be encountered. In these instances, excavations would be dewatered using one or more pumps and the water would be either discharged on-site to the surface (if so permitted) or stored in Baker tanks or similar equipment before disposal off-site; Baker tanks or similar equipment would be placed at the temporary work area established for new structure installation. Dewatering water may also be used for dust control.

2.7.9 Temporary Rights-of-Way or Easements

2.7.9.1 Temporary Rights-of-Way or Easements: Required for Access

Based on final engineering and construction requirements, temporary entry permits (TEPs) or temporary construction easements (TCEs), or both, may be required from private landowners to provide sufficient equipment and material storage, staging and work areas, access, and landing zones for any approved Project component.

2.7.9.2 Temporary Rights-of-Way or Easements: Construction Area Locations

Construction work areas along the Project alignment that may require temporary rights consist of pull-and-tension/stringing sites, splice sites, structure installation/removal locations, guard sites, staging areas, construction work areas, helicopter landing zones, and access roads. SCE anticipates obtaining TCEs, TEPs, and/or other permits for all construction work areas that extend beyond SCE's existing easements and proposed easements on private lands and CDFW lands, if necessary, including portions of the staging areas listed in Table 2-3. For temporary construction work areas on DoD and/or BLM lands, the respective governmental agency would issue temporary licenses/site approvals (on DoD lands) and temporary use permit (TUP) approvals (on BLM lands), if necessary.

2.7.9.3 Temporary Rights-of-Way or Easements: Acquisition

Temporary land rights (TCEs or TEPs) may be required from private landowners. The total number of temporary land rights to be acquired from private landowners would be determined

during final engineering. Temporary land rights on federal lands (if identified during final engineering as necessary) would be acquired from BLM or DoD. Pursuant to California Public Utilities Code Section 612, SCE also has the power of eminent domain to acquire any necessary land rights for construction of the Project.

2.7.10 Public Safety and Traffic Control

2.7.10.1 Public Access Restrictions

To ensure public safety during Project construction, the public would be restricted from entering or transiting construction work areas and staging areas and would be excluded from those areas of the alignment where overhead cable installation activities are underway. Public access restrictions would be maintained throughout the duration of construction activities at a given location.

2.7.10.2 Traffic and Pedestrian Control Procedures

Overhead cable installation activities would require the temporary closures of roads, lanes of roads (if the entire road does not need to be closed), and associated sidewalks or pedestrian paths. SCE would obtain encroachment permits from the local jurisdictions and Caltrans, as appropriate, for lane or roadway closures. Closures of private driveways would be coordinated with the individual landowners.

Construction activities within public street ROWs would require the use of a traffic control service, and all lane closures would be conducted in accordance with applicable public safety requirements. SCE would follow its standard safety practices, including installing appropriate traffic control devices between work zones and transportation facilities, posting adequate signs, and using proper construction techniques. SCE would follow the recommendations in the *California Temporary Traffic Control Handbook* (CIUCC 2018) regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the California Vehicle Code. A traffic control plan, if required by ministerial encroachment permits, would be developed and implemented. SCE would also coordinate with jurisdictional agencies and obtain permissions for locations that would cross trails and paths of recreational lands.

2.7.11 Security

Staging areas would be fenced and may be illuminated for security purposes. Security personnel may be stationed or patrol the staging areas. Measures for security of staging areas would be put in place for the duration of their use. Security measures generally would be employed at construction work areas in the event overnight equipment or material storage is required, but not necessarily for everyday construction purposes.

2.7.12 Hazardous Materials Management

Project construction would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents (see **Table 2-6**, *Anticipated Types, Uses, and Volumes of Hazardous Materials*) to power internal combustion engines and lubricate internal combustion

engines and other construction equipment and hardware, and for cleaning purposes. No herbicides or pesticides are planned to be used during construction.

TABLE 2-6
ANTICIPATED TYPES, USES, AND VOLUMES OF HAZARDOUS MATERIALS

Hazardous Material Type	Use	Volume (gallons)
Fuels		
Diesel Fuel	Engine fuel	680,918
Gasoline	Engine fuel	203,885
Jet A	Engine fuel	115,896
Lubricants and Cleaning Fluids		
Lubricants/Hydraulic Fluids	Engine and equipment lubrication/powering hydraulic equipment	44,240
Miscellaneous Construction Fluids (e.g., solvents)	Cleaning, lubricating hardware, etc.	2,212

NOTES:

Estimated quantities based on air quality modeling assumptions. Lubricants/hydraulic fluids consumption assumed at 5 percent of non-aviation fuel consumption. Miscellaneous construction fluid volumes assumed at five percent of lubricants/hydraulic fluid volumes.

SOURCE: SCE 2023a (PEA Chapter 3).

All hazardous materials would be stored, handled, and used in accordance with applicable regulations. Consistent with regulatory requirements, the Material Safety Data Sheets would be made available at the construction site for all crew workers. The volumes of these materials that would be consumed or used during construction have not been determined at this time. However, based on the anticipated volume of hazardous liquid materials (e.g., fuel) that would be stored and dispensed at one or more staging areas, a Spill Prevention, Control, and Countermeasure Plan could be required (in accordance with 40 CFR Parts 112.1 through 112.7) depending on contractor requirements.

2.7.13 Waste Generation and Management

2.7.13.1 Solid Waste

Solid waste generated during construction would consist of metals, wood poles, wood pallets, cardboard, and other materials associated with construction packaging, worker-generated solid waste (e.g., food waste and packaging), and organic waste (e.g., removed vegetation).

Solid Waste Management

Solid waste generated during Project construction would be collected at the point of creation, transported to a staging area, and then temporarily stored at a staging area awaiting salvage, recycling, and/or disposal. Solid wastes would be sorted, and recyclable and nonrecyclable materials would be stored separately in the staging areas. No treatment of solid wastes would occur at any Project construction work area or staging area. Solid wastes would be transported off-site using SCE-approved transporters and disposed of at one or more SCE-approved disposal facilities or at an industrial-scale recycling facility. Organic waste would be removed from the

Project alignment and disposed of off-site. Soils generated from Project activities—such as grading, blading, or excavations for the installation of new structures, construction of new or improvements to existing access roads, and expansion of the Cal City Substation—would be balanced on-site along the Project alignment. Contaminated soil, if encountered, would be disposed of as described in the *Potentially Hazardous Waste Streams and Management* discussion in Section 2.7.13.3, *Hazardous Waste*.

Estimated Mass of Solid Waste

A primary source of waste associated with the Project would be wood poles removed along segments where distribution underbuild is proposed, as well as adjacent to the Cal City Substation and Holgate Switchyard. Approximately 253 wood poles identified for removal or replacement may require disposal, generating an estimated 1,325 cy or 506 tons of solid waste. Wood poles would be disposed of as described below in Section 2.7.13.3, *Hazardous Waste*.

Solid Waste Recycling Potential

SCE proposes to recycle the entire mass of the removed wood poles if possible. SCE estimates that, at a minimum, three-quarters of the mass of metallic hardware and fittings and miscellaneous solid waste would be recycled (SCE 2023a).

Solid Waste Disposal and Recycling Facilities

The final disposition site of recyclable materials has not been determined at this time, as the selection of such a site may depend upon market conditions at the time of construction. Disposal facilities for nonmetallic recyclable materials and nonrecyclable materials are currently available at the Boron Sanitary Landfill (south of Boron in unincorporated Kern County), the California City Recycling and Transfer Station (in California City), the McKittrick Waste Treatment Site (in McKittrick), the Mojave-Rosamond Sanitary Landfill (south of Mojave in unincorporated Kern County), the Ridgecrest Recycling & Sanitary Landfill (west of Ridgecrest in unincorporated Kern County), and the Tehachapi Sanitary Landfill (east of Tehachapi in unincorporated Kern County). Of these, all but the California City Recycling and Transfer Station and McKittrick Waste Treatment Site accept construction/demolition debris and may be used for Project-generated construction debris (SCE 2023b).

2.7.13.2 Liquid Waste

Sanitary waste is the only liquid waste that would be generated during Project construction. No other liquid wastes (e.g., drilling muds, contaminated waters) are expected to be generated by the Project.

Liquid Waste Management

Portable toilets would be provided for on-site use by construction workers; sanitary waste would be collected, contained, and stored in these portable toilets before disposal by a licensed sanitation contractor. Sanitary waste would be treated at a wastewater treatment plant.

Liquid Waste Volume and Disposal

The volumes of liquid waste generated across the Project alignment would be commensurate with the number of workers on-site during construction (i.e., an average of approximately 97 workers). Approximately 31,475 gallons of liquid waste[5] would be generated during Project construction. It is assumed for the purpose of analysis that up to 97 workers would work a 6-day work week for up to 24 months. Sanitary waste would be transported to, and treated at, the City of California City Wastewater Treatment Plant, Rosamond Water Treatment Plant, or Lancaster Water Reclamation Plant.

2.7.13.3 Hazardous Waste

Potentially Hazardous Waste Streams and Management

Only small volumes of hazardous waste would be generated during Project construction. These hazardous wastes would generally include empty fuel, lubricant, or cleaning solvent containers and materials contaminated with fuels, lubricants, or cleaning solvents (e.g., rags, drip pans). A low potential exists for contaminated soil or groundwater to be encountered during excavation or other ground-disturbing activities.

The existing wood poles or portions of wood poles removed for the Project would be returned to a staging area. They would be either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or disposed of in the lined portion of a Regional Water Quality Control Board (RWQCB)–certified landfill or equivalent facility.

All hazardous waste would be stored, handled, and used in accordance with applicable regulations. Safety Data Sheets would be made available to all crew members at the construction sites. SCE crews and/or SCE's construction contractor would implement proper hazardous waste management activities, which would include preparation and implementation of a Project-specific Hazardous Materials Business Plan as specified in Applicant Proposed Measure (APM) HAZ-1 (see Section 2.12.1). The plan would include safety information regarding the transport, use, and disposal of hazardous waste. In addition, all transport, use, and disposal of hazardous waste would occur in compliance with applicable laws, rules, and regulations.

To address contaminated soil or groundwater, SCE would develop and implement a soil management plan in accordance with APM HAZ-2 (see Section 2.12.1). The plan would direct that, if encountered, contaminated soil is to be segregated, sampled, and tested to determine appropriate disposal options. If the soil is classified as hazardous, it would be properly managed on location and transported in accordance with U.S. Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility, as approved by SCE. Should potentially contaminated groundwater be encountered, groundwater samples would be collected and tested to determine appropriate treatment and disposal. Hazardous waste would be transported and disposed of in

[5] Assumes 2 liters (0.52 gallon) per construction worker, 97 workers, a 6-day work week, and an up to 24-month construction schedule.

accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public.

Volumes of Hazardous Waste

Only small volumes of hazardous waste are anticipated to be generated during Project construction.

Locations of Appropriate Disposal Facilities

The final disposition location of hazardous wastes would be determined by the construction contractor immediately before or during construction, but it would be at an SCE-approved facility. One or both of the following SCE-approved facilities may be used:

- Clean Harbors, Buttonwillow, LLC, 2500 West Lokern Road, Buttonwillow, CA 93206
- Kettleman Hills, 35251 Old Skyline Road, Kettleman City, CA 93239

Old oil-filled equipment used in support of the Project may also be transported to the SCE Shop Services and Instrumentation Division's facility in Westminster, California, for maintenance, repair, and disposal, as necessary.

2.7.14 Fire Prevention and Response

SCE would implement standard fire prevention protocols during construction activities and would comply with applicable laws and regulations. Construction areas would be grubbed/trimmed of vegetation and graded before the staging of equipment, and in areas where overland travel may occur, dry vegetation would also be trimmed; such activities would minimize the potential for vehicles or equipment to start a fire.

Furthermore, SCE would prepare a fire management plan that all personnel working on the Project would be required to adopt. The fire management plan is intended to ensure compliance with applicable laws and regulations and would outline responsibilities for management, fire patrol, supervisors, and all personnel working on the Project.

In the event that the National Weather Service issues a Red Flag Warning during construction of the Project, additional measures would be implemented to address smoking and fire rules, storage and parking areas, the use of gasoline-powered tools, the use of spark arresters on construction equipment, road closures, the use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements.

No new permanent fire breaks (i.e., areas cleared of vegetation) would be developed as part of the Project. Areas around new structures would be maintained in accordance with the applicable standards identified in CPUC General Order 128. No areas would be cleared of vegetation solely to create a temporary fire break. In areas where hot work (e.g., welding) would be performed, or where equipment would be staged and operated where hot surfaces (e.g., exhaust systems) could come in contact with extant vegetation, such vegetation would be cleared or trimmed. This vegetation clearing or trimming would be contained within the construction work area identified for that given location.

2.7.15 Construction Workforce, Equipment, Vehicles, and Schedule

2.7.15.1 Workforce

The construction workforce is anticipated to consist of between 17 and 140 construction personnel (at the peak of construction). This workforce includes clerical, safety, and management in addition to on-site workers. On average, approximately 97 construction personnel would work on a given day. The estimated workforce for each Project construction activity type is shown in **Table 2-7**, *Anticipated Subtransmission Construction Equipment Workforce*, and **Table 2-8**, *Anticipated Substation Construction Equipment Workforce*. The estimated number of crew members would be variable depending on resource and material availability and construction scheduling.

If SCE construction crews are used, they typically would be based at SCE's local facilities (e.g., service centers, substations) or the temporary staging areas set up for the Project. Contractor construction personnel would be managed by SCE construction management personnel and based out of the contractor's existing staging area or temporary staging areas set up for the Project. Construction crews would be transported to and from construction work areas along the Project alignment in construction vehicles (i.e., pickup trucks or other self-propelled vehicles) or by helicopter.

2.7.15.2 Equipment and Vehicles

The different types of activities to be undertaken during construction, and the horsepower, fuel type, quantity, duration of workdays, and duration of hours per workday for each type of equipment and vehicle that would be used to construct the Project are presented in Tables 2-7 and 2-8. Equipment and vehicles would be transported to and from construction work areas along the Project alignment by being driven or towed along public roadways and along the existing network of access roads. Along the Project alignment, it is likely that many pieces of construction equipment or vehicles would be left in work areas overnight and on off-days (e.g., holidays) rather than being driven to and from the construction work areas each day.

2.7.15.3 Schedule

Construction of the Project is expected to take at least 24 months, depending on weather conditions and potential biological resources constraints and/or permitting requirements. Construction would begin after final engineering, procurement activities, land acquisitions, and receipt of all applicable permits and approvals. Work would occur between 6:00 a.m. and 7:00 p.m. Monday through Saturday, or during the hours established by local ordinances and/or in ministerial permits. At limited times, some construction along the Project alignment may require completion outside of these hours. The anticipated work schedule may also vary in the winter months when construction may conclude before sunset and variable weather could force a halt to construction during rain events. Tables 2-7 and 2-8 present the proposed construction duration and estimated start date (e.g., month and year) for each Project construction activity.

TABLE 2-7
ANTICIPATED SUBTRANSMISSION CONSTRUCTION EQUIPMENT AND WORKFORCE

Primary Equipment Description	HP	Fuel Type	Primary Equipment Quantity	Schedule (days)	Hours/ Day[1]	Estimated Workforce	Start and End Dates[2]
Subtransmission Staging Areas							
1-Ton Truck; 4x4	300	Diesel	4	597	NA	16	3/2/2026–2/26/2028
R/T Forklift	96	Diesel	4		4		
Generator	45	Diesel	4		8		
Water Truck	350	Diesel	4		NA		
Subtransmission Civil Crew (Roadwork, Foundations, Ducts)							
1-Ton Truck 4x4	300	Diesel	7	299	NA	20	3/2/2026–2/27/2027
Backhoe/Front Loader	125	Diesel	4		4		
Track-Type Dozer	350	Diesel	2		8		
Motor Grader	148	Diesel	2		8		
Lowboy Truck/Trailer	500	Diesel	1		NA		
Three-Quarter-Ton Truck 4x4	275	Gasoline	7		NA		
Boom/Crane Truck	367	Diesel	1	298	4		
Auger Truck/Drill Rig	83	Diesel	2		6		
Water Truck	350	Diesel	2		NA		
Excavator	172	Diesel	1		4		
Dump Truck	350	Diesel	1		NA		
Concrete Mixer Truck	425	Diesel	7		NA		
Subtransmission Civil Crew (Construction Road Maintenance)							
Motor Grader	148	Diesel	1	298	8	4	3/1/2027–2/26/2028
Water Truck	350	Diesel	1		NA		
1-Ton Truck 4x4	300	Diesel	1		NA		
Subtransmission Structures and Distribution Components Installation							
Three-Quarter-Ton Truck 4x4	275	Gasoline	7	101	NA	42	6/1/2026–9/30/2026
Boom/Crane Truck	367	Diesel	7		6		
Flatbed Pole Truck	400	Diesel	1		NA		
Water Truck	350	Diesel	2		NA		
Backhoe/Front Loader	125	Diesel	4		8		
Manlift/Bucket Truck	250	Diesel	14		8		
1-Ton Truck 4x4	300	Diesel	7		NA		
Compressor Trailer	60	Diesel	1		4		
R/T Crane	367	Diesel	7		8		
Jet A Fuel Truck	300	Diesel	1		NA		
Helicopter Support Truck	300	Diesel	1		NA		
Light- or Medium-Duty Helicopter	NA	Jet A	1		6		

Primary Equipment Description	HP	Fuel Type	Primary Equipment Quantity	Schedule (days)	Hours/ Day[1]	Estimated Workforce	Start and End Dates[2]
Conductor/Cable Installation							
Three-Quarter-Ton Truck 4x4	275	Gasoline	7	235	NA	42	10/1/2026–7/14/2027
1-Ton Truck 4x4	300	Diesel	7		NA		
Manlift/Bucket Truck	250	Diesel	14		8		
Boom/Crane Truck	367	Diesel	7		8		
Dump Truck	350	Diesel	1		NA		
Wire Truck/Trailer	82	Diesel	2		8		
Sock Line Puller	82	Diesel	2		8		
Bull Wheel Puller	82	Diesel	1		8		
Hydraulic Rewind Puller	82	Diesel	1		8		
Static Truck/Tensioner	82	Diesel	2		8		
Backhoe/Front Loader	125	Diesel	4		4		
Track-Type Dozer	350	Diesel	2		8		
Water Truck	350	Diesel	2		NA		
Jet A Fuel Truck	300	Diesel	1		NA		
Helicopter Support Truck	300	Diesel	1		NA		
Light- or Medium-Duty Helicopter	NA	Jet A	1		8		
Conductor Splicing Rig	82	Diesel	1		8		
Fiber Splicing Lab	82	Diesel	1		8		
Subtransmission—Cable Splicing							
Manlift/Bucket Truck	250	Diesel	1	31	9	3	7/15/2027–8/19/2027
Splice Lab Truck	350	Diesel	1		NA		
Foreman Truck	300	Diesel	1		NA		
Subtransmission—Restoration							
1-Ton Truck 4x4	300	Diesel	2	81	NA	7	8/20/2027–11/27/2027
Backhoe/Front Loader	125	Diesel	1		8		
Motor Grader	148	Diesel	1		4		
Water Truck	350	Diesel	1		NA		
Drum-Type Compactor	100	Diesel	1		4		
Lowboy Truck/Trailer	500	Diesel	1		NA		

NOTES: HP = horsepower; NA = not applicable; R/T = rough-terrain.

1. Hours per day reflect on-site equipment use hours, which is not directly applicable to vehicles such as trucks and trailers that would primarily operate off-site travelling to and from a given Project site.
2. The scheduled start and end dates may be adjusted to reflect the actual date of Project approval.

SOURCE: SCE 2023a and 2024a

TABLE 2-8
ANTICIPATED SUBSTATION CONSTRUCTION EQUIPMENT AND WORKFORCE

Primary Equipment Description	HP	Fuel Type	Primary Equipment Quantity	Schedule (Days)	Hours/ Day[1]	Estimated Workforce	Start and End Dates[2]
Cal City Substation Civil Crew (Site Grading)							
Water Truck	350	Diesel	6	80	NA	6	3/2/2026–6/26/2026
Tractors/Backhoe	85	Diesel	2	80	5	2	
Grader	148	Diesel	2	60	5	2	
Dump Trucks	370	Diesel	4	60	NA	4	
Compactor	75	Diesel	3	70	5	3	
980 Loader Scraper	275	Diesel	3	70	7.5	3	
Survey Truck	345	Gasoline	1	30	NA	2	
Soils Test Crew Truck	345	Gasoline	1	60	NA	2	
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	3	120	NA	8	
Cal City Substation Civil Crew (Channel Installation and Additions)							
Water Truck	350	Diesel	2	80	NA	2	6/29/2026–10/30/2026
Tractors/Backhoe	85	Diesel	2	80	5	2	
Grader	148	Diesel	2	60	5	2	
Dump Truck	370	Diesel	4	60	NA	4	
Compactor	75	Diesel	1	70	5	1	
980 Loader Scraper	275	Diesel	1	40	7.5	1	
Excavator	172	Diesel	1	40	7.5	2	
Survey Truck	345	Gasoline	1	70	NA	2	
Soils Test Crew Truck	345	Gasoline	1	60	NA	2	
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	4	80	NA	8	
Cal City Substation Civil Crew (Foundation)							
Driller	83	Diesel	2	80	7.5	4	7/6/2026–12/31/2026
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	3	120	NA	8	
14-Ton Crane	270	Diesel	2	60	7.5	4	
Dump Trucks	370	Diesel	4	80	NA	4	
Tractors/Backhoe	85	Diesel	2	80	7.5	2	
Forklift	174	Diesel	2	100	5	2	
Ditch Digger	13	Diesel	1	80	5	1	
Generator	13.5	Diesel	2	20	7.5	0	
Cal City Substation Electrical Crew							
Truck Crane	367	Diesel	2	60	7.5	2	1/4/2027–10/1/2027
Foreman Truck	345	Gasoline	1	180	NA	1	
Manlifts	60	Diesel	4	140	7.5	4	
5-Ton Truck	220	Gasoline	1	100	NA	1	
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	4	180	NA	10	
14-Ton Crane	270	Diesel	2	80	7.5	2	

Primary Equipment Description	HP	Fuel Type	Primary Equipment Quantity	Schedule (Days)	Hours/ Day[1]	Estimated Workforce	Start and End Dates[2]
Forklift	174	Diesel	2	120	5	2	
150-Ton Crane	367	Diesel	1	40	7.5	1	
Cal City Substation Maintenance Crew							
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	1	40	NA	2	7/19/2027–9/10/2027
Gas Processing Trailer	NA	NA	1	30	7.5	0	
Cal City Substation Test Crew							
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	1	40	NA	2	7/19/2027–9/10/2027
Cal City Substation Test Crew and Wireman (Cutover)							
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	1	40	NA	2	9/13/2027–10/8/2027
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	1	40	NA	2	
Cal City Substation Demolition—Test Crew							
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	1	10	NA	2	10/18/2027–10/29/2027
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	1	10	NA	4	
Cal City Substation Demolition—Maintenance Crew							
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	1	10	NA	2	10/18/2027–10/29/2027
Gas/Processing Trailer	NA	NA	1	10	7.5	0	
Cal City Substation Demolition—Electrical Crew							
Truck Crane	367	Diesel	2	20	7.5	2	11/1/2027–12/31/2027
Foreman Truck	345	Gasoline	1	60	NA	1	
Manlifts	60	Diesel	4	40	7.5	4	
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	4	60	NA	10	
14-Ton Crane	270	Diesel	2	15	7.5	4	
Forklift	174	Diesel	2	60	5	2	
150-Ton Crane	367	Diesel	1	10	7.5	2	
Cal City Substation Demolition—Civil Crew							
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	3	60	NA	8	1/3/2028–3/24/2028
Dump Trucks	370	Diesel	4	60	NA	4	
Tractors/Backhoe	85	Diesel	3	60	7.5	3	
Forklift	174	Diesel	2	60	5	2	
Holgate Switchyard Civil Crew							
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	4	20	NA	10	4/26/2027–5/4/2027
Tractors/Backhoe	85	Diesel	1	20	5	1	
Ditch Digger	13	Diesel	1	10	5	1	
Dump Trucks	370	Diesel	1	20	NA	1	

Primary Equipment Description	HP	Fuel Type	Primary Equipment Quantity	Schedule (Days)	Hours/ Day[1]	Estimated Workforce	Start and End Dates[2]
Holgate Switchyard Electrical Crew							
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	4	20	NA	10	5/5/2027–5/28/2027
14-Ton Crane	270	Diesel	1	15	5	2	
Manlifts	60	Diesel	1	15	7.5	1	
Forklift	174	Diesel	1	20	5	1	
Gas Processing Trailer	NA	NA	1	5	7.5	0	
Kramer Substation Civil Crew (Foundations)							
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	4	45	NA	8	3/15/2027–4/30/2027
14-Ton Crane	270	Diesel	1	10	7.5	1	
Dump Trucks	370	Diesel	1	40	NA	1	
Tractors/Backhoe	85	Diesel	1	40	7.5	1	
Forklift	174	Diesel	1	40	5	1	
Ditch Digger	13	Diesel	1	20	5	1	
Kramer Substation Electrical Crew							
Foreman Truck	345	Gasoline	1	90	NA	1	5/3/2027–9/24/2027
Manlifts	60	Diesel	2	80	7.5	2	
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	4	90	NA	10	
14-Ton Crane	270	Diesel	1	60	7.5	3	
Forklift	174	Diesel	1	60	5	1	
Gas Processing Trailer	NA	NA	1	5	7.5	0	
Edwards Substation Civil Crew (Foundations)							
Truck Drill Rig	130	Diesel	1	8	7.5	2	2/1/2027–4/2/2027
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	6	60	NA	13	
14-Ton Crane	270	Diesel	1	30	7.5	1	
Dump Trucks	370	Diesel	2	40	NA	2	
Tractors/Backhoe	85	Diesel	1	40	7.5	1	
Forklift	174	Diesel	1	50	5	1	
Ditch Trencher	13	Diesel	1	40	5	1	
Edwards Substation Electrical Crew							
Manlifts	60	Diesel	2	60	7.5	2	4/5/2027–10/8/2027
Three-Quarter-Ton Crew Pickup Truck	345	Gasoline	7	80	NA	17	
14-Ton Crane	270	Diesel	1	35	7.5	2	
Forklift	174	Diesel	1	60	5	1	
150-Ton Crane	300	Diesel	1	20	7.5	2	
Gas/Processing Trailer	NA	NA	1	8	7.5	0	

NOTES: HP = horsepower; NA = not applicable; R/T = rough-terrain.

1. Hours per day reflect on-site equipment use hours, which is not directly applicable to vehicles such as trucks and trailers that would primarily operate off-site travelling to and from a given Project site.
2. The scheduled start and end dates may be adjusted to reflect the actual date of Project approval.

SOURCE: SCE 2023a

2.8 Post-construction

2.8.1 Configuring and Testing

Before SCE would energize the proposed new subtransmission lines, portions of the existing lines may be de-energized during the construction period. This would be necessary to connect the new conductor in that portion to the existing system. To reduce the need to interrupt electric service, de-energizing and re-energizing of the existing lines may occur at night when electrical demand is low. Relays would be reprogrammed and tested at all Project substations and the switchyard.

2.8.2 Demobilization and Site Restoration

Construction debris would be removed from construction work areas and staging areas throughout the duration of the Project. Construction debris would be removed in light-duty vehicles (e.g., pickup trucks) and heavy-duty vehicles (e.g., dump trucks, flatbed trailers). Initial demobilization of construction areas would consist of the removal of any and all remaining construction materials (including packaging and trash) and mobile equipment in locations where no intensive surface preparation occurred. Construction-related BMPs (if not needed as part of site restoration) would also be removed, followed by restoration/stabilization of the Project sites. In each staging area, all stationary equipment (e.g., office trailers, generators) and remaining construction-related material would be removed, as would all mobile equipment not needed for demobilization of the staging area. The staging area would then be returned to its preconstruction condition or would be subject to restoration as described below.

After Project construction and initial demobilization, site restoration would consist of cleanup of all areas temporarily disturbed by construction to a condition as close as feasible to preconstruction conditions. These areas include access roads, staging areas, construction work areas, pull-and-tension stringing sites, and splicing sites.

Construction work areas and staging areas would be stabilized after construction; such stabilization could include seeding disturbed areas. In areas where Project construction would disturb sensitive habitats, restoration and/or revegetation would be performed after construction is complete, consistent with habitat restoration and/or revegetation plan(s) developed by SCE in consultation with the appropriate resource agencies. For additional information regarding the habitat restoration and/or revegetation measures that would be implemented as part of the Project, see Sections 2.12.1 and 2.12.2.

Restoration of natural drainages and ephemeral washes, if affected during Project construction, would consist of returning site contours to their preconstruction conditions to restore the preexisting hydrological function of the drainage system. SCE would obtain all necessary permits and authorizations before construction in drainages. SCE has committed to compliance with all conditions of approval identified in permits and authorizations. Restoration of natural drainage patterns outside of drainages would be accomplished by restoring in place temporarily disturbed areas to pre-Project contours.

The Project would be constructed parallel to Rudnick Boulevard, which is an existing City of California City Designated Trail, and multiple other roads used for off-highway vehicle activities in the vicinity of Twenty Mule Team Parkway. Public trails would be restored to their approximate preconstruction condition to the extent feasible after the completion of construction. Access and spur roads would be maintained and used for O&M activities. Should any damage to landscaping (outside of SCE easements) on private parcels occur, SCE would make suitable compensation for that damage (negotiated on a case-by-case basis).

2.9 Operation and Maintenance

Ongoing Project O&M activities would be necessary to ensure reliable service, as well as the safety of the utility workers and the general public, as mandated by CPUC. SCE facilities are subject to Federal Energy Regulatory Commission jurisdiction. SCE transmission facilities are under the operational control of the California Independent System Operator. SCE currently performs O&M activities at existing substations and the switchyard and along existing SCE ROWs that are included as part of the Project. In addition to regular O&M activities, SCE conducts a wide variety of emergency repairs in response to emergency situations, such as damage resulting from high winds, storms, fires, other natural disasters, and accidents. Such repairs could include replacement of downed structures or lines, or re-stringing conductors. Emergency repairs could be needed and take place at any time. Emergency repair and other infrastructure replacement activities associated with infrastructure installed as part of the Project would be regulated by General Order 131-E either under blanket coverage as a separate CPUC ministerial review or as a subsequent CPUC discretionary action review. Therefore, such activities described below are for information purposes only and are not evaluated in the environmental analysis of this EIR.

Maintenance of the subtransmission lines proposed as part of the Project would occur in a manner consistent with ruling standards for the operation and maintenance of transmission lines identified in CPUC General Orders 95 and 128 as applicable, along with applicable federal, state, and local requirements. SCE would also operate and maintain the Project in a manner consistent with its 2023-2025 Wildfire Mitigation Plan (see PEA Appendix J; SCE 2024c).

2.9.1 Systems Control and Operation Personnel

The systems and methods used for monitoring and control of the substations/switchyard and the subtransmission and telecommunications lines included as part of the Project would not change as a result of the Project. Normal operation of the substations and lines would be controlled remotely through SCE’s control systems and manually in the field as required. All existing substations and the switchyard that would be modified by the Project are unmanned and would continue to function as remotely controlled. No new additional personnel would be required for O&M activities. The SCE-maintained Energy Management System allows SCE to monitor and respond to alarms as the system’s status changes. All workstation users can perform supervisory control of remote station equipment within their jurisdictional areas.

Remote SCE substations and switchyards with supervisory control are equipped with a programmable logic controller integrated with a substation automation system or remote terminal unit. All automatic functions and data acquisition are performed by the substation automation system or remote terminal unit. When a station is managed through supervisory controls, controllable points can be initiated from the switching center with operational jurisdiction.

2.9.2 Inspection Programs

2.9.2.1 Substations

The existing maintenance programs implemented for the Project's substations and switchyard would not change as a result of the Project. Substation and switchyard personnel inspect unattended substations and the switchyard when there is an indication of trouble. For transformers, substation and switchyard personnel perform a yearly visual inspection and a yearly dissolved-gas analysis and fluid quality oil test on all oil-filled compartments in accordance with General Order 174, *Rules for Electric Utility Substations*, which sets forth requirements for electric substation facilities regarding inspections. For circuit breakers, personnel perform yearly visual inspection. Personnel also perform a Predictive Maintenance Assessment inspection of the entire substations and switchyard via visual, infrared thermography, and ultrasonic inspection every 5 years for the Cal City Substation, Edwards Substation, and Holgate Switchyard, and every 3 years for the Kramer Substation.

2.9.2.2 Subtransmission and Telecommunications Lines

The existing inspection programs in effect within the Project area would be expanded to include the Project's subtransmission and telecommunications lines. SCE inspects subtransmission overhead facilities in a manner consistent with CPUC General Order 165, at minimum once per year via ground and/or aerial observation, but inspections usually occur more frequently based on system reliability purposes. The proposed telecommunications lines that would be located on subtransmission overhead facilities would be similarly inspected.

2.9.3 Maintenance Programs

2.9.3.1 Substations

Existing maintenance programs implemented for the Project's substations and switchyard would not be altered as a result of the Project. Routine circuit breaker and disconnect switching operations at remotely controlled stations would normally be performed by remote control on orders from the responsible switching center. Substation personnel are responsible for maintaining the correct status of all lines and equipment under their jurisdiction.

2.9.3.2 Subtransmission and Telecommunications Lines

Consistent with regulatory requirements (e.g., CPUC General Orders 95 and 128), maintenance would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles, trimming trees, controlling brush and weeds, and maintaining access roads. Most regular O&M activities of

overhead facilities are performed from existing access roads, with no surface disturbance. Repairs to existing facilities, such as repair or replacement of existing poles, could occur in undisturbed areas. Existing conductors could require re-stringing to repair damaged conductor and/or cable. Some pull-and-tension/stringing site locations could be in previously undisturbed areas, and at times, conductors and/or cable could be passed through existing vegetation on route to their destination. In some cases, poles may not have existing access roads and could be accessed on foot, by helicopter, or through the creation of temporary access areas. O&M-related helicopter activities could include transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor or OPGW stringing operations. Helicopter landing areas may be located in places where access by road is infeasible. In addition, helicopters may land within SCE ROWs, which could include landing on access or spur roads.

Insulators could require periodic washing with water to prevent the buildup of contaminants (e.g., dust, salts, droppings, smog, condensation) and reduce the possibility of electrical arcing, which can result in circuit outages and potential fire. The frequency of insulator washing is region specific and based on local conditions and buildup of contaminants. Insulators, hardware, and other components are replaced as needed to maintain circuit reliability.

Although attempts would be made to use previously disturbed areas to the greatest extent possible, pole locations and/or staging areas may be in previously undisturbed areas and could result in ground and/or vegetation disturbance. In some cases, new access would be created to remove and replace an existing pole. Wood pole testing and treating is a necessary maintenance activity conducted to evaluate the condition of wood structures both above and below ground level. Intrusive inspections require the temporary removal of soil around the base of the pole, usually to a depth of approximately 12–18 inches, to check for signs of deterioration. Roads and trails are used for access to poles. All soil removed for intrusive inspections would be reinstalled and compacted at completion of the testing.

2.9.3.3 Access Road Maintenance

Routine maintenance of access roads would be conducted annually and/or as needed. Maintenance of access roads includes maintaining a vegetation-free corridor (to facilitate access and for fire prevention) and blading to smooth over washouts, eroded areas, and washboard surfaces as needed. Access road maintenance could include brushing (i.e., trimming or removing vegetation) approximately 2–5 feet beyond berms or the road edge when necessary to keep vegetation from intruding into the roadway. Road maintenance would also include cleaning ditches, moving and establishing berms, clearing and making functional drain inlets to culverts, repairing culverts, clearing and establishing water bars, controlling dust, and cleaning and repairing over-side drains. Access road maintenance would also involve repairing, replacing, and installing stormwater diversion devices as needed. Water demand associated with access road maintenance for dust control is expected to total approximately 2.2 acre-feet per year and would be supplied by local water providers in the Project area, including the City of California City or local water purveyors served by larger wholesalers, such as the Antelope Valley–East Kern Water Agency or Mojave Water Agency (SCE 2023b).

2.9.3.4 Vegetation Management

SCE would maintain vegetation-free access roads and clearances around electrical lines. Clearance of brush and weeds around structures that may be required by applicable regulations on ROWs is necessary for fire protection. A 10-foot radial clearance around nonexempt poles (as defined by California Code of Regulations Title 14, Article 4) is maintained in accordance with Public Resources Code Section 4292.

Regular tree pruning would be performed to maintain clearance requirements in compliance with existing federal and state laws, rules, and regulations and is crucial for maintaining reliable service, especially during severe weather or disasters. Tree pruning standards for distances from overhead lines have been set by CPUC (General Order 95, Rule 35); Public Resources Code Section 4293; California Code of Regulations Title 14, Article 4; and other government and regulatory agencies. SCE's standard approach to tree pruning during O&M activities is to remove at least the minimum required by law plus 1 year's worth of growth (species dependent).

2.10 Decommissioning

There are currently no plans for SCE to abandon the subtransmission, telecommunications, distribution, or substation facilities; therefore, no decommissioning or plans for disposal, recycling, or future abandonment of the new facilities described in this chapter are included as part of the Project.

2.11 Permits and Approvals

2.11.1 Anticipated Permits

The federal and state discretionary permits that are anticipated to be required to construct and/or operate the Project are identified in **Table 2-9**, *Anticipated Permits and Approvals*. Ministerial permits, including encroachment permits from Caltrans or local agencies, are not listed in Table 2-9.

2.11.2 Right-of-Way or Easement Applications

Applications for new permanent ROW grants over federal and state lands would be submitted by SCE. SCE would apply for and obtain the following TUPs over public lands for construction work areas located outside its existing ROW grants; such TUPs would be applied for and obtained before construction.

- Right-of-entry permits would be secured from BLM and CDFW for preconstruction work.
- SCE would acquire temporary licenses/site approvals from DoD for temporary construction work areas.
- SCE would acquire new ROW grants from BLM as needed, following proposed routes.
- SCE would acquire new easements from CDFW and DoD as needed, following proposed routes.

TABLE 2-9
ANTICIPATED PERMITS AND APPROVALS

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
Federal						
U.S. Bureau of Land Management	Right-of-way grant	Federal Land and Policy Management Act/National Environmental Policy Act	Federal lands	Use of federal lands managed by BLM for a transmission line, typically constituting a major federal action, which triggers NEPA	Right-of-Way Application: "Application for Transportation and Utility Systems and Facilities on Federal Lands." Arrange a pre-application meeting with a BLM Realty Specialist or appropriate staff member. Submit completed application to the appropriate BLM office. If it is determined that NEPA is required, either an EA or an EIS would be prepared. The NEPA document may be prepared jointly with the CEQA document.	BLM attempts to review completed applications within 60 days of submittal. Full timing is often dependent upon what level of NEPA analysis is required. BLM has indicated that an EA will be prepared for the Project's NEPA analysis (BLM 2025). An EA is typically 9–12 months. The NEPA process for the Project is occurring concurrently with the CEQA process.
U.S. Fish and Wildlife Service	Programmatic Biological Opinion (BO)	Federal Endangered Species Act	Federally listed species	Potential impact on a federally listed threatened or endangered species	Activity Request Form prepared and submitted to BLM. The report includes a description of the Project, acres of habitat anticipated to be affected, and a list of proposed conservation and management actions that would be implemented. Results of desert tortoise protocol surveys will be appended to the Activity Request Form.	For projects affecting more than 10 acres of habitat or that would involve ongoing impacts on desert tortoises associated with transportation, the USFWS Division Chief would respond within 30 days by signing and returning the Activity Request Form. BLM will not authorize or implement such projects until it receives notification from USFWS. Separate coverage under the existing DoD BO for activities on EAFB (Biological Opinion for Operations and Activities at Edwards Air Force Base, California [8-8-14-F-14]) may require separate coordination. If the Project does not qualify for coverage under the DoD BO, separate Section 7 consultation may be required.

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
U.S. Department of Defense, Edwards Air Force Base	Easement Acquisition	Federal Land and Policy Management	Use of lands under federal DoD jurisdiction	Federal lands under the jurisdiction of DoD; NEPA process	AF813 and Easement Acquisition: Submit an AF813 Request for Environmental Impact Analysis. Arrange a pre-application meeting with EAFB. Submit easement request to EAFB Realty Department. An Environmental Baseline Survey may be required for an easement and NEPA document.	Easement acquisition is dependent on the level of NEPA review: typically, 9–12 months for a NEPA EA, 18 months for a NEPA EIS.
State						
California Department of Fish and Wildlife	Sections 1600–1617 Lake and Streambed Alteration Agreement	California Fish and Game Code	All perennial, intermittent, and ephemeral rivers, streams, and lakes in California	Required if a project will: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.	The LSAA requires a description of proposed activities within CDFW jurisdictional features, grading and earthmoving quantities, anticipated restoration, and avoidance and minimization measures to be implemented.	4–6 months from time the application is deemed complete; initial review period for CDFW is 30 days; 60 days for a complete application. Once a draft agreement is issued, the project applicant must review, sign, and return it to CDFW for the agreement to be valid. CDFW is required to review the CEQA document for consistency; therefore, the Notice of Determination must be filed before the LSAA will be issued.
California Department of Fish and Wildlife	California Fish and Game Code Section 2080.1 Consistency Determination	California Fish and Game Code Section 2080.1	State-listed species	Required if the project may result in take of species that are both federally and state listed (e.g., desert tortoise)	Applicant requests that CDFW review the USFWS BO issued by USFWS to BLM to determine whether conservation measures listed in the BO also meet state policies for the protection of state-listed species.	CDFW has 30 days from receipt of the request to review the USFWS BO and issue a consistency determination.

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
California Department of Fish and Wildlife	California Fish and Game Code Section 2081 Take Permit	California Fish and Game Code Section 2081	State-listed species	Required if the project may result in take of a state-only listed endangered or threatened species (e.g., Mohave ground squirrel, western Joshua tree)	Submit application to CDFW and identify mitigation measures to reduce, avoid, and minimize the potential for take of listed species.	Timeline for authorization ranges from 30 to 90 days, depending on the species involved and the project's complexity.
State Water Resources Control Board/Regional Water Quality Control Board	Section 402 National Pollutant Discharge Elimination System Construction General Permit coverage	Federal Clean Water Act; Order 2009-0009 DWQ, as amended	Waters of the United States	Project that involves 1 or more acres of land disturbance during construction activities	Proponent files Notice of Intent; develops and implements a stormwater pollution prevention program, including water quality monitoring.	1 week following issuance of waste discharger identification number following payment of fees and registration of permit documents.
State Water Resources Control Board/Regional Water Quality Control Board	Waste Discharge Requirements	California Code of Regulations Title 27, Section 20005 et seq.	Non-federally jurisdictional wetlands and waterways	Dredge and fill activities in non-federally jurisdictional wetlands and waterways	The WDR application requires information similar to that required for the LSAA application, including a project description. At the request of the RWQCB, a restoration plan may be required.	Preparation of the WDR application may occur concurrently with preparation of the LSAA application. Issuance of the WDR occurs approximately 3–6 months from the time the application is deemed complete, depending on the level of impacts on waters of the state. Because the RWQCB is also required to review the CEQA document for consistency, permits cannot be issued until the Notice of Determination is filed.

NOTES: BLM = U.S. Bureau of Land Management; BO = Biological Opinion; CDFW = California Department of Fish and Wildlife; CEQA = California Environmental Quality Act; DoD = U.S. Department of Defense; EA = environmental assessment; EAFB = Edwards Air Force Base; EIS = environmental impact statement; LSAA = Lake and Streambed Alteration Agreement; NEPA = National Environmental Policy Act; RWQCB = Regional Water Quality Control Board; USFWS = U.S. Fish and Wildlife Service; WDR = Waste Discharge Requirements

SOURCE: SCE 2023a

2.12 Applicant Proposed Measures and Proposed Best Management Practices

2.12.1 Applicant Proposed Measures

SCE proposes to implement certain Project design features referred to as "Applicant proposed measures" or APMs to avoid or reduce impacts of the Project. The APMs listed below are considered part of the Project for the purposes of this California Environmental Quality Act (CEQA) analysis. These Project features are also discussed in the context of the relevant environmental issue area analyses presented in **Chapter 3**, *Environmental Analysis of the Project.*

APM AES-1: Glare and Color Contrast Reduction for Subtransmission Structures and Conductors. To reduce potential significant impacts associated with glare and color contrast for components of the Proposed Project, the finish on all new subtransmission structures will be non-reflective, such as steel that has been galvanized and treated to create a dulled finish or color treated or other functionally equivalent product/process. These types of finishes are designed to reduce light reflection and color contrast and help blend the structures into the landscape setting. All new subtransmission conductors shall be non-specular and non-reflective and the insulators shall be non-reflective and non-refractive to help reduce glare and minimize contrast with the surrounding environment.

APM AES-2: Substation Visual Treatments. To minimize potential significant aesthetic impacts associated with expansion of Cal City Substation, the applicant will prepare a surface treatment plan for the aboveground non-steel structural elements associated with the substation. Colors will be selected according to their ability to reduce the aesthetic impact of the substation and ancillary infrastructure. All color finishes will be flat and non-reflective. The applicant will consult with the City of California City prior to the submittal of the plan to the California Public Utilities Commission (CPUC) 60 days prior to start of construction for comments and approval.

APM AIR-1: Tier 4 Construction Equipment. All construction equipment with rating between 100 and 750 hp will be required to use engines compliant with EPA Tier 4 non-road engine standards. In the event a Tier 4 engine is not available for any off-road construction equipment with rating at or higher than 100 hp, that documentation of the unavailability will be provided.

APM AIR-2: Dust Control. During construction, fugitive dust will be controlled by implementing the following measures:

- Surfaces disturbed by construction activities will be covered or treated with a dust suppressant or water until the completion of activities at each site of disturbance.
- Inactive, disturbed (e.g., excavated or graded areas) soil and soil piles will be sufficiently watered or sprayed with a soil stabilizer to create a surface crust, or will be covered.
- Drop heights from excavators and loaders will be minimized to a distance of no more than 5 feet. Vehicles hauling soil and other loose material will be covered with tarps or maintain at least 6 inches of freeboard.

- Vehicles will adhere a speed limit of 15 miles per hour on Project-specific construction routes and within temporary work areas.

APM BIO-GEN-1: Pre-construction biological clearance surveys and monitoring. Pre-construction clearance surveys will be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, to avoid or minimize impacts on special-status plants and wildlife species, habitat, nesting birds and other sensitive biological resources in areas with the potential for resources to be present. Sensitive resources identified during the clearance survey will be either:

- flagged for avoidance;
- moved to outside impact areas;
- avoided by implementing procedures to avoid impacts to individuals while impacting habitat (e.g., burrows, dens, etc.);
- or documented based on permit authorizations.

Specific details on the pre-construction survey requirements may be found within measures for each individual species. Where special-status species (e.g., reptiles, birds, mammals, and bat roosts) or unique resources (defined by regulations and local conservation plans) are known to occur and there is a potential for significant impacts, qualified biologists will monitor construction activities to ensure that impacts to special-status species, sensitive vegetation types, wildlife habitat, and unique resources are avoided and minimized.

APM ENV-GEN-1 WEAP: Worker's Environmental Awareness Training Program. All workers on the Proposed Project site shall be required to attend a Worker's Environmental Awareness Training Program (WEAP). Training shall inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. The WEAP training will include, at a minimum, the following topics so crews will understand their obligations:

- ESA boundaries
- Housekeeping (Trash and equipment cleaning)
- Safety
- Work stoppage
- Communication Protocol
- Consequences of non-compliance

APM BIO-AVI-2: Nesting Bird Management Plan. SCE shall prepare a Nesting Bird Management Plan (NBMP) in coordination with the CPUC, Bureau of Land Management (BLM), CDFW, and USFWS. The NBMP shall describe methods to minimize potential Proposed Project effects to nesting birds and avoid any potential for unauthorized take. Proposed Project-related disturbance including construction and pre-construction activities shall not proceed within

300 feet of active nests of common bird species or 500 feet of active nests of raptors or special-status bird species (except for golden eagle as described in APM BIO-AVI-4) until approval of the NBMP by the CPUC and BLM in consultation with the CDFW and USFWS.

NBMP Content. The NBMP shall include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species; (2) a notification procedure for buffer distance reductions should they become necessary; (3) a rigorous monitoring protocol, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any Proposed Project-related effects to nesting birds will be minimized; and (4) a protocol for documenting and reporting any inadvertent contact or effects to birds or nests. The paragraphs below describe the NBMP requirements in further detail.

Background. The NBMP shall include the following:

1. A summary of applicable state and federal laws and regulations, including definition of what constitutes a nest or active nest under state and federal law.
2. A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations.
3. A list of bird species potentially nesting on or near the ROW or other work areas, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species. This section will also note any species that do not require avoidance measures (e.g., rock pigeons).
4. A list of the types of Proposed Project construction activities that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity.
5. Clearing of any vegetation, site preparation in open or barren areas, or other Proposed Project-related activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible.

Pre-construction nest surveys. Pre-construction nest surveys will be conducted prior to any construction activities scheduled during the breeding period. For the Proposed Project, the breeding period will be defined as January 1 through August 31. The NBMP shall describe the proposed field methods, survey timing, and qualifications of field biologists. Field biologist qualifications will be subject to review by the CPUC and BLM. The avian biologists conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Nest surveys will focus on visual searches for nest locations and observations of bird activities and movement to detect nesting activity (e.g., carrying nest materials or food, territorial displays, courtship behavior). Surveys shall be conducted in accordance with the following guidelines.

1. Surveys shall cover all potential nesting habitat within the ROW or other work areas within 500 feet of these areas for raptors and 300 feet for non-raptors.
2. Pre-construction surveys shall be conducted for each work area, no longer than 10 days prior to the start of construction activity. On the first day of construction at any given site, a qualified Avian Biologist will perform a pre-construction “sweep” to identify any bird nests or other resources that may have appeared since the 10-day survey.

3. SCE shall provide the CPUC and BLM a report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity of the surveyor(s); a list of species observed; and electronic data identifying nest locations and the boundaries of buffer zones. The electronic data set will be updated following each preconstruction nest survey throughout the nesting season. The format and contents of this report will be described in the draft NBMP and will be subject to review and approval by the CPUC and BLM.

Nest Buffers and Acceptable Activities. The NBMP shall specify measures to delineate buffers on the work site, to consist of clearly visible marking and signage. Buffer locations shall be communicated to the construction contractor and shall remain in effect until formally discontinued (when each nest is no longer active). In addition, the NBMP shall specify measures to ensure the buffers are observed, including a direct communication and decision protocol to stop work within buffer areas. In some cases, active nests may be found while work is underway. Therefore, the NBMP shall include a protocol for stopping ongoing work within the buffer area, securing the work site, and removing personnel and equipment from the buffer.

The NBMP shall describe proposed measures to avoid take or adverse effects to nests, such as buffer distances from active nests. These measures shall be based on the specific nature of the bird species and conservation status, and other pertinent factors. The NBMP will identify bird species (or groups of species) that are relatively tolerant or intolerant of human activities and specify smaller or larger buffer distances as appropriate for each species. If no information is available to specify a buffer distance for a species, then the NBMP shall specify 300 feet as a standard buffer distance, and 500 feet for raptors and special-status species. Nest management for listed threatened or endangered species will be prescribed in a USFWS Biological Opinion, CDFW Incidental Take Permit, or both. All applicable avoidance measures, including buffer distances, must be continued until nest monitoring (below) confirms that the nestlings have fledged and dispersed, or the nest is no longer active. For each special-status species potentially nesting within or near Proposed Project work areas, the NBMP shall specify applicable buffers and any additional nest protection measures, specialty monitoring, or restrictions on work activities, if needed.

The NBMP shall identify acceptable work activities within nest buffers (e.g., pedestrian access for inspection or BMP repair) including conditions and restrictions, and any monitoring required. The NBMP shall include pictorial representation showing buffer distances for ground buffers, vertical helicopter buffers, and horizontal helicopter buffers for nests near the ground and nests in towers.

Nest Buffer Modification or Reduction. At times, SCE or its contractor may propose buffer distances different from those approved in the NBMP. Buffer adjustments shall be reviewed and recommended by a qualified avian biologist, who has been approved by the CPUC and BLM in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying the CPUC, BLM, CDFW, and USFWS of any planned adjustments to nest buffers. Separate and distinct procedures will be provided for special-status birds. The NBMP will list the information to be included in buffer reduction notifications in a standardized format.

Nest deterrents. The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on Proposed Project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials,

vehicles, and equipment. It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals. In the event that an active nest is located on Proposed Project facilities, materials or equipment, SCE will avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active.

Communication. The NBMP shall specify the responsibilities of construction monitors in regards to nests and nest issues, and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communicated from nest monitors to construction monitors, so that any needed actions can be taken immediately.

The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also shall describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP will specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval and approval process prior to removal.

Monitoring. SCE shall be responsible for monitoring the implementation, conformance, and efficacy of the avoidance measures (above). The NBMP shall include specific monitoring measures to track any active bird nest within or adjacent to Proposed Project work areas, bird nesting activity, Proposed Project-related disturbance, and outcome of each nest. For nests with reduced buffers, SCE shall monitor each nest until nestlings have fledged and dispersed or until the nest becomes inactive. Nests with default buffers do not require further monitoring once construction work is completed in the area. New nests discovered after work completion in an area will not require monitoring. In addition, monitoring shall include pre-construction surveys, daily sweeps of work areas and equipment, and any special monitoring requirements for particular activities (tree trimming, vegetation removal, etc.) or particular species (noise monitoring, etc.). Nest monitoring shall continue throughout the breeding season during each year of the Proposed Project's construction activities.

Reporting. Throughout the construction phase of the Proposed Project, nest locations, Proposed Project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to CPUC monitors on a daily basis in the Field Reporting Environmental Database (FRED). All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to CPUC monitors. In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, SCE will submit an annual NBMP report to the CPUC, BLM, CDFW, and USFWS.

***Implementation locations*:** Project-wide

APM BIO-AVI-3: Burrowing Owl

Pre-construction survey. A pre-construction, focused burrowing owl survey will be conducted no more than 30 days prior to initial start of construction within habitat to determine if any occupied burrows are present. If occupied burrows are found, adequate

buffers shall be established around burrows. Adequate buffers will be determined by a Project Avian Biologist based upon field conditions and resource agency guidelines for wintering burrows and breeding season burrows.

Prepare Burrowing Owl Management Plan. SCE will develop a Burrowing Owl Management Plan for the Proposed Project. The Plan will include information related to:

1. assessment of burrow suitability;
2. replacement burrows;
3. methods for relocation;
4. monitoring and reporting;
5. implementation locations.

Conduct surveys and avoidance for burrowing owl. Burrowing owl surveys shall be conducted in accordance with the most current CDFW guidelines (CDFG, 2012; or updated guidelines as they become available). SCE shall take measures to avoid impacts to any active burrowing owl burrow within or adjacent to a work area. The default buffer for a burrowing owl burrow is 300 feet for ground construction, and 300 feet horizontal and 200 feet vertical for helicopter construction. The Nesting Bird Management Plan will specify a procedure for adjusting this buffer, if needed. Binocular surveys may be substituted for protocol field surveys on private lands adjacent to the Proposed Project site only when SCE has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission.

If active burrowing owl burrows are located within Proposed Project work areas, SCE may passively relocate the owls, by preparing and implementing a Burrowing Owl Passive Relocation Plan, as described below. SCE shall prepare a draft Burrowing Owl Passive Relocation Plan for review and approval by CPUC and BLM in consultation with CDFW and USFWS prior to the start of any ground-disturbing activities. No passive relocation of burrowing owls shall be permitted during breeding season, unless a qualified biologist verifies through noninvasive methods that an occupied burrow is not occupied by a mated pair, and only upon authorization by CDFW. The Plan shall include, but not be limited to, the following elements:

*Assessment of Suitable Burrow Availability***.** The Plan shall include an inventory of existing, suitable, and unoccupied burrow sites within 300 feet of the affected Proposed Project work site. Suitable burrows will include inactive desert kit fox, ground squirrel, or desert tortoise burrows that are deep enough to provide suitable burrowing owl nesting sites, as determined by a qualified biologist. If two or more suitable and unoccupied burrows are present in the area for each burrowing owl that will be passively relocated, then no replacement burrows will need to be built.

*Replacement Burrows***.** For each burrowing owl that will be passively relocated, if fewer than two suitable unoccupied burrows are available within 300 feet of the affected Proposed Project work site, then SCE shall construct at least two replacement burrows within 300 feet of the affected Proposed Project work site, or in suitable locations within ¼ mile when suitable locations within 300 feet are not available. Burrow replacement sites shall be in areas of suitable habitat for burrowing owl nesting, and subject to minimal human disturbance and access. The Plan shall describe measures to ensure that

burrow installation or improvements would not affect sensitive species habitat or any burrowing owls already present in the relocation area. The Plan shall provide guidelines for creation or enhancement of at least two natural or artificial burrows for each active burrow within the Proposed Project disturbance area, including a discussion of timing of burrow improvements, specific location of burrow installation, and burrow design. Design of the artificial burrows shall be consistent with CDFW guidelines (CDFG, 2012; or more current guidance as it becomes available) and shall be approved by the CPUC, BLM, CDFW, and USFWS.

Methods. Provide detailed methods and guidance for passive relocation of burrowing owls, outside the breeding season. An occupied burrow may not be disturbed during the nesting season (generally, but not limited to, February 1 to August 31), unless a qualified biologist determines, by non-invasive methods, that it is not occupied by a mated pair. Passive relocation will include installation of one-way doors on burrow entrances that will let owls out of the burrow but will not let them back in. Once owls have been passively relocated, burrows will be carefully excavated by hand and collapsed by, or under the direct supervision, of a qualified biologist.

Monitoring and Reporting. Describe monitoring and management of the replacement burrow site(s), and provide a reporting plan. The objective shall be to manage the relocation area for the benefit of burrowing owls, with the specific goal of maintaining the functionality of the burrows for a minimum of two years. Monitoring reports shall be available to the CPUC and BLM on a weekly basis.

Implementation locations: Project-wide

APM BIO-HERP-1: Desert Tortoise

Pre-construction surveys/Construction monitoring. Prior to initial ground-disturbing activities, a biological monitor under the supervision of a USFWS- or CDFW-approved biologist—with experience monitoring and handling desert tortoise—will conduct a pre-activity survey in all work areas within potential desert tortoise habitat, plus an approximately 100-foot buffer. All desert tortoise burrows within the pre-activity survey area (including desert tortoise pallets) will be prominently flagged at that time so that they may be avoided during work activities.

An approved biologist will be onsite to monitor vegetation removal and grading and provide regular inspections of all other construction activities within desert tortoise habitat. The approved biologist will have the authority to halt all non-emergency actions (as soon as safely possible) that may result in harm to the desert tortoise and will assist in the overall implementation of APMs for the tortoise.

In the event a desert tortoise is encountered in the work area, all work will cease, and the approved biologist will be contacted. Work will not commence until the animal has voluntarily moved to a safe distance away from the work area. If it does not move on its own within 15 minutes, an authorized biologist may remove and relocate the animal to a safe location if authorized under existing permit conditions. No tortoise will be handled except under authorization from the USFWS and CDFW. Encounters with desert tortoise will be documented and provided to the appropriate wildlife resource agencies. In the event a dead or injured desert tortoise is observed, the approved biologist will be responsible for notifying SCE's Herpetologist and reporting the incident to the wildlife resource agencies.

Avoid and minimize impacts. All Proposed Project activities located within areas identified as desert tortoise habitat shall implement the following avoidance and minimization measures:

1. Under Vehicle Checks. Desert tortoises commonly seek shade during the hottest times of the day. Employees working within the geographic range of this species will be required to check under their equipment or vehicles before they are moved. If desert tortoises are encountered, the vehicle will not be moved until the tortoise has voluntarily moved away from the equipment or vehicle.
2. Disposal of Trash. Trash and food items will be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators, such as common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs (*Canis lupus familiaris*).
3. Pets Prohibited. Employees will not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant.
4. Vehicle Travel. During construction-related activities, motor vehicles will be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Proposed Project footprint. Motor vehicle speeds will not exceed 15 miles per hour on Proposed Project-specific construction routes and temporary work areas within habitat for desert tortoise.
5. Trapped Animal Prevention. All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to desert tortoise will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping animals. At the start and end of each workday, and just before backfilling, all excavations will be inspected for trapped animals. If found, trapped animals will be removed by the qualified biologist and relocated to outside the Proposed Project footprint, as required in all applicable permits or habitat conservation plans.

Coordinate with agencies. SCE will obtain take coverage and consult with the USFWS, CDFW, and/or land management agencies. In addition to obtaining the necessary permits and authorizations, which may include conducting protocol surveys as required by the agencies, the Proposed Project will be included in SCE's programmatic raven management plan upon completion of construction to minimize the effects of raven predation on desert tortoises as a result of SCE infrastructure.

APM BIO-MAM-1: Mohave Ground Squirrel

Coordinate with CDFW. SCE intends to apply for a state Incidental Take Permit (ITP) for Mohave ground squirrel through the California Department of Fish and Wildlife (CDFW). In collaboration with CDFW, SCE will develop construction minimization measures and habitat conservation measures during the 2081 (b) ITP consultation.

Permit conditions that will be implemented include, but are not limited to:

1. Relocation plan. An MGS relocation plan will be developed by SCE and approved by CDFW prior to the beginning of Proposed Project activities in identified MGS habitat. The relocation plan will include, but not be limited to, survey methods, timing, burrow excavation methods and implementation area, release locations, and identification of wildlife rehabilitation or veterinary facilities for injured animals. The designated biologist will be responsible for the capture, handling, and relocation of MGS.

2. Designated biologist. A qualified MGS biologist authorized by CDFW to handle MGS will be on-site or available for a same day response when Proposed Project activities occur in identified MGS habitat.
3. Biological monitors. Qualified biological monitors will monitor all construction activities in occupied habitat and areas adjacent to occupied habitat. The qualified biologist will have the authority to stop all activities with the potential to impact MGS. The qualified biologist will immediately contact the designated biologist for guidance in the event MGS are encountered. Work will not resume in that area until appropriate measures have been implemented.
4. Pre-construction surveys. Prior to initial ground-disturbing activities, a qualified MGS biologist will conduct pre-construction surveys within identified MGS habitat areas. The preconstruction surveys will identify MGS individuals or burrows for avoidance.
5. Burrow avoidance. A qualified biologist will demarcate [e.g., flagging, signage, fencing, construction maps, etc.] avoidance areas around MGS burrows as needed to prevent impacts.
6. Exclusion Fencing. Temporary Exclusion Fencing may be used to avoid MGS burrows or exclude MGS from work areas when necessary. The designated biologist will oversee exclusion fencing installation to ensure there are no impacts to MGS. The integrity of the exclusion fencing will be checked regularly and repaired as needed.
7. Vehicle Travel. During construction-related activities, motor vehicles will be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Proposed Project footprint. Motor vehicle speeds along Proposed Project specific construction routes and temporary work areas within MGS habitat will not exceed 15 miles per hour.
8. Trapped animal prevention. All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to MGS will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping animals. At the start and end of each workday, and just before backfilling, all excavations will be inspected for trapped animals. Any MGS found will be allowed to escape unimpeded. If an MGS is trapped and does not leave on its own, the designated biologist will move the animal according to the ITP conditions.
9. Cover Materials. All pipes or other construction materials or supplies shall be covered or capped in storage or laydown areas at the end of each workday to prevent entrapping animals. No pipes or tubing of sizes or inside diameters ranging from 3 to 10 inches shall be left open either temporarily or permanently. All pipes or other construction materials shall be inspected for wildlife prior to moving or installing. If present, MGS will be allowed to leave on their own accord or will be removed by the designated biologist according to the ITP conditions.
10. Trash disposal. Trash and food items will be contained in closed containers and removed daily to reduce attracting predators.
11. Pets Prohibited. Employees will not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant.

APM BIO-MAM-2: Desert Kit Fox Preconstruction Surveys. Surveys for desert kit fox shall be conducted within 14 days prior to the start of construction. The survey area shall include the Proposed Project disturbance areas plus a 300-foot buffer during the breeding season (February 1

through April 30) and a 100-foot buffer outside the breeding season. Potentially occupied burrows in Proposed Project disturbance areas and the survey buffer shall be mapped and Qualified Biologist(s) shall utilize tracking stations and/or wildlife cameras to determine whether the burrows are occupied. If a burrow is determined to be occupied by desert kit fox or other special-status mammal species during the breeding season, the burrow shall be demarcated with a 300-foot buffer. If a burrow is determined to be occupied outside the breeding season it shall be demarcated with a 100-foot buffer. Burrows determined to be unoccupied shall be demarcated with a 50-foot buffer. If occupied burrows are found in Proposed Project disturbance areas and cannot be avoided, Qualified Biologist(s) shall passively relocate the occupying animals through the use of one-way doors at burrow entrances that allow the animals to leave on their own. Once vacant, burrows shall be excavated by hand and collapsed. Passive relocation will be avoided from February 1 through April 30 and shall not occur while young are in the burrow and still dependent upon their parents. The CDFW shall be consulted prior to any relocation of desert kit fox during the breeding season. Additionally, the following measure will be implemented to minimize the likelihood of distemper transmission:

- Any documented kit fox mortality shall be reported to the CDFW within 24 hours of identification. If a dead kit fox is observed, it shall be retained and protected from scavengers until the CDFW determines if the collection of necropsy samples is justified.

APM BIO-RES-1: Develop and Implement Habitat Restoration Plan (HRP). Temporary impacts to regulated species' habitats, plant species, and vegetation communities shall be restored. Regulated species and vegetation communities include all species designated as threatened, endangered or rare, sensitive, or of concern by resource or land agencies. Species and vegetation communities that require restoration will be determined by the resource agencies through the permitting process.

Temporary impacts to all other categories of land such as private lands or disturbed areas (e.g., agricultural lands, existing roads, OHV trails, grazing areas, trash/dump site, etc.) shall only be subject to the requirements of the Storm Water Pollution Prevention Plan (SWPPP) and the Invasive Plant Management Plan (IPMP, APM BIO-RES-2). No additional goals, objectives, or success criteria regarding habitat condition are required for these sites.

SCE shall develop and implement a Habitat Restoration Plan (HRP). SCE will consult with appropriate agencies during development of the HRP and implement the HRP in conjunction with applicable permit conditions and mitigation measures. The HRP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction. Invasive plant management will be performed in conjunction with the HRP per the Invasive Plant Management Plan (BIO-RES-2).

Habitat Restoration Plan. For all restoration sites, the HRP shall include:

1. Restoration goals and objectives based on vegetation type and jurisdictional status of each site.
2. Quantitative restoration success criteria.

3. Implementation details as applicable. Details may include topsoil stockpiling and handling, postconstruction site preparation, soil decompaction and recontouring, planting and seeding palettes to include only native, locally sourced materials with confirmed ability to produce from suppliers, fall or other suitable season-season planting or seeding dates.
4. Maintenance details, which may include weeding, irrigation, or hand-watering schedule and equipment, and erosion control.
5. Monitoring and Reporting, specifying monitoring schedule and data collection methods throughout establishment of vegetation with key indicators of successful or unsuccessful progress, and quantitative criteria values to objectively determine success or failure at the conclusion of the monitoring period.
6. Adaptive management procedures such as reseeding, re-planting, drainage repairs, adjustments to irrigation schedule, and repair or remediation of sites to meet success criteria on schedule.

For species and vegetation communities with permit requirements including wetlands and riparian habitats, the goal of the HRP will be to restore plant species, habitat values, or vegetation communities. For restoration sites, the goals, objectives, and success criteria specified in the HRP will include native species cover and species richness compatible with the specific vegetation and habitat type.

If an unforeseen catastrophic event (e.g., flood, fire, or other event beyond SCE control) damages a restoration site within the monitoring period, SCE will assess adjacent areas to adjust maintenance activities and success standards in coordination with the agencies. In all areas, seed and/or potted nursery stock of locally native species will be used. The list of plants observed during botanical surveys of the Proposed Project area will be used as a guide to site-specific plant selection, additional appropriate species may be included.

Monitoring of the restoration sites will continue annually until HRP success criteria are achieved. SCE will be responsible for implementing adaptive management as needed.

For all restoration areas, SCE will provide annual reports to the CPUC and BLM to verify the total vegetation acreage subject to restoration, areas that have been completed, and areas still outstanding. The annual reports will also include a summary of the restoration and adaptive management activities for the previous year, success criteria progress and completion, and any adjustments to planned activities, for the upcoming year.

APM BIO-RES-2: Develop Invasive Plant Management Plan. SCE shall prepare and implement an Invasive Plant Management Plan (IPMP). This plan shall include measures designed to avoid the introduction and spread of new nonnative invasive plant species (invasive plants) and minimize the spread of existing invasive plants resulting from Proposed Project activities. The IPMP must meet the BLM's requirements for NEPA disclosure and analysis if herbicide use is proposed for the Proposed Project. The IPMP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction.

For the purpose of the IPMP, invasive plants shall include plants that (1) are invasive and rated high or moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC, 2006), or (2) aid and promote the spread of wildfires (such as *Bromus*

tectorum (cheatgrass), *Brassica tournefortii* (Sahara mustard), and *Bromus madritensis* spp. *rubens* (red brome)) or (3) are identified by the BLM as special concern. The IPMP will be implemented throughout Proposed Project pre-construction, construction, and restoration phases.

Invasive Plant Management Plan. The IPMP will include the information defined in the following sections:

Assessment. An assessment of the Proposed Project's potential to cause spread or the introduction of invasive plants into new areas, or to introduce new invasive plants into the ROW. This section will list known and potential invasive plants occurring on the ROW and in the Proposed Project region and identify threat rankings and potential for Proposed Project-related occurrence or spread for each species. This section will identify control goals (e.g., eradication, suppression, or containment) for invasive plants of concern with potential to occur on the ROW.

Pre-construction invasive plant inventory. SCE shall inventory all invasive plants of concern in areas (both within and outside the ROW) subject to Proposed Project-related vegetation removal/disturbance, "drive and crush," and ground-disturbing activity. The invasive plants inventory area shall also include vehicle and equipment access routes within the ROW and all Proposed Project staging and storage yards. Invasive plants of concern shall be mapped by area of occurrence and percent cover. The map will be updated with new occurrences at least once a year.

Pre-construction invasive plants treatment. Invasive plant infestations identified in the pre-construction invasive plants inventory shall be evaluated to identify potential for Proposed Project-related spread and potential benefits (if any) of pre-construction treatment. Pre-construction treatment will consider the specific invasive plants, potential seed banks, or other issues. The IPMP will identify any infestations to be controlled or eradicated prior to Proposed Project construction. Control and follow-up monitoring of pre-construction invasive plants treatment sites will follow methods identified in appropriate sections of the IPMP.

Prevention. The IPMP will specify methods to minimize potential transport of new invasive plant seeds onto the ROW, or from one section of the ROW to another. The ROW may be divided into "weed zones," based on invasive plants of concern in the ROW. The IPMP will specify inspection procedures for construction equipment entering the Proposed Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified sections of the ROW, and before leaving work sites where invasive plants of concern must be contained locally. Off road construction equipment shall be inspected to ensure it is free of any dirt or mud that could contain invasive plant seeds, roots, or rhizomes, and the tracks, outriggers, tires, and undercarriage will be carefully washed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that will be frequently entering and exiting the site will be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering Proposed Project work areas.

All vehicles will be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations (including air washing) will be set up at specified locations to clean equipment before it enters the work area. Wash stations will be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations will not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily

log must be kept stating the location, date and time, types of equipment, methods used, and personnel present. The log shall contain the signature of the responsible crewmember. Written or electronic logs shall be available to the BLM and CPUC monitors on request.

Erosion control materials (e.g., straw bales) must be certified free of invasive plant seed ("weed-free") before they are brought onto the site. The IPMP must prohibit on-site storage or disposal of mulch or green waste that may contain invasive plant material. Mulch or green waste will be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility.

The IPMP will specify guidelines for any soil, gravel, mulch, or fill material to be imported into the Proposed Project area, transported from site to site within the Proposed Project area, or transported from the Proposed Project area to an off-site location, to prevent the introduction or spread of invasive plants to or from the Proposed Project area.

***Monitoring*.** The IPMP shall specify methods to survey for invasive plants of concern during pre-construction, construction, and restoration phases; and shall specify qualifications of specialists responsible for invasive plant monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of new invasive plant infestations to prevent further spread. Surveying and monitoring for invasive plant infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season invasive plants. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control.

***Control*.** The IPMP must specify manual and chemical invasive plant control methods to be employed. The IPMP shall include only invasive plant control measures with a demonstrated record of success for target invasive plants, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any Proposed Project-related invasive plant infestation is located (e.g., located on a Proposed Project disturbance site), to ensure effective and timely invasive plant control. Invasive plant infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, or when appropriate with the goal to prevent further spread. All proposed invasive plant control methods must minimize disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage to any environmentally sensitive areas (ESAs) identified within or adjacent to the ROW. New infestations by invasive plants of concern will be treated at a minimum of once annually until eradication, suppression, or containment goals are met. Invasive plant occurrences can be considered eradicated when no new seedlings or resprouts are observed for three consecutive years, or a single season where new seedlings or resprouts are observed in reference populations but not at the control site. Invasive plant control efforts may cease when eradication is complete.

Manual control shall specify well-timed removal of invasive plants or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Kern County and San Bernardino County Agricultural Commissioners if such guidelines are available.

The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides will be used, and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status

plants, consistent with BLM's Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM, 2007) and National Invasive Species Management Plan (NISC, 2008). All herbicide applications will follow U.S. Environmental Protection Agency label instructions and will be in accordance with federal, state, and local laws and regulations. Only state and BLM-approved herbicides may be used. Herbicide treatment will be implemented by a Licensed Qualified Applicator. Herbicides shall be applied in accordance with product labels and applicator licenses. Herbicides shall not be applied during or within 24 hours of high confidence predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied in high wind conditions.

Reporting schedule and contents. The IPMP shall specify reporting schedule and contents of each report.

APM BIO-BOT-1: Special-status Herbaceous Plants. SCE shall avoid, minimize or mitigate impacts to any state or federally listed or California Rare Plant Rank (CRPR) 1 or 2 herbaceous plants that may be located on the Proposed Project disturbance areas or surrounding buffer areas.

Pre-construction survey. Pre-construction clearance surveys in areas where special-status plant species potentially occur will be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, to avoid or minimize impacts on special-status plants. Disturbance free buffers for herbaceous species shall be 25-ft from the individual and/or occurrence boundary. These buffers shall be established from the previously conducted focused surveys and preconstruction survey results. If a smaller buffer is required, SCE shall develop and implement site-specific monitoring plan to minimize direct impacts to the species. The plan will be submitted to the CPUC for review and approval.

In the event of a discovery of previously undescribed species, the boundary of the occurrence (defined by CNDDB as all individuals within a ¼ mile of each other) will be flagged, avoided, and monitored as discussed above and the CPUC, CDFW, and/or USFWS will be notified.

Focused Survey. For construction areas where special-status plant species potentially occur and focused surveys have not occurred, focused surveys will take place prior to construction. Focused surveys will be conducted consistent with methodology described in the Proposed Project Biological Technical Report.

Restoration and Mitigation. SCE will implement the following activities; other conflicting permit conditions will supersede the activities below.

1. Coordinate with Agencies. Agencies shall approve any impacts to special-status plants. Impacts in excess of 10% of any occurrence, or other percentage required by agency regulations on lands under their jurisdiction, shall be restored or mitigated.
2. Habitat Restoration and Revegetation. A Habitat Restoration Plan (HRP) shall address topsoil, plant or propagules salvage, and restoration. A Habitat Mitigation and Management Plan (HMMP) shall address mitigation. Approval of the HRP by appropriate agencies is required before impacts to special-status plant occurrences are

allowed. A draft HMMP will be submitted to the appropriate agencies prior to impacts to special-status plants. For more information see APM BIO-RES-1.

3. Salvage. If required by agency regulations on lands under their jurisdiction, SCE shall consult with a qualified restoration ecologist or horticulturist regarding the feasibility and likely success of salvage efforts for each species. If salvage is feasible, based on prior success with similar species, SCE shall include salvage methods in the HRP. For special-status plants, the goal shall be to preserve existing populations or establish new populations. The HRP will include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether a species is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or propagules, to retain intact soil conditions and maximize success; (e) details regarding storage of plants or propagules for each species; (f) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (g) a description of the irrigation, and other maintenance activities, as applicable; (h) success criteria, including specific timeframe for survivorship of each species; and (i) a detailed monitoring program, commensurate with the HRP goals. Invasive plant control for special-status plants will be addressed in the Invasive Plant Management Plant (IPMP, APM BIO-RES-2).

4. Off-site compensation. Where restoration is not feasible, SCE shall provide compensation lands consisting of habitat occupied by the impacted CRPR 1 or 2 ranked plant occurrences at a 1:1 ratio of acreage for any occupied habitat affected by the Proposed Project. Occupied habitat will be calculated on the Proposed Project site and on the compensation lands as including each special-status plant occurrence. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be "nested" or "layered" with compensation for habitat loss.

Agency Coordination. Annual construction monitoring reports shall be submitted to the CPUC and BLM. Reports shall include, but not be limited to, number of plants impacted, details of plants or propagules salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. After construction, salvage status will be described in the HRP annual report.

In the event of an unexpected discovery of a new species or previously undocumented occurrence, the same steps will be used as discussed above. In addition, when there is an unexpected discovery of a new species, the CPUC and CDFW and/or BLM will be notified.

APM BIO-BOT-2: Special-status Perennial Plants and Other Species. SCE shall avoid, minimize or mitigate impacts to western Joshua tree (*Yucca brevifolia var. brevifolia*).

Pre-construction survey. Pre-construction surveys will be conducted by a qualified specialist to identify any western Joshua trees in the Proposed Project area. Where western Joshua trees are known to occur, all work shall occur outside an appropriate buffer to avoid individual western Joshua trees, seeds, and seedbank as agreed to by CDFW. If impacts that would result in take cannot be avoided, SCE will obtain a Section 2081(b) ITP from CDFW if the species is CESA listed or a candidate for listing, and will implement additional measures pursuant to the ITP. Buffer reductions may occur with the implementation of appropriate ITP measures. A qualified

botanist/arborist monitor, with the authority to halt work, shall be present whenever work occurs within reduced buffers for Joshua tree as required by CDFW.

Compensatory Restoration. If an ITP for western Joshua tree is obtained, then compensation for impacts to western Joshua tree will be addressed through the permit conditions.

APM WET-1: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats. The Proposed Project shall avoid and/or minimize impacts to all state jurisdictional waters, wetlands, and riparian habitat that occur within the Proposed Project area where feasible. All grading, fill, staging of equipment, infrastructure construction or removal, and all other construction activities shall be designed, sited, and conducted outside of state and federally jurisdictional waters, wetlands, and riparian habitat.

The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling within 100 feet of jurisdictional waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands, and riparian areas are avoided or minimized. BMPs are also necessary to reduce the risk of an unintended release of sediment or other material into jurisdictional waters. New and upgraded roadways shall use at-grade type stream crossings unless installation or repair of culverts is required. Stockpiled and bermed sediment will be redistributed or removed from the site so as not to alter flows. New poles shall be sited outside stream channels.

If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource Agencies (i.e., U.S. Army Corps of Engineers, the State Water Resources Control Board/Regional Water Quality Control Boards, and California Department of Fish and Wildlife). Temporary impacts to jurisdictional waters shall be returned to pre-existing contours upon completion of the work.

APM CUL-1: Develop a Cultural Resource Management Plan (CRMP). SCE shall prepare and submit for approval a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during Proposed Project construction. Management of cultural resources shall follow all applicable federal and state standards and guidelines for the management of historic properties/historical resources. The CRMP shall be submitted to CPUC and BLM for review and approval at least 90 days prior to the start of construction. The CRMP shall be prepared by a qualified archaeologist who meets the Secretary of Interior's standards for archaeology and include, but not be limited to, the following sections:

- *Cultural Resource Management Plan*: The CRMP shall define and map all known NRHP- and CRHR-eligible properties in or within 100 feet (30.5 meters) of the Proposed Project APE/API. A cultural resources protection plan shall be included that details how NRHP- and CRHR-eligible properties will be avoided and protected during construction. Measures shall include, at a minimum, designation and marking of Environmentally Sensitive Areas (ESAs), archaeological monitoring, personnel training, and reporting. The plan shall also detail which avoidance measures will be used, where and when they will be implemented, and how avoidance measures and enforcement of ESAs will be coordinated with construction personnel.
- *Cultural Resource Monitoring and Field Reporting*: The CRMP shall detail procedures for archaeological monitoring and Tribal participation, define the reporting matrix, and establish

criteria for when the monitoring effort should increase or decrease if monitoring results indicate that a change is warranted. The CRMP shall also include guidelines for monitoring in areas of high sensitivity for the discovery of buried NRHP- and/or CRHR-eligible cultural resources, burials, cremations, tribal cultural resources, or sacred sites.

- *Unanticipated Discovery Protocol*: The CRMP shall detail procedures for temporarily halting construction, defining work stoppage zones, notifying stakeholders (e.g., agencies, Native Americans, utilities), and assessing NRHP and/or CRHR eligibility in the event unanticipated discoveries are encountered during construction. It shall include methods, timelines for assessing NRHP and/or CRHR eligibility, formulating mitigation plans, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries shall be reviewed by tribal stakeholders and approved by CPUC prior to implementation.
- *Data Analysis and Reporting*: The CRMP shall detail methods for data analysis in a regional context, reporting of results within one year of completion of field studies, curation of artifacts and data (maps, field notes, archival materials, recordings, reports, photographs, and analysts' data) at a facility that is approved by CPUC and dissemination of reports to appropriate repositories.

APM CUL-2: Avoid Environmentally Sensitive Areas (ESA). SCE shall perform cultural resource surveys for any portion of the Proposed Project APE not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas). Cultural resources discovered during surveys will be subject to APM CUL-1 (Develop CRMP). Where operationally feasible, all NRHP- and CRHR-eligible resources shall be protected from direct project impacts by project redesign (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas). In addition, all historic properties/historical resources shall be avoided by all project construction, operation and maintenance, and restoration activities, where feasible. Avoidance measures shall include, but not be limited to, fencing off ESAs for the duration of the Proposed Project or as outlined in the CRMP.

APM CUL-3: Train Construction Personnel. Prior to initiating construction, all construction personnel shall be trained by a qualified archaeologist regarding the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) and paleontological resources (i.e., fossils), and protection of these resources during construction. Training shall also inform all construction personnel of the procedures to be followed upon the discovery of cultural materials. All personnel shall be instructed that unauthorized removal or collection of artifacts is a violation of federal and state laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend a Worker's Environmental Awareness Training Program (WEAP). The WEAP will include the Proposed Project's potential for the post-discovery review of archaeological deposits, how to operate adjacent to and avoid all ESAs, and procedures to treat post-discovery reviews.

APM CUL-4: Conduct Construction Monitoring. Archaeological monitoring shall occur as outlined in the CRMP. Archaeological monitoring shall be conducted by a qualified archaeologist familiar with the types of historic and prehistoric resources that could occur within the Proposed Project areas. The qualifications of the principal archaeologist and monitors shall be approved by the CPUC and BLM. Monitoring reports shall be submitted to the CPUC on a monthly basis. A

Tribal Participant may be required at culturally sensitive locations in consultation with the CPUC and/or as outlined in the CRMP.

APM CUL-5: Properly Treat Human Remains. SCE shall follow all federal and state laws, statutes, and regulations that govern the treatment of human remains. All work in the vicinity of a find will cease within a 200-foot radius of the remains, the area will be protected to ensure that no additional disturbance occurs. Should inadvertent discovery of human remains be made on federal lands, the federal agency and County Coroner (California Health and Safety Code 7050.5(b)) shall be notified immediately. If the remains are determined to be Native American or if Native American cultural items pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA) are uncovered, the remains shall be treated in accordance with the provisions of NAGPRA (43 CFR 10) and the Archaeological Resources Protection Act (43 CFR 7). If the remains are not on federal land, the County Coroner and CPUC shall be notified immediately and the remains shall be treated in accordance with Health and Safety Code section 7050.5, CEQA Guidelines section 15064.5(e), and Public Resources Code section 5097.98. SCE shall assist and support the BLM and DoD as appropriate in all required NAGPRA and Section 106 actions, government to-government consultations with Native Americans, agencies, and consulting parties as requested by the BLM, DoD, or CDFW. SCE shall comply with and implement all required actions and studies that result from such consultations.

APM PAL-1: Develop Paleontological Resource Mitigation and Monitoring Plan. SCE shall prepare a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) to guide all paleontological management activities during project construction. The PRMMP shall be submitted to the CPUC and BLM for review and approval at least 90 days prior to the start of construction. The PRMMP shall be prepared by a qualified paleontologist, based on SVP (2010) guidelines, and meet all regulatory requirements. The qualified paleontologist shall have a Master's Degree or Ph.D. in paleontology, have local paleontology knowledge, and shall be familiar with paleontological procedures and techniques. The PRMMP will include, but not be limited to, the following sections:

- *Paleontological Resource Monitoring and Reporting*: Detail monitoring procedures and methodologies, which shall require a qualified paleontological monitor for all construction-related ground disturbance that reach approximate depths for significant paleontological resources in sediments with a high paleontological sensitivity (i.e., Quaternary older alluvium and Tropico Group [lower], granitic fanglomerate and sandstone). Sediments with no (i.e., Saddleback Basalt and quartz monzonite) will not require monitoring. Paleontological monitors shall meet standard qualifications per the SVP (2010).
- *Unanticipated Discovery Protocol*: Detail procedures for temporarily halting construction, defining work stoppage zones, notifying stakeholders, and assessing the paleontological find for scientific significance. If indicators of potential microvertebrate fossils are found, screening of a test sample shall be carried out as outlined in SVP (2010).
- *Data Analysis and Reporting*: Detail methods for data recovery, analysis in a regional context, reporting of results within one year of completion of field studies, curation of all fossil specimens in an accredited museum repository approved by the CPUC and BLM and dissemination of reports to appropriate repositories.

APM PAL-2: Train Construction Personnel. Prior to the initiation of construction, all construction personnel shall be trained, regarding the recognition of possible buried paleontological resources (i.e., fossils) and protection of all paleontological resources during construction. Training shall inform all construction personnel of the procedures to be followed upon the discovery of paleontological materials. All personnel shall be instructed that unauthorized removal or collection of fossils is a violation of Federal and state laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend a Worker's Environmental Awareness Training Program (WEAP). The WEAP will include the project's potential for inadvertently exposing buried paleontological resources, how to operate adjacent to and avoid any potential Environmentally Sensitive Area, and procedures to treat unanticipated discoveries.

APM PAL-3: Conduct Paleontology Resources Construction Monitoring. Paleontological monitoring shall be conducted by a qualified paleontologist familiar with the types of resources that could occur within the project area. Monitoring reports shall be submitted to the CPUC and BLM on a monthly basis.

APM HAZ-1: SCE will prepare and implement a HMMP/Hazardous Materials Business Plan during project construction. The program will outline proper hazardous materials handling, use, storage, and disposal requirements, as well as hazardous waste management procedures. This plan will be developed to ensure that all hazardous materials and wastes will be handled and disposed of according to applicable rules and regulations. The HMMP will address: the types of hazardous materials to be used during the Project, hazardous materials storage, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous materials release containment/control procedures, hazard communication training, personal protective equipment (PPE) training, and release reporting requirements. It will also include fueling and maintenance procedures for helicopters and construction equipment.

APM HAZ-2: A Soil Management Plan will be developed and implemented for the Proposed Project. The Soil Management Plan will provide guidance for the proper handling, on-site management, and disposal of impacted soil that may be encountered during construction activities.

APM HAZ-3: Prior to construction, SCE shall consult with the FAA regarding helicopter flight plans that will take place during construction. This consultation will would include, but not be limited to:

- Providing locations of helicopter construction staging and work areas
- Establishing designated flight corridors between staging and work areas
- Means to ensure external load operations avoid occupied structures and roadways
- Locations of traffic control where external load operations will cross public roadways
- Locations where Congested Area Plans may be required for filing with the FAA
- Identifying any flight restrictions recommended/required by the FAA

The results of this coordination will be provided to the CPUC.

APM HAZ-4: All workers on the project site shall be required to attend a Worker's Environmental Awareness Training Program (WEAP). The training shall inform all construction personnel of the UXO avoidance measures, including general precautions as well as specific procedures to be followed upon the discovery of UXO. The WEAP training will include, at a minimum, the following topics so crews will understand their obligations:

- Safety and situational awareness in areas where UXO are likely to be encountered
- Identification of UXO
- Work stoppage and work area evacuation
- Communication protocol
- Treatment of UXO, including avoiding disturbance of the UXO and flagging the item with a visible marker, if it may be done safely
- Consequences of non-compliance

APM NOI-1: SCE shall employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors during construction:

- Construction activities shall be confined to daytime, weekday and weekend hours established by Kern County, San Bernardino County, and the City of California City. In the event construction is required beyond those hours, SCE will notify the appropriate local agency or agencies regarding the description of the work, location, and anticipated construction hours.
- Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- Stationary noise sources (e.g., generators, pumps) and staging areas shall be shielded by an enclosure, temporary sound walls, acoustic blankets, or other barrier where noise levels are above 80 dBA at sensitive receptor locations. Heights and specifications of noise barriers will be designed to reduce construction noise to below 80 dBA (FTA 2006).
- Construction traffic and helicopter flight shall be routed away from residences and schools.
- Unnecessary construction vehicle use and idling time shall be minimized. If a vehicle is not required for use immediately or continuously for construction activities, its engine shall be shut off.

APM REC-1: When temporary closures to recreational areas are necessary for construction activities, SCE will coordinate those closures with recreational facility owners.

APM TCR-1: Tribal Monitoring. An archaeological monitor, and tribal monitor that is culturally affiliated with the Project area, may be present for ground-disturbing activities within or directly adjacent to identified tribal cultural resources. The archaeological and tribal monitors will consult the Cultural Resource Management Plan (CRMP; APM CUL-1) to determine when to increase or decrease the monitoring effort should the monitoring results indicate a change is warranted. Monitoring reports shall be prepared and submitted to the CPUC on a monthly basis.

APM TCR-2: Tribal Engagement Plan. A tribal engagement plan shall be prepared, which will detail how Native American tribes will be engaged and informed throughout the Proposed Project. The tribal engagement plan will be included in the CRMP (APM CUL-1).

2.12.2 Best Management Practices

SCE has also proposed the implementation of BMPs that are based on the California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook* (SCE 2023a, 2024a). The BMPs listed below are considered part of the Project for the purposes of this CEQA analysis.

2.12.2.1 Dust, Erosion, and Runoff Controls

Dust

Measures to control migration of fugitive dust would be implemented during construction, consistent with the Eastern Kern County Air Pollution Control District and the Mojave Desert Air Quality Management District requirements. Such measures would include, but not be limited to, BMP WE-1, intended to manage fugitive dust during the Project's construction.

- **BMP WE-1, Wind Erosion Control.** The construction team will apply water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

Erosion

Measures to control erosion may also be implemented based on the guidance provided by the California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook*. Such measures may include, but not be limited to, the following best management practices intended to control erosion.

- **BMP EC-1, Scheduling.** The construction team shall reduce the discharge of pollutants to storm drain facilities caused by construction activities by scheduling activities in a manner that will limit exposure of disturbed soils to wind, rain, non-storm water run-off, and storm water run-on and run-off.
- **BMP EC-2, Preservation of Existing Vegetation.** The construction team will protect and preserve existing vegetation in work areas as long as practicable before disturbing them. The construction team shall also preserve and protect existing vegetation adjacent to work areas. This protection and preservation of such vegetation will serve to control erosion and filter out sediment.
- **BMP EC-3, Hydraulic Mulch.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.
- **BMP EC-4, Hydroseeding.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.

- **BMP EC-5, Soil Binders.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring short term temporary protection. Because soil binders can often be incorporated into the work, they are a good alternative to mulches in areas where grading activities will soon resume. Soil binders are also suitable for use on stockpiles. Non-toxic soil binders, equivalent or better in efficiencies than the California Air Resources Board (CARB)-approved soil binders, shall be applied per the manufacturer recommendations to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions. Soil binders will be non-toxic and MSDS will be present at site.
- **BMP EC-6, Straw Mulch.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Straw mulch will be certified weed free.
- **BMP EC-7, Geotextiles and Mats.** The construction team will implement one or more of these measures to stabilize disturbed soil areas (stockpiles, slopes, embankments, conveyances, etc.) and protect these soils from erosion by rain, wind or storm water run-on and run-off where applicable to reduce soil erosion from wind and rain. Plastic micro-filament matting will not be used, only natural fiber mats to prevent trapping of birds and reptiles.
- **BMP EC-8, Wood Mulch.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Wood mulch shall be untreated.
- **BMP EC-15, Soil Preparation and Roughening.** The construction team will implement this BMP to assess and prepare surface soils for other BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.
- **BMP EC-16, Non-Vegetative Stabilization.** The construction team will utilize non-vegetative stabilization methods for temporary or permanent stabilization of areas prone to erosion; this would be used only where vegetative options are not feasible.

Runoff Controls

The following BMPs may be implemented to manage stormwater runoff and control sediment.

- **BMP SE-4, Check Dam.** The construction team will implement this BMP to reduce scour and channel erosion by reducing flow velocity and increasing residence time within the channel, allowing sediment to settle.
- **BMP SE-5, Fiber Rolls.** The construction team will implement this BMP to eliminate the erosion of slopes. The rolls are widely used to prevent sediment from running off site.
- **BMP SE-6, Gravel Bag Berm.** The construction team will implement this BMP to eliminate erosion of slopes. This BMP is particularly useful with steep slopes and a high potential for runoff.

- **BMP SE-7, Street Sweeping and Vacuuming.** The construction team will implement this BMP when soils and miscellaneous debris are tracked from the construction site to areas outside the site. This measure prevents sediments from reaching the drop inlets and stormwater system and prevents unsafe driving conditions.
- **BMP SE-10, Storm Drain Inlet Protection.** The construction team will implement this BMP if any runoff from the construction site drains directly into a drop inlet. The protection will prevent debris and soils from clogging drop inlets and storm drain systems.
- **BMP TC-1, Stabilized Construction.** The construction team will implement this BMP to remove all construction site soil and miscellaneous debris prior to leaving the site. The BMP will depend on the soil, site, and type of surface outside the staging area.
- **BMP TC-2, Stabilized Construction Roadway.** A stabilized construction roadway is a temporary access road. It is designed for the control of dust and erosion created by vehicular tracking.
- **BMP WM-3, Stockpile Management.** The construction team will implement this BMP whenever there are stockpiles of asphalt, concrete, wood, or soil. This includes temporary stockpiles and stockpiles existing for periods longer than one working day.

2.12.2.2 Transporting, Storing, and Handling

- **BMP NS-9, Vehicle and Equipment Fueling.** The construction team will implement this BMP when fueling of equipment occurs on site. The equipment should be monitored before and after fueling. This will prevent any fuel from reaching the construction site soils and possible groundwater. Diapers, pans, or tarps will be used under fueling areas. Spill kits will be on-site at fueling locations. Fueling areas will be located at least 100 feet from drainages.
- **BMP WM-1, Material Delivery and Storage.** The construction team will implement this BMP to prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials on-site, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training applicable employees and subcontractors.
- **BMP WM-2, Material Use.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use on-site, and training applicable employees and subcontractors.

2.12.2.3 Incidental Leak or Spill

The following BMPs would be followed in the event of an incidental leak or spill of hazardous materials:

- **BMP WM-4, Spill Prevention and Control.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training applicable employees.
- **BMP WM-6, Hazardous Waste Management.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from hazardous waste

through proper material use, waste disposal, and training of applicable employees and subcontractors.

- **BMP WM-7, Contaminated Soil Management.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

2.13 Electric and Magnetic Fields Summary

2.13.1 Introduction

Extremely low-frequency electric and magnetic fields (EMFs) include alternating current (i.e., AC) fields and other electromagnetic, non-ionizing radiation from 1 hertz (Hz) to 300 Hz. Power lines, such as electrical wiring and electrical equipment, produce extremely low-frequency fields at 60 Hz (OSHA 2024). This CEQA document does not consider EMFs in the context of the CEQA analysis of potential environmental impacts, for two reasons: (1) There is no agreement among scientists that EMFs create a potential health risk; and (2) there are no defined or adopted CEQA standards for defining health risk from EMFs.

On January 15, 1991, CPUC initiated an investigation to consider its role in mitigating the health effects, if any, of EMFs from utility facilities and power lines. A working group of interested parties, the California EMF Consensus Group, was created by CPUC to advise on this issue.

The California EMF Consensus Group's fact-finding process was open to the public, and its report incorporated public concerns. Its recommendations were filed with CPUC in March 1992. Based on the work of the California EMF Consensus Group, written testimony, and evidentiary hearings, CPUC's decision (93-11-013) was issued on November 2, 1993, to address public concern about possible EMF health effects from electric utility facilities. In August 2004, CPUC opened an Order Instituting Rulemaking to update the commission's policies and procedures related to EMFs emanating from regulated utility facilities. The final decision, issued in CPUC Decision 06-01-042, included the following conclusions and findings:

> *We find that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure. We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value.*

This continues to be CPUC's position regarding standards for EMF exposure. The State of California has not determined that any risk would merit adopting any specific limits or regulations regarding EMF levels from electric power facilities. Presently, there are no applicable federal, state, or local regulations related to EMF levels from subtransmission lines or related facilities, such as the Project. However, CPUC has implemented a decision (Decision 06-01-042) requiring utilities to incorporate "low-cost" or "no-cost" measures for managing EMFs from electrical facilities up to approximately 4 percent of total project cost. Four percent of total

project budgeted cost is the benchmark for developing EMF reduction measure guidelines, and reduction measures should achieve some noticeable reductions.

Recognizing that there is a great deal of public interest and concern regarding potential health effects from human exposure to EMFs from subtransmission lines and related facilities, this document provides information regarding EMFs associated with electric utility facilities and human health and safety. Thus, the EMF information in this CEQA document is presented for the benefit of the public and decision-makers.

2.13.2 Magnetic Field No-Cost Measures

Using the 4 percent benchmark and otherwise in accordance with "EMF Design Guidelines" filed with CPUC in compliance with CPUC Decisions 93-11-013 and 06- 01-042, SCE has proposed to implement no-cost measures to reduce magnetic field levels for the Project. The specific measures are described in the Field Management Plan submitted by SCE in its application for a permit to construct the Project (SCE 2023a). A copy of the Field Management Plan is included in this environmental impact report as Appendix D. A summary of the magnetic field no-cost measures is provided below.

2.13.2.1 Subtransmission Lines

The proposed magnetic field no-cost measures for the Kramer–Cal City and Cal City–Edwards-Holgate 115 kV subtransmission lines are as follows:

- Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria.
- Utilize subtransmission line construction that reduces the space between conductors as compared with other designs.

2.13.2.2 Cal City Substation

The proposed magnetic field no-cost measures for the Cal City Substation are as follows:

- Place major substation electrical equipment (such as transformers, switchracks, buses, and underground duct banks) away from the substation property lines.
- Configure the transfer and operating buses with the transfer bus closest to the nearest property line (for 33 and 12 kV only).

2.14 References

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Cal City Substation

Mendiburu Rd

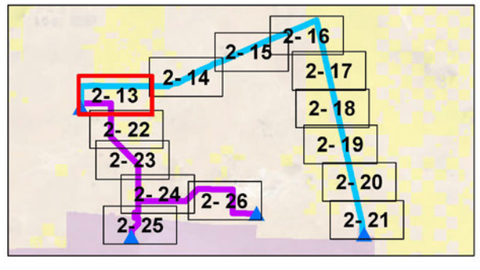
Hacienda Blvd

California City

Randsburg Mojave Rd

Mule Team Pky

SOURCE: ESA, 2024; SCE, 2023



N

0 0.4
Miles

- Proposed New LWS Pole
- Proposed New TSP Pole
- Existing Substation
- Pole to be Removed
- Creek/River
- New Kramer-Cal City 115 kV Subtransmission Line
- New Cal City-Edwards-Holgate 115 kV Subtransmission Line
- Existing 115 kV Transmission Line
- Highway/Major Rd

Land Ownership

- Bureau of Land Management
- Department of Defense

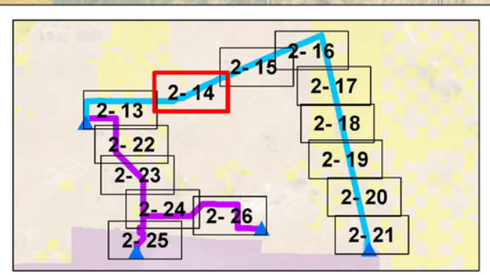
Cal City Substation 115 kV Upgrade Project

Figure 2-13
Project Index Map
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Randsburg Mojave Rd
Thunderbird Blvd
Chrysler Dr
Eileen Blvd
Pebble Blvd
Mule Team Pky
Buick Blvd
Al Blvd
Al Blvd
Brown Rd
Washburn Blvd
Virginia Blvd
Esse Blvd
Chrysler Dr
Lincoln Blvd
Merrick Blvd
Cadillac Blvd
Rudnick Blvd
Duquesne St
Antelope Dr W
Martin
Rutgers Rd
Virginia Blvd
Stanford Ave
Gordon Blvd

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SOURCE: ESA, 2024; SCE, 2023



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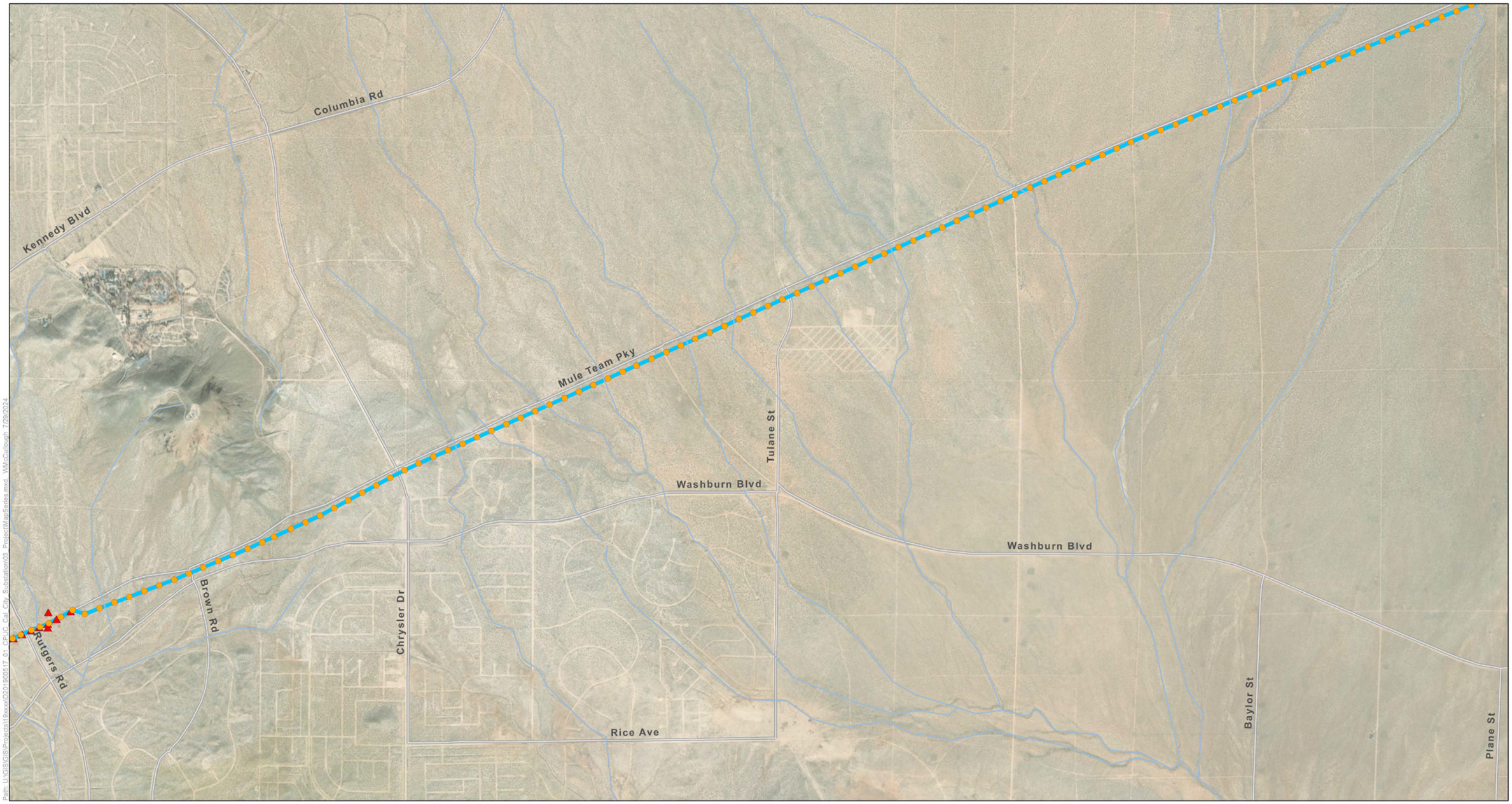
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- Proposed New TSP Pole
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- Pole to be Removed
- Creek/River
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- New Cal City-Edwards-Holgate 115 kV Subtransmission Line
- Existing 115 kV Transmission Line
- Highway/Major Rd

Land Ownership

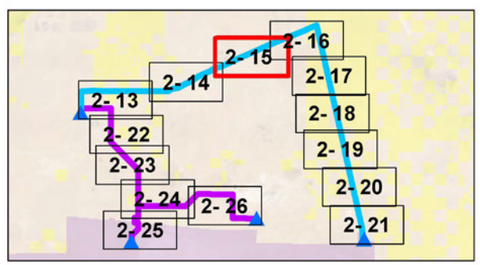
- Bureau of Land Management
- Department of Defense

Cal City Substation 115 kV Upgrade Project

Figure 2-14
Project Index Map
Map 2 of 14



SOURCE: ESA, 2024; SCE, 2023



0 0.4 Miles

- Proposed New LWS Pole
- Proposed New TSP Pole
- Existing Substation
- Pole to be Removed
- Creek/River
- New Kramer-Cal City 115 kV Subtransmission Line
- New Cal City-Edwards-Holgate 115 kV Subtransmission Line
- Existing 115 kV Transmission Line
- Highway/Major Rd

Land Ownership

- Bureau of Land Management
- Department of Defense

Cal City Substation 115 kV Upgrade Project

Figure 2-15
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Columbia Rd

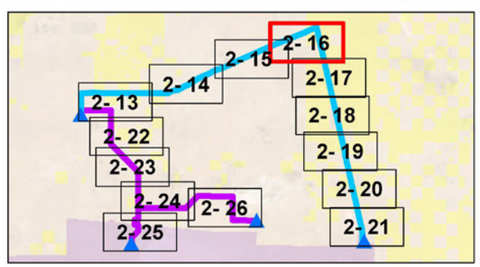
Washburn Blvd

Cuddeback Rd

Mule Team Pky

395

SOURCE: ESA, 2024; SCE, 2023



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Miles

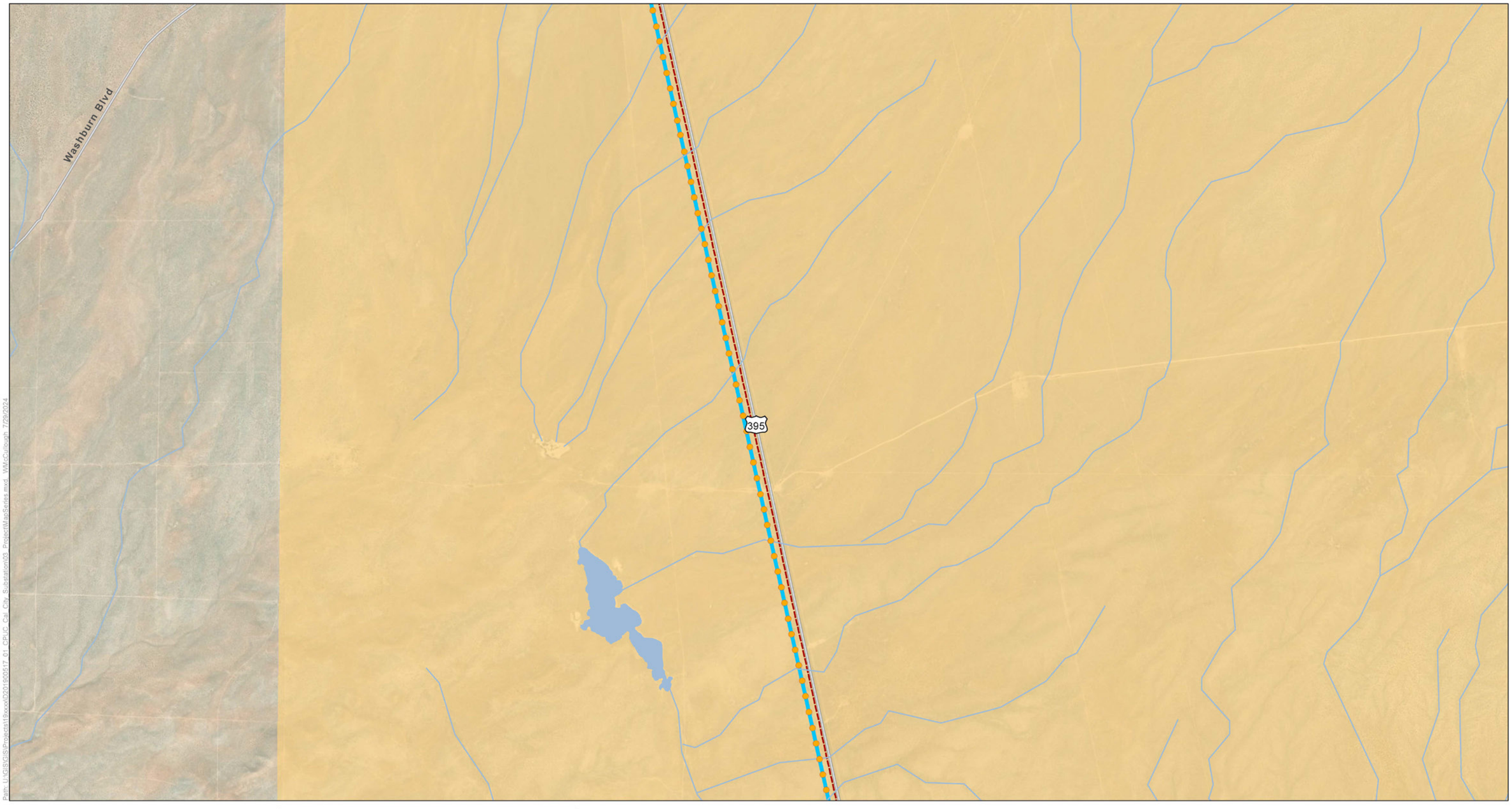
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- Existing 115 kV Transmission Line
- Highway/Major Rd

Land Ownership

- Bureau of Land Management
- Department of Defense

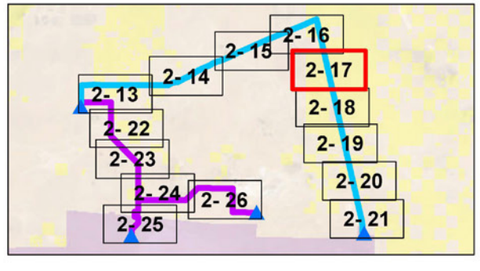
Cal City Substation 115 kV Upgrade Project

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SOURCE: ESA, 2024; SCE, 2023



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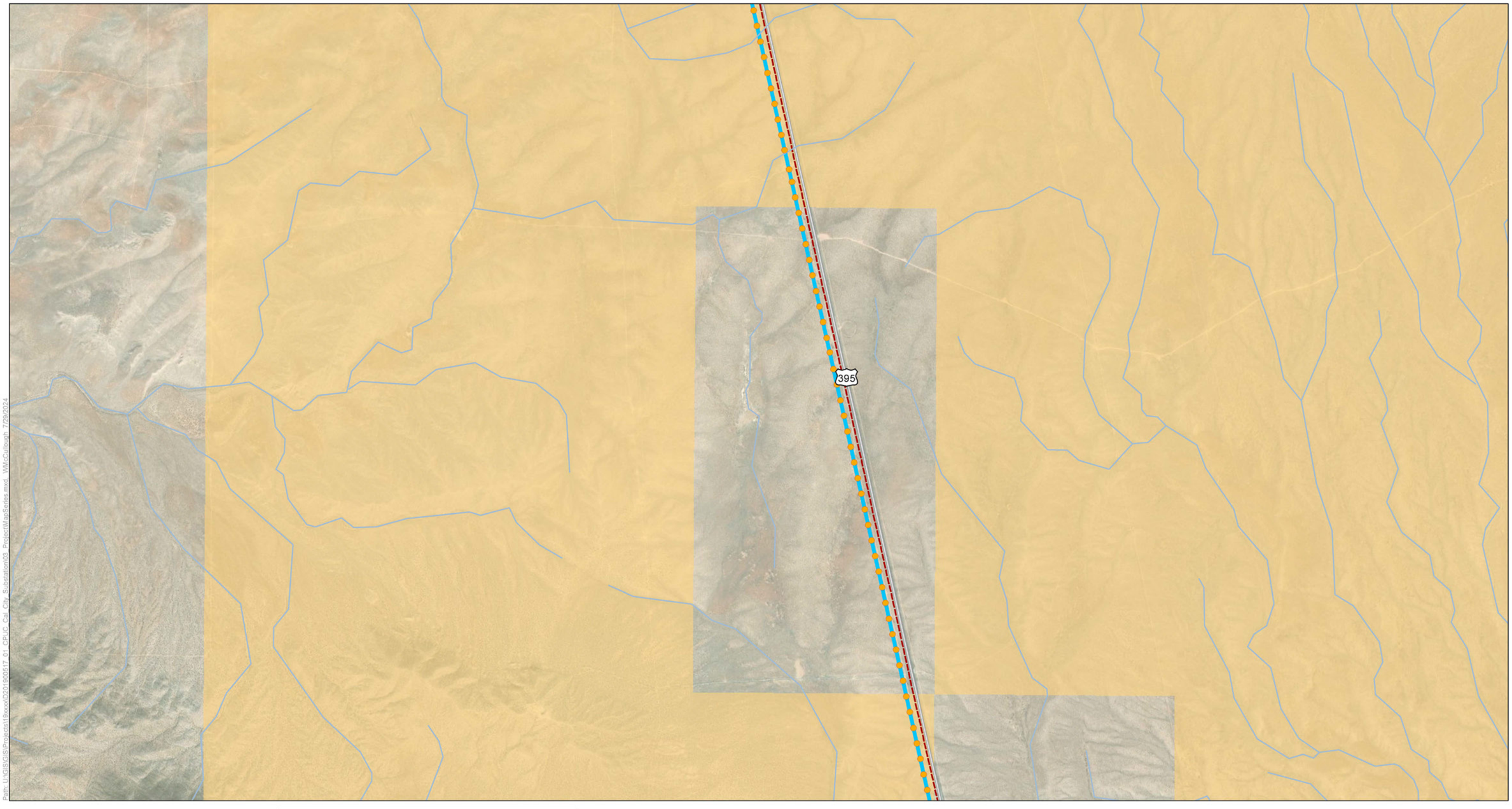
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- Existing 115 kV Transmission Line
- Highway/Major Rd

Land Ownership

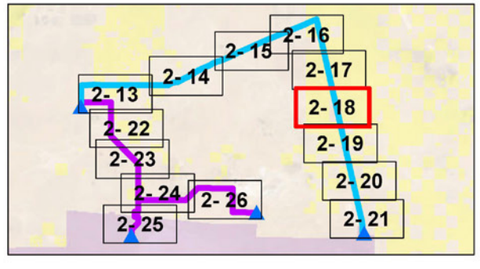
- Bureau of Land Management
- Department of Defense

Cal City Substation 115 kV Upgrade Project

Figure 2-17
Project Index Map
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SOURCE: ESA, 2024; SCE, 2023



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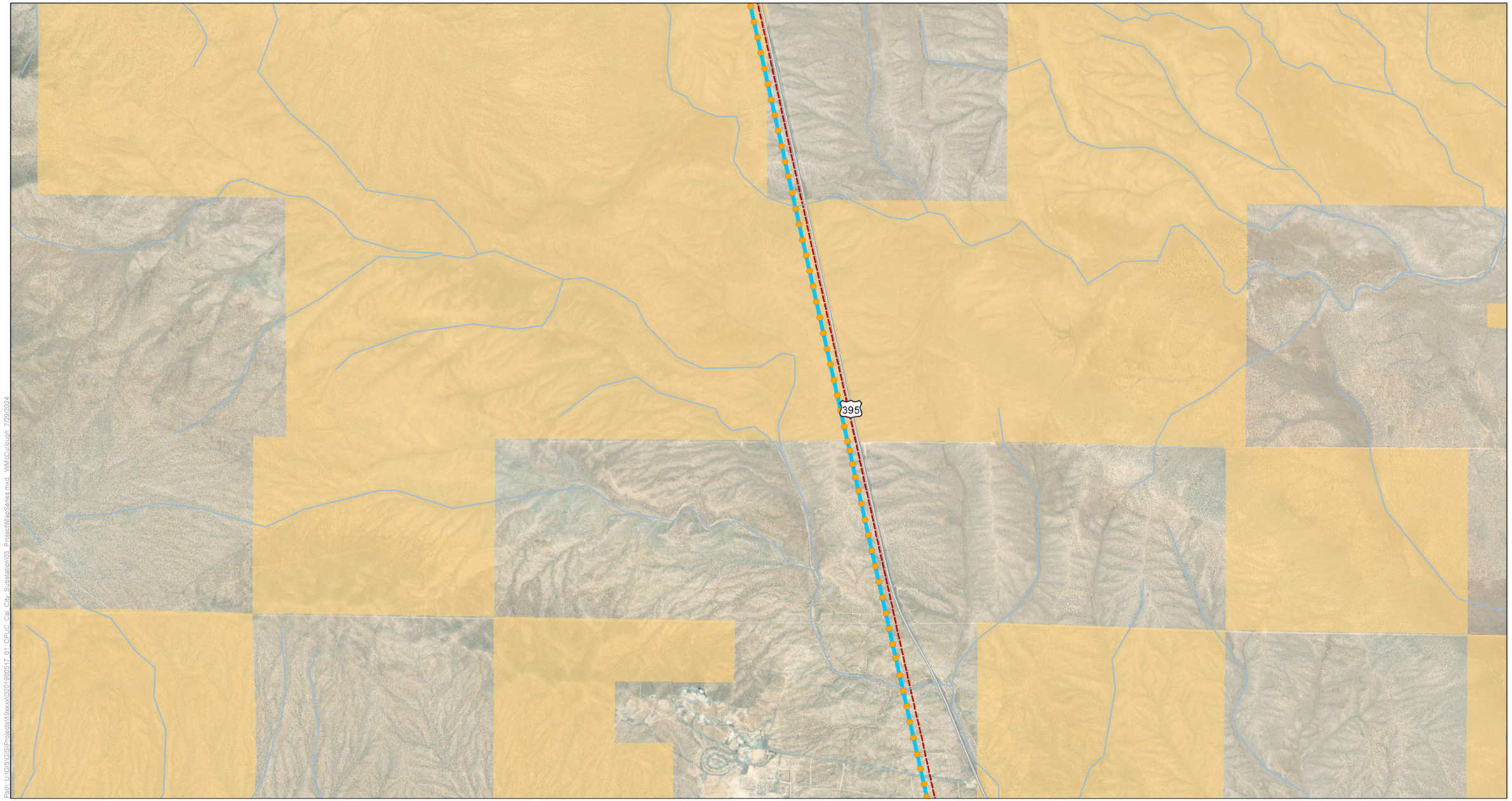
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Land Ownership

- Bureau of Land Management
- Department of Defense

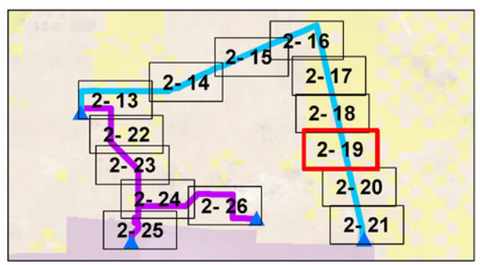
Cal City Substation 115 kV Upgrade Project

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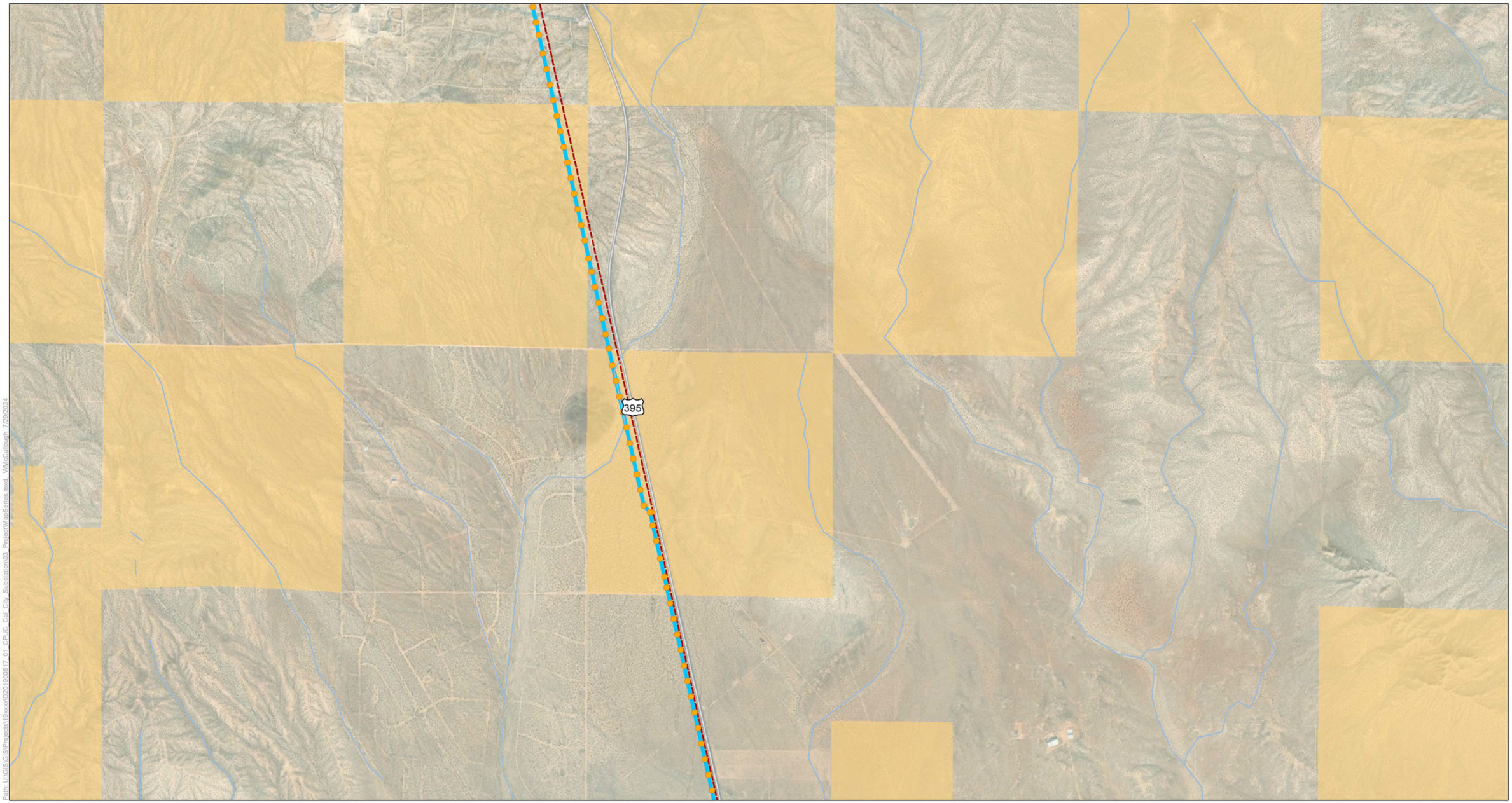
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Land Ownership

- Bureau of Land Management
- Department of Defense

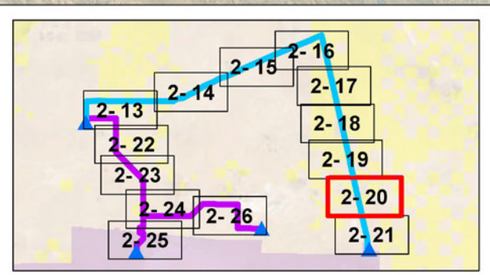
Cal City Substation 115 kV Upgrade Project

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SOURCE: ESA, 2024; SCE, 2023



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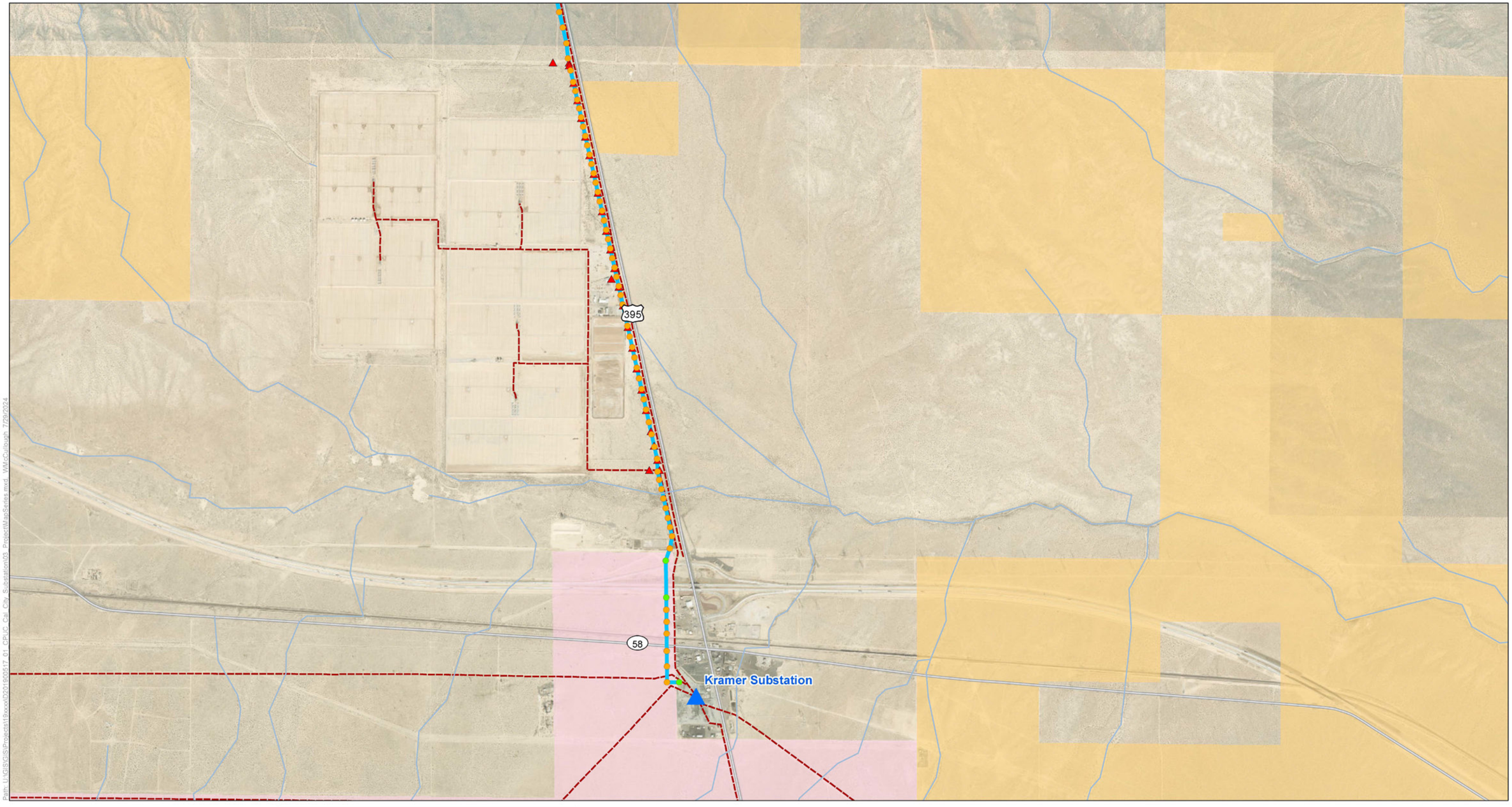
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Land Ownership

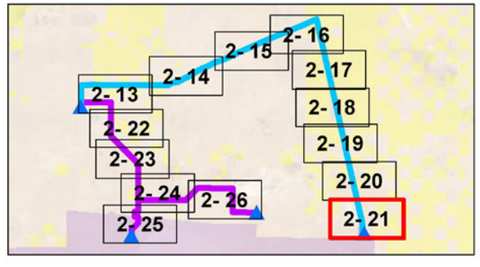
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- Department of Defense

Cal City Substation 115 kV Upgrade Project

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SOURCE: ESA, 2024; SCE, 2023



0 0.4 Miles

- Proposed New LWS Pole
- Proposed New TSP Pole
- Existing Substation
- Pole to be Removed
- Creek/River
- New Kramer-Cal City 115 kV Subtransmission Line
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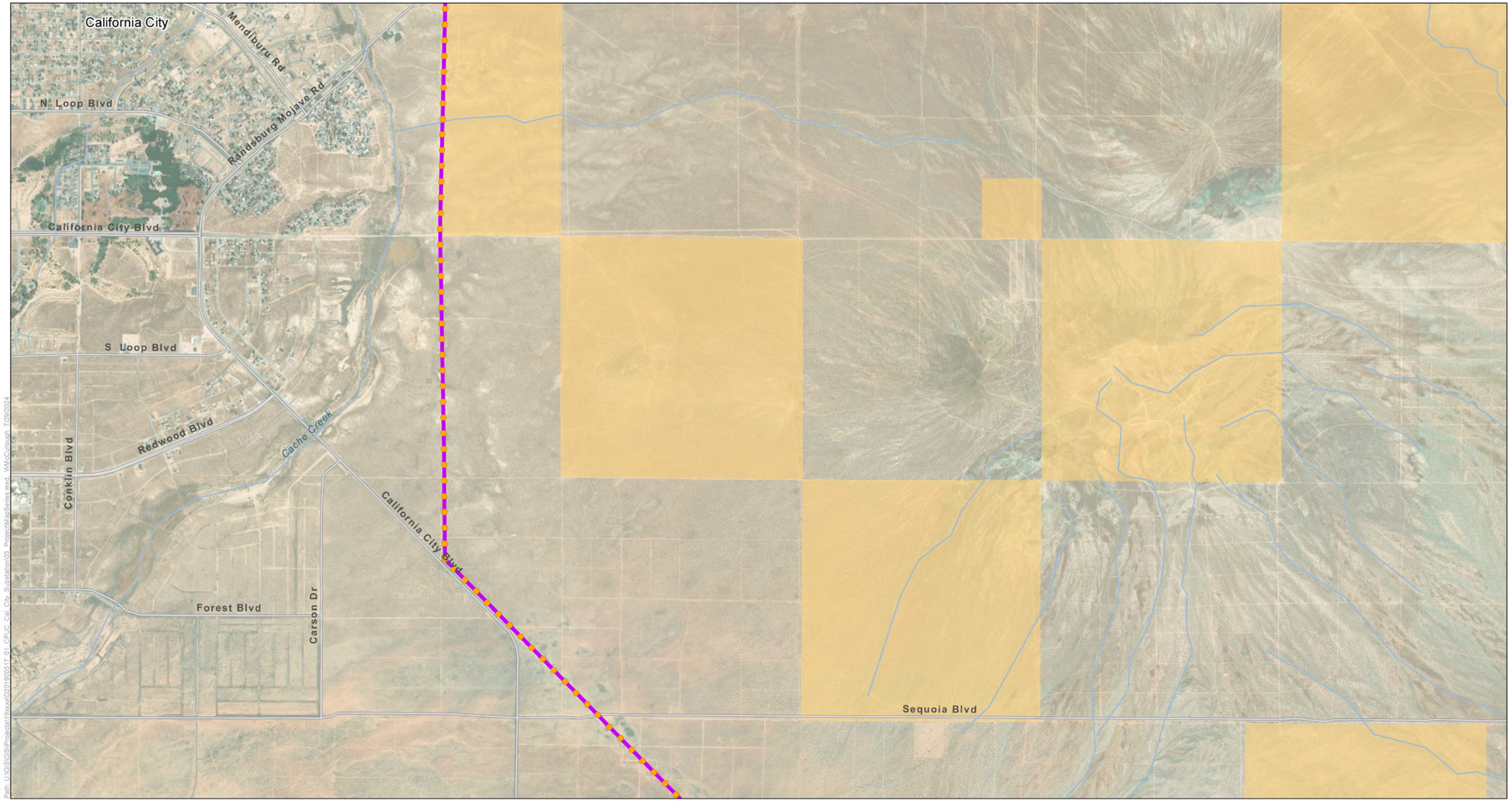
Land Ownership

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- Department of Defense

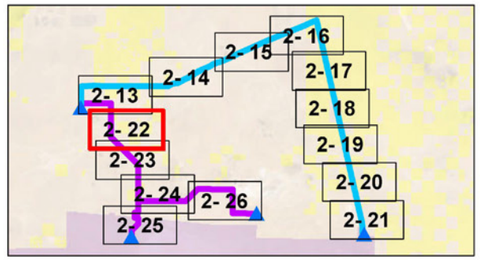
Cal City Substation 115 kV Upgrade Project

Figure 2-21
Project Index Map
Map 9 of 14

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SOURCE: ESA, 2024; SCE, 2023



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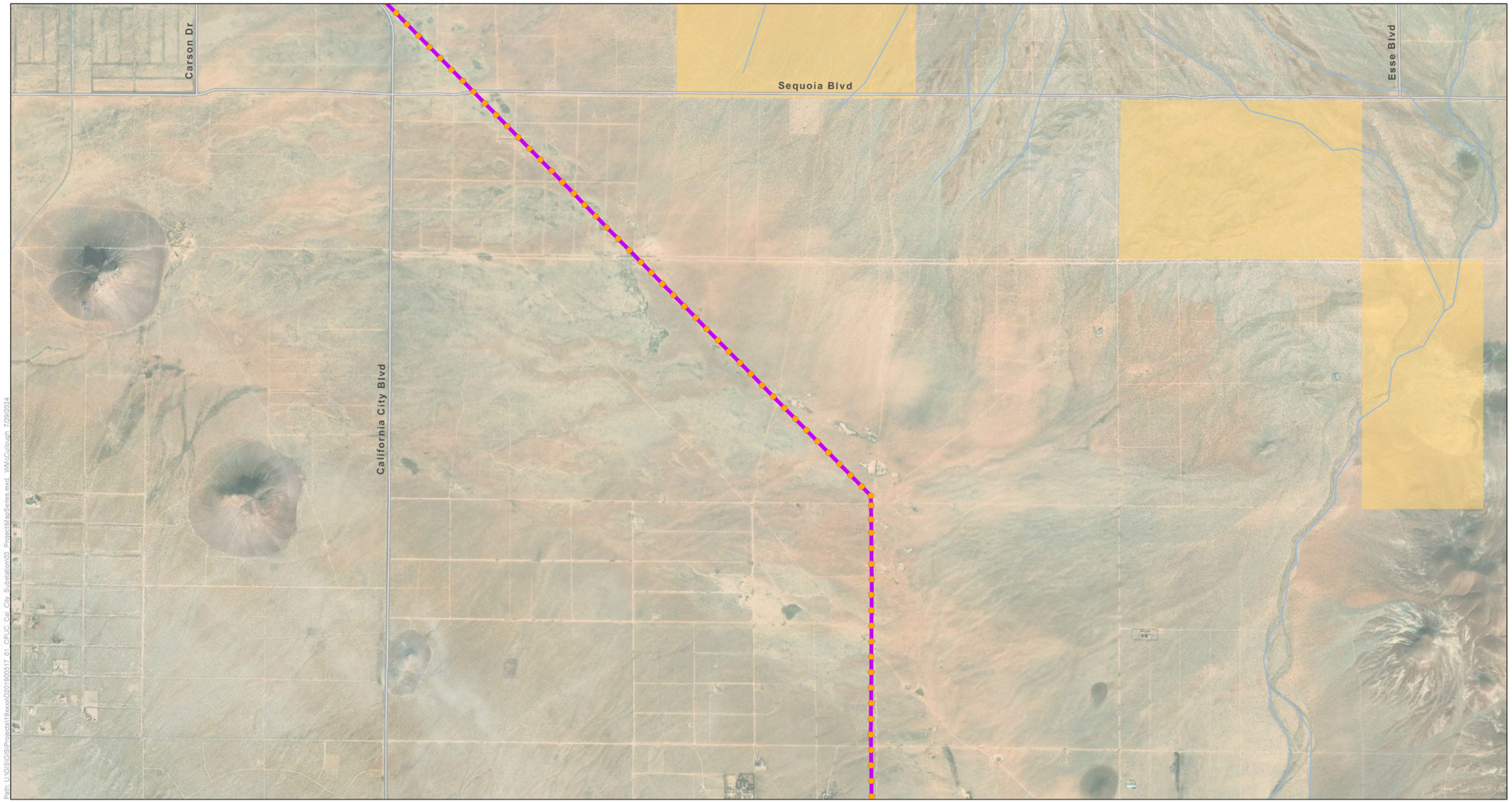
- Proposed New LWS Pole
- Proposed New TSP Pole
- Existing Substation
- Pole to be Removed
- Creek/River
- New Kramer-Cal City 115 kV Subtransmission Line
- New Cal City-Edwards-Holgate 115 kV Subtransmission Line
- Existing 115 kV Transmission Line
- Highway/Major Rd

Land Ownership

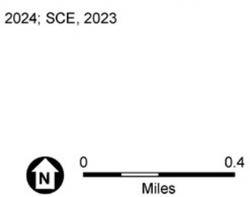
- Bureau of Land Management
- Department of Defense

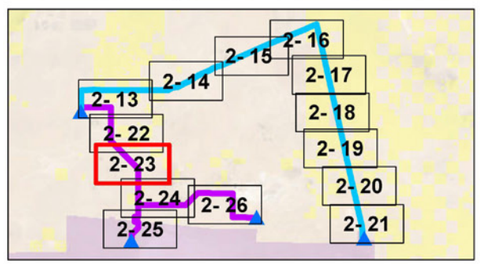
Cal City Substation 115 kV Upgrade Project

Figure 2-22
Project Index Map
Map 10 of 14



SOURCE: ESA, 2024; SCE, 2023





- Proposed New LWS Pole
- Proposed New TSP Pole
- Existing Substation
- Pole to be Removed
- Creek/River
- New Kramer-Cal City 115 kV Subtransmission Line
- New Cal City-Edwards-Holgate 115 kV Subtransmission Line
- Existing 115 kV Transmission Line
- Highway/Major Rd

Land Ownership

- Bureau of Land Management
- Department of Defense

Cal City Substation 115 kV Upgrade Project

Figure 2-23
Project Index Map
Map 11 of 14

Claymine Rd

Highland Blvd

Glendower Ave

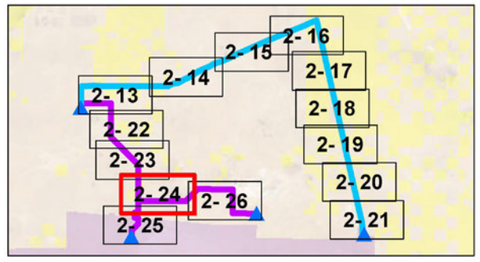
Schultz Rd

Flint St

Lorraine Ave

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SOURCE: ESA, 2024; SCE, 2023



0 0.4 Miles

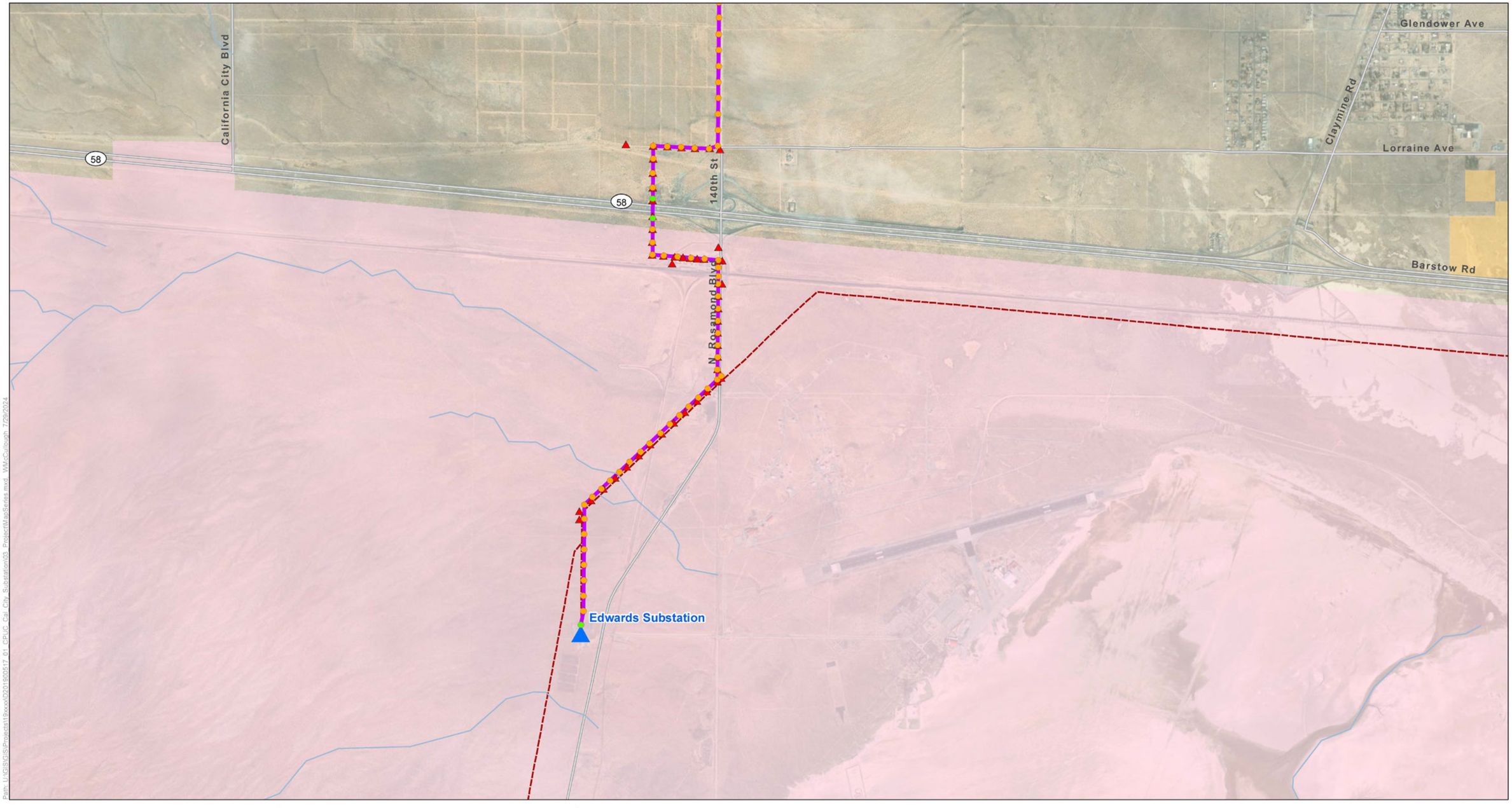
- Proposed New LWS Pole
- Proposed New TSP Pole
- Existing Substation
- Pole to be Removed
- Creek/River
- New Kramer-Cal City 115 kV Subtransmission Line
- New Cal City-Edwards-Holgate 115 kV Subtransmission Line
- Existing 115 kV Transmission Line
- Highway/Major Rd

Land Ownership

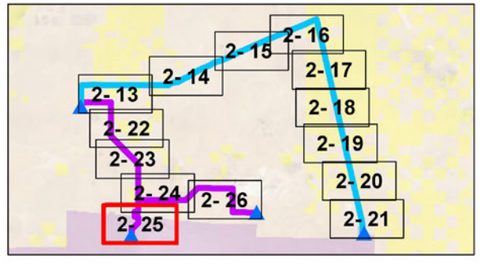
- Bureau of Land Management
- Department of Defense

Cal City Substation 115 kV Upgrade Project

Figure 2-24
Project Index Map
Map 12 of 14



SOURCE: ESA, 2024; SCE, 2023



0 0.4 Miles

- Proposed New LWS Pole
- Proposed New TSP Pole
- Existing Substation
- Pole to be Removed
- Creek/River
- New Kramer-Cal City 115 kV Subtransmission Line
- New Cal City-Edwards-Holgate 115 kV Subtransmission Line
- Existing 115 kV Transmission Line
- Highway/Major Rd

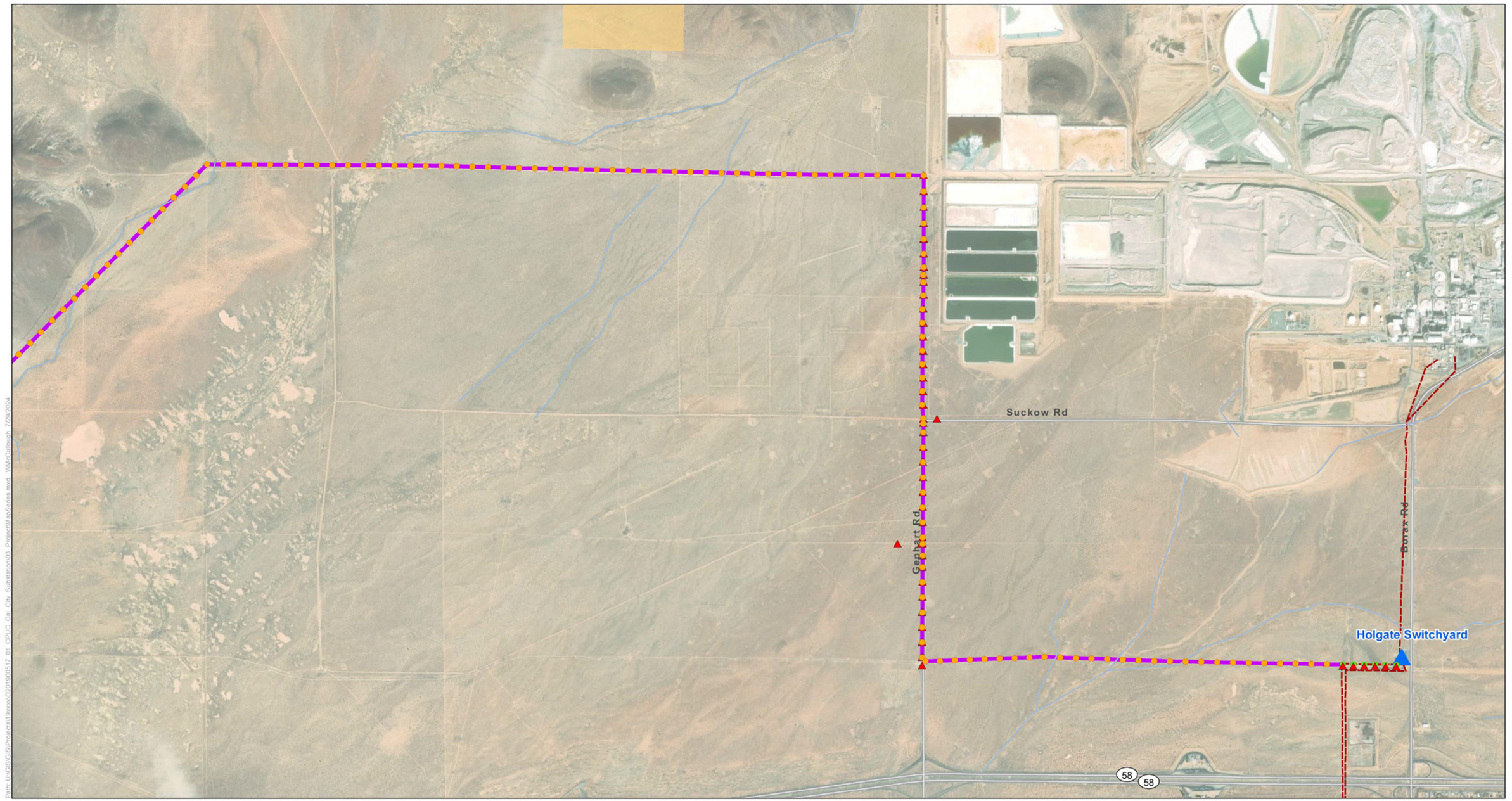
Land Ownership

- Bureau of Land Management
- Department of Defense

Cal City Substation 115 kV Upgrade Project

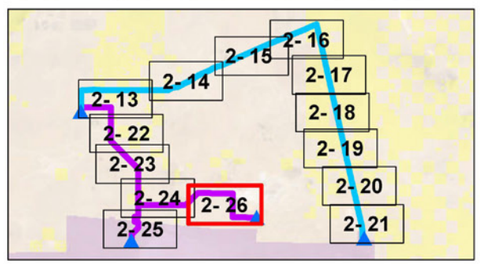
Figure 2-25
Project Index Map
Map 13 of 14

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SOURCE: ESA, 2024; SCE, 2023



N 0 0.4 Miles

- Proposed New LWS Pole
- Proposed New TSP Pole
- Existing Substation
- Pole to be Removed
- Creek/River
- New Kramer-Cal City 115 kV Subtransmission Line
- New Cal City-Edwards-Holgate 115 kV Subtransmission Line
- Existing 115 kV Transmission Line
- Highway/Major Rd

Land Ownership

- Bureau of Land Management
- Department of Defense

Cal City Substation 115 kV Upgrade Project

Figure 2-26
Project Index Map
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CHAPTER 3
Environmental Analysis of the Project

3.0 Introduction to the Environmental Analysis

3.0.1 Overview

This chapter describes the environmental setting from a regional and local perspective and the regulatory setting for the analyses of impacts. This chapter also analyzes the Project's environmental impacts as they relate to each environmental consideration identified in the Environmental Checklist in CEQA Guidelines Appendix G: aesthetics, agriculture and forestry resources, air quality, biological resources, cultural and tribal cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, utilities and service systems, and wildfire. Environmental impacts are also analyzed with respect to additional considerations that the California Public Utilities Commission (CPUC) has determined to be applicable to electric transmission projects (CPUC 2019). The additional questions are applicable to biological resources; energy; hazards, hazardous materials, and public safety; recreation; transportation; and utilities and service systems. Potential environmental impacts of alternatives to the Project are analyzed and compared to Project impacts in Chapter 4, *Alternatives*.

The CPUC has exclusive jurisdiction over the siting, design, and construction of the Project. CPUC General Order 131-D (GO 131-D), Section XI.B**,** states that "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters" (CPUC 2023). Therefore, the Project is not subject to local discretionary regulations, but public utilities are directed to consider local regulations and consult with local agencies. The local plans and regulations identified in this chapter are for informational purposes. Although Southern California Edison (SCE) is not subject to local discretionary permitting, ministerial permits would be secured as appropriate.

3.0.2 Baseline Conditions

The environmental baseline for purposes of CEQA consists of the existing physical setting. CEQA Guidelines Section 15125(a) states, in part:

> *An EIR must include a description of the physical environmental conditions in the vicinity of the project. This environmental setting will normally constitute the baseline physical*

> *conditions by which a lead agency determines whether an impact is significant… The purpose of this requirement is to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts.*

The analysis of each environmental resource issue begins with a description of the actual physical environmental conditions in the area where a project and its alternatives would be implemented. These conditions are also referred to as the "baseline" relative to which project-caused changes are analyzed to determine whether the change is significant for purposes of CEQA (CEQA Guidelines Sections 15125 and 15126.2). For this EIR, unless as otherwise noted, baseline conditions are those as they existed on or about November 8, 2023, the date the Notice of Preparation (NOP) for this EIR was published. The NOP for this EIR is included in **Appendix B**, *Scoping Report*.

3.0.3 Approach to the Impact Analysis

3.0.3.1 Significance Criteria

CEQA lead agencies rely on impact significance criteria as benchmarks to determine whether changes to the existing environment caused by a project or an alternative would cause a significant adverse effect. A *significant effect on the environment* is "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (CEQA Guidelines Section 15382).

The significance criteria for this Draft EIR are generally based on the questions provided in the CEQA Guidelines Appendix G Environmental Checklist. In addition, the CPUC has identified additional CEQA impact criteria for some environmental issue areas that are specific to the types of projects evaluated by the CPUC to be considered in addition to the criteria identified in Appendix G of the CEQA Guidelines (CPUC 2019).

3.0.3.2 Significance Thresholds

To determine whether the impact of a project-caused change compared to any of the significance criteria could be significant, CEQA lead agencies evaluate the degree of that change relative to an established threshold. CEQA Guidelines Section 15064.7 defines *threshold of significance* as "an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant." Such thresholds may be sourced from a variety of places including general plan policies, ordinances, other agencies' thresholds, and industry standards. The thresholds used in this Draft EIR are identified together with the relevant criteria on a resource-by-resource basis.

3.0.3.3 Significance Conclusions

The impact significance conclusions identified in this EIR were reached based on information in the record, including scientific and factual data as well as professional knowledge and judgment. The impact significance conclusions assume all applicant proposed measures and best management practices identified in Chapter 2, Project Description, would be implemented as part of the Project.

Consistent with CEQA and the CEQA Guidelines, each significance conclusion is characterized as one of the following:

1. **No Impact:** This signifies that the Project or an alternative would not cause any change in the environment relative to the applicable significance threshold; under these circumstances, no mitigation measures are required.

2. **Less-than-Significant Impact:** This signifies that the Project or an alternative could cause an adverse change in the environment, but not one that would be substantial, relative to the applicable significance threshold. Under these circumstances, no mitigation measures are required or may be imposed. The analysis considers whether the Project or alternative could cause or contribute to a potential cumulative effect.

3. **Less than Significant with Mitigation Incorporated:** The Project or an alternative could cause an adverse change in the environment that would be substantial relative to the applicable significance threshold, but the implementation of one or more feasible mitigation measures would reduce the significance of the impact below the established threshold. The analysis considers whether the Project or alternative could cause or contribute to a potential cumulative effect.

4. **Significant and Unavoidable:** The Project or an alternative could cause a substantial adverse change in the environment relative to the applicable significance threshold; however, either no feasible mitigation measures are available or, even with implementation of feasible mitigation measures, the significance of the impact would remain above the established threshold. The analysis considers whether the Project or alternative could cause or contribute to a potential cumulative effect.

5. **Cumulatively Considerable:** This signifies that the Project-specific or alternative-specific contribution to a significant cumulative impact would be considerable when viewed in connection with the incremental impacts of past projects, the impacts of other current projects, and the impacts of reasonably foreseeable probable future projects (as defined in CEQA Guidelines Section 15130).

To avoid or reduce potential significant impacts of the Project where feasible, alternatives have been considered or mitigation measures have been recommended to address them.

3.0.3.4 Mitigation Measures

CEQA Guidelines Section 15370 defines *mitigation* to include:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

(c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

(e) Compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements.

Mitigation measures are feasible actions intended to avoid or substantially lessen significant impacts identified in the impact analysis. Feasible mitigation measures have been recommended to avoid or reduce significant impacts of the Project. The effectiveness of recommended mitigation measures has been evaluated by analyzing the impact remaining after implementation of the measure. In some cases, implementation of more than one mitigation measure may be needed to reduce the significance of an impact below the threshold. Impacts that remain significant after feasible mitigation measures are applied are identified as significant and unavoidable impacts. If the Project is approved, the CPUC would implement the Mitigation Monitoring, Compliance, and Reporting Program (see Appendix N) to ensure that applicant proposed measures and measures adopted to mitigate or avoid significant impacts of a Project are implemented.

3.0.4 Approach to the Cumulative Impacts Analysis

As defined in CEQA Guidelines Section 15355, the term *cumulative impacts* refers to two or more individual impacts, which, when combined, are considerable or that compound or increase other environmental impacts. The cumulative impact from multiple projects is the change in the physical environment that results from the incremental impact of the proposed project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines Sections 15355[b] and 15130[a][1]).

The analysis in this section evaluates cumulative impacts on a resource-by-resource basis by considering the incremental impacts of the Project together with the ongoing effects of past, present, and reasonably foreseeable probable future projects that could cause environmental impacts that are closely related to those caused by the Project. Factors considered in determining whether a project is included in the cumulative impact analysis include whether it would cause impacts of the same nature as the Project in the same area at the same time. In each case, the analysis follows the steps listed below. The analysis of whether an alternative could cause or contribute to cumulative impacts is provided in Chapter 4, *Alternatives*, and follows these same steps.

(1) Determine if the Project would result in no impact for any resource area or consideration, in which case the Project could not cause or contribute to any significant cumulative impact. No additional discussion is needed in such instances. For all other instances, the analysis continues.

(2) Define the geographic scope of the impacts associated with each resource area affected by the Project. The geographic scope of the cumulative impacts analysis for each resource area is tailored to the natural boundaries of the affected resource or area of consideration.

(3) Define the temporal scope of the impacts associated with each resource area affected by the Project. For example, are the Project's impacts restricted to a certain period or do they have the potential to occur at any point during the scope of the Project?

(4) Identify relevant plans, projections, and projects for cumulative impact analysis, which consists of resource area-specific trends; projections contained in one or more local, regional, or statewide planning documents; and past, present, and reasonably foreseeable probable future projects.[1] The incremental contribution of past projects generally is reflected in the existing

[1] CEQA Guidelines Section 15130(b) recommends that cumulative impacts be analyzed using a "project" or "projection" approach. This EIR uses a blended hybrid approach.

environmental conditions within the cumulative impacts area, which reflect a combination of the natural condition and the ongoing effects of past actions in the affected area.

(5) Identify, on a significance criterion-by-criterion basis, the incremental Project-specific impact before the implementation of any identified mitigation measures. Note whether these impacts are temporary or permanent, as well as whether limited to a specific issue (e.g., emissions of nitrogen oxides but not particulate matter less than or equal to 10 microns in diameter, known as PM_{10}).

(6) Describe the impacts associated with the Project within the geographic and temporal scopes of the respective resource's impacts and determine whether the Project's impacts and the cumulative projects' impacts (when combined) would be significant. If not, the analysis concludes that a less-than-significant cumulative impact would result.

(7) If when combined, the Project's impacts and the cumulative projects' impacts would be significant, then determine whether the Project's incremental impact is cumulatively considerable. A less-than-significant incremental impact may, nonetheless, be cumulatively considerable. The Project's contribution to a significant cumulative impact may not be cumulatively considerable based on the implementation of appropriate mitigation. The cumulative impact analyses first determine whether the Project's incremental impacts would be cumulatively considerable, and if so then consider whether they would be cumulatively considerable post-mitigation. Mitigation measures identified at the Project and resource-specific level can be considered in this context to determine whether their implementation would reduce the significance of the cumulative contribution below the established threshold. If with mitigation the Project's contribution would not be cumulatively considerable, then the analysis concludes that the Project's cumulative impact would be less than significant. Alternatively, even with the implementation of feasible mitigation measures, if the Project's contribution would remain above the identified threshold, then the analysis concludes that the Project's cumulative impact would be significant and unavoidable.

3.0.4.1 Cumulative Scenario

The term *cumulative scenario* is used in this Draft EIR to refer to the projections and projects that are considered in the cumulative impact analysis. This EIR relies on a blend of two approaches to identify those projects: the "list of projects" approach and the "summary of projections" approach (CEQA Guidelines Section 15130[b]). **Table 3.0-1**, *Cumulative Projects within 5 Miles of the Project*, identifies the projects that would cause impacts that could combine with those of the Project, and the locations of those projects are shown in **Figure 3.0-1**, *Cumulative Projects within 5 Miles of the Project Site*. Although the figure shows only those projects located within a 5-mile radius of the Project site, the geographic area of cumulative consideration has been established on a resource-by-resource basis throughout Chapter 3 as dictated by relevant physical boundaries (such as the extent of the air basin) and is not limited by the area shown in Figure 3.0-1. The cumulative projects identified and shown in Table 3.0-1 and Figure 3.0-1, respectively, were aggregated on or about the time that the NOP was published, with updates made as information has been reasonably available.

The summary of projections approach evaluates the impacts of a Project in the context of projections made in one or more local, regional, or statewide planning documents or environmental analysis that have been adopted or certified, such as, in this case, the Kern County General Plan or the Eastern Kern County Air Pollution Control District 2023 Ozone Attainment Plan. Such plans are

prepared by local agencies to meet the requirements of state law and may contain the preparing agencies' comprehensive, long-term visions for physical development or resources conservation within the region.

3.0.4.2 Cumulative Impacts Analysis

Incremental impacts resulting from initial site preparation and construction, and operation and maintenance could combine with the incremental impacts of other projects to cause or contribute to cumulative effects. Direct and indirect effects of the Project are analyzed on a resource-by-resource basis throughout Chapter 3; and a comparative analysis of the cumulative impacts of the alternatives is provided in Chapter 4, *Alternatives*. Where the Project or an alternative would have no impact on a given resource, it could not cause or contribute to any cumulative impact to such a resource.

For the remaining resource areas, this Draft EIR analyzes potential incremental impacts of the Project and alternatives combined with the incremental impacts of past, present, and reasonably foreseeable future projects. It determines whether the incremental impacts of the Project would be significant and, if so, whether the incremental contribution of the Project would be cumulatively considerable. As noted above, the geographic scope of the cumulative effects analysis for each resource area is tailored to the natural boundaries of the affected resource. Unless otherwise noted in the analysis, cumulative effects have the potential to occur during any phase of the Project, from the moment on-site activities begin to the conclusion of post-Project site restoration activities. Existing conditions within the cumulative impacts area reflect a combination of natural conditions and the ongoing effects of past actions in the affected area.

TABLE 3.0-1
CUMULATIVE PROJECTS WITHIN 5 MILES OF THE PROJECT

Cumulative Map #	Project	Description	Location	Distance and direction to Proposed Project	Project Status
1	Cal City Cannabis Park, State Clearinghouse #2022040272	The Cal City Cannabis Park (APN 302-062-03) would be constructed as a lease facility for cannabis cultivation and manufacturing on approximately 40 acres. The overall facility would consist of a new guard shack, new manufacturing building, new indoor cultivation buildings, new parking lot, new walkway, and landscaping (City of California City 2022a).	California City, Gantt Road and Oscar Road	4 miles west of Cal City Substation	Status unknown. The draft Initial Study/Mitigated Negative Declaration review period ended May 13, 2022. Based on review of aerial images, construction of the project has not been initiated as of June 2023, which is the latest date of available imagery published by Google Earth (ESA 2025).
2	Hannabis Cannabis Production Facility Project	The project is approximately 80,000 square feet of commercial cannabis cultivation contained within a maximum of four industrial buildings of approximately 20,000 square feet each. The project incorporates a minimum of one retention/detention basin that would encompass approximately 0.46 acre of the project site. The project would be developed over 8.22 acres (Rush Environmental 2022).	California City, east and adjacent to Yerba Boulevard and north of Mendiburu Road	2 miles west of Cal City Substation	Status unknown. The comment period for Mitigated Negative Declaration closed March 29, 2022. Based on review of aerial images of the site, the Project appears to be operational as of June 2023, which is the latest date of available imagery published by Google Earth (ESA 2025).
3	Canni Land Cannabis Project	The project is a commercial cannabis distribution, cultivation, and manufacturing facility that includes 26 buildings for commercial cannabis cultivation within a total of 185,000 square feet and five manufacturing buildings within a total of 80,000 square feet (City of California City 2022b)	California City, southeast of Randsburg Road and bisected by Twenty Mule Team Parkway Road, Assessor Parcel Number 350-140-01	0.5 mile east of proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment.	Status unknown. The comment period for the Mitigated Negative Declaration closed April 18, 2022. Based on review of aerial images, construction of the project has not been initiated as of June 2023, which is the latest date of available imagery published by Google Earth (ESA 2025).
4	Level Up AM Cannabis Project	The project is approximately 195,480 square feet of commercial cannabis cultivation contained within a maximum of four industrial buildings of approximately 20,000 square feet each. The project incorporates a minimum of one retention/detention basin that would encompass approximately 0.46 acre of the project site. The project includes the use of 12 commercial CARB-certified generators (City of California City 2022c).	California City, north of Mendiburu Road and adjacent to and east of Yerba Boulevard, Assessor Parcel Number 225-092-13	2 miles west of Cal City Substation	Status unknown. Comment period for Mitigated Negative Declaration closed April 18, 2022. Based on review of aerial images, construction of the project was ongoing as of June 2023, which is the latest date of available imagery published by Google Earth (ESA 2025).

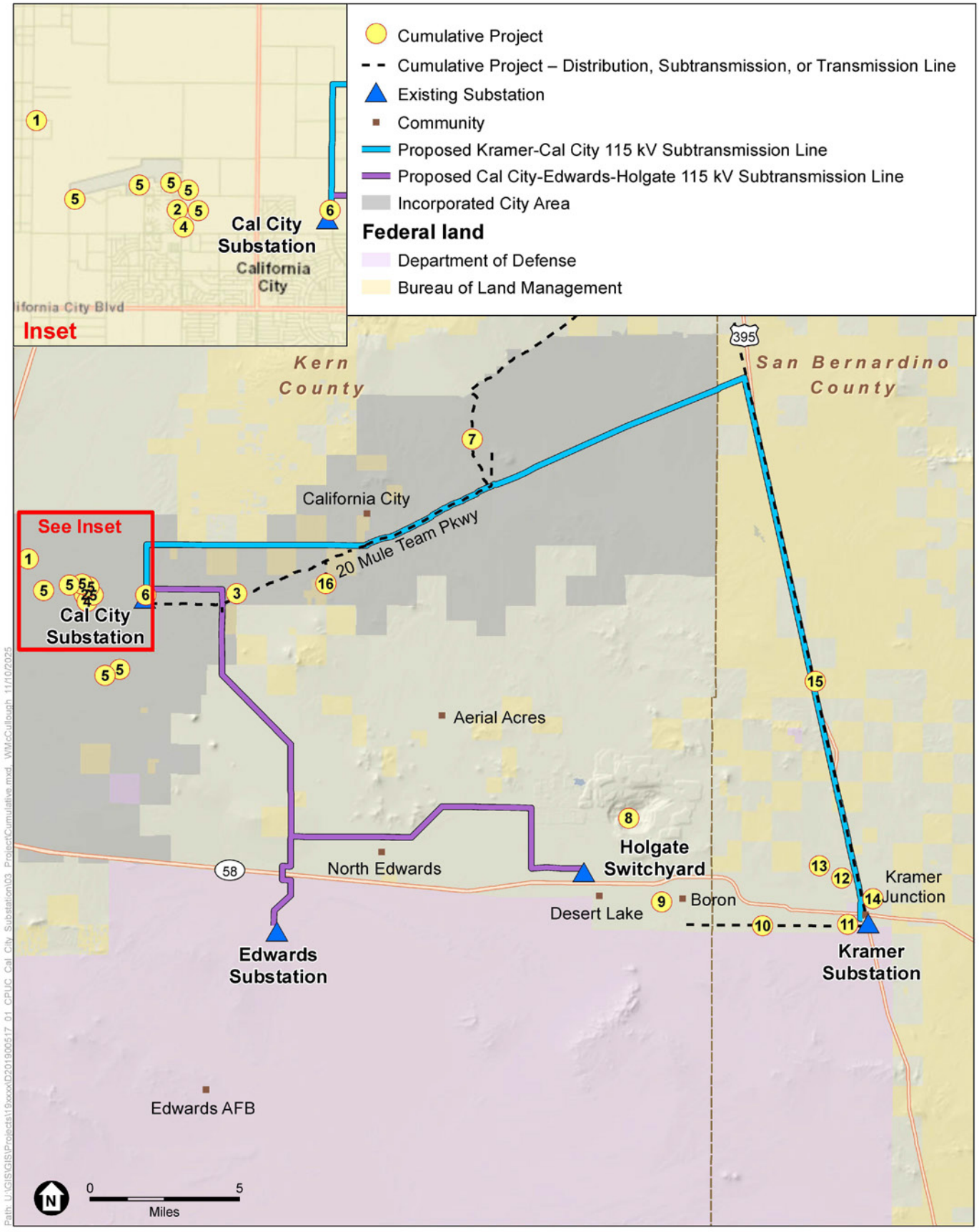
Cumulative Map #	Project	Description	Location	Distance and direction to Proposed Project	Project Status
5	Cannabis Cultivation Sites in the City of California City	Unspecified cannabis cultivation sites within the City of California City (City of California City 2024). The status of development, size, and scope of the projects are unknown.	California City. See Figure 3.0-1 for an illustration of the project locations.	Various distances between about 3 to 4 miles west and south-southwest of Cal City Substation	Status unknown.
6	SCE Battery Energy Storage System	An approximately 3 MW, 6 MWh Battery Energy Storage System with a targeted operation date of 2025. The project is currently in the planning stage and the exact size and location are not yet known (SCE 2023).	California City, next to Cal City Substation	Less than 0.1 mile from Cal City Substation	Estimated date for operation was 2025. SCE has provided no further status updates for this project.
7	Distribution Pappas 33 kV Line Project	A distribution line extension that will annex an existing segment of the Castle Butte 33 kV Line to connect to the Cal City Substation. The annexed line will be renamed the Pappas 33 kV Line. This name change will take effect once the entire Distribution Pappas 33 kV Line Project is constructed and in service. The annexed line segment would be under build on the proposed Kramer–Cal City 115 kV Subtransmission Line poles and its existing wood poles would be removed as part of the Project (SCE 2025).	California City and unincorporated Kern County. The distribution line extension project alignment is from Cal City Substation to Randsburg Substation. The Distribution Pappas 33 kV Line alignment intersects with the proposed Kramer–Cal City 115 kV Subtransmission Line alignment and the existing Castle–Butte 33 kV Line along a segment of Twenty Mule Team Parkway that extends northeast for 4.9 miles from Borax Bill Park. As described previously, that segment of distribution will be annexed and renamed the Pappas 33 kV Line once construction is complete.	The same alignment as the proposed Kramer–Cal City 115 kV Subtransmission Line alignment along Twenty Mule Team Parkway for 4.9 miles northeast from Borax Bill Park. The beginning of the line also extends south from Cal City Substation to Mendiburu Road.	The majority of the Distribution Pappas 33 kV Line project was constructed between September 2021 and July 2023, including replacement of a portion of structures along the 4.9-mile shared alignment with the proposed Kramer–Cal City 115 kV Subtransmission Line alignment along Twenty Mule Team Highway. Approximately 380 feet of underground line remains to be constructed about 6 miles north of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment.
8	U.S. Borax, Inc. Life of Mine Project Modifications to Use Permit	Modifications to the conditional use permits (originally approved January 6, 2004, Resolution 2004-006) to allow an extension of the life of operations at the 1,833-acre borax mine to November 21, 2125 (Kern County 2024).	Unincorporated Kern County, roughly 2 miles north of Desert Lake and Boron	2.5 miles east of proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment	The project was approved January 9, 2024.
9	Aratina Solar Center	The project consists of five solar photovoltaic power generating facilities that would generate a combined total of approximately 530 MW of electrical energy and 60 MW of energy storage on 2,300 acres of privately-owned land in unincorporated Kern County (Kern County 2021)	Unincorporated Kern County, north and south of Twenty Mule Team Road and State Route 58, in the vicinity of the unincorporated communities of Boron and Desert Lake, north of Edwards Air Force Base boundary and west of the San Bernardino County line.	Immediately adjacent to the south of a 0.9-mile long segment of the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment approximately 1 mile west of Holgate Switchyard, and 0.6 mile south of Holgate Switchyard.	The Kern County Board of Supervisors approved the Aratina Solar Center in October 2021. Construction moved forward in June 2024, and vegetation removal crews reportedly arrived at the site in August 2024. Construction activities are underway (Avantus 2025, Los Angeles Times 2024, SFGate 2025).

Cumulative Map #	Project	Description	Location	Distance and direction to Proposed Project	Project Status
10	Transmission Line Easement Edwards Air Force Base, State Clearinghouse #2021120598	The proposed 6.5 mile-long mono-pole 230 kV double-circuit transmission line, or gen-tie line, is within Edwards Air Force Base Utility Corridor 5 and would connect the Aratina Solar Center to SCE's Kramer Substation. In 2016, Edwards Air Force Base established Utility Corridor 5 to address future requests from the public and private enterprises to construct utility lines within the boundaries of Edwards Air Force Base to support off-base utilities (USAF 2016, 2021 and 2022).	Unincorporated San Bernardino and Kern counties, south of State Route 58, within the northern boundary of northeastern Edwards Air Force Base in San Bernardino and Kern counties. The proposed transmission line would be constructed with Utility Corridor 5 adjacent to an existing SCE 115 kV subtransmission line. The transmission line would be on USAF land.	The eastern extent is on and adjacent to Kramer Substation.	The Final Environmental Assessment was published June 2022. The California Department of Fish and Game issued a streambed alteration agreement for the project in April 2023 (CDFW 2023). Current status is unknown.
11	Beyond Food Mart–Kramer Junction, State Clearinghouse #2020060604	A conditional use permit to construct and operate a service station with 14 fueling pumps, a 7,250 square feet structure that includes a convenience store and drive-thru restaurant, and car wash on approximately 2.75-acre portion of a 9.82-acre parcel (San Bernardino County 2020).	Unincorporated San Bernardino County, Kramer Junction	0.3 mile west of proposed Kramer–Cal City 115 kV Subtransmission Line alignment.	Status unknown. The project was approved on August 20, 2020.
12	Kramer North Solar Farm—12AT 8 ME, LLC	Solar voltaic power generating facility (San Bernardino County 2024).	Unincorporated San Bernardino County, west side of U.S. Highway 395, approximately 2.5 miles north of State Route 58	0.2 mile west of proposed Kramer–Cal City 115 kV Subtransmission Line alignment	Conditionally approved; no permits issued as of May 2024.
13	Kramer South Solar Farm—37BF 8me, LLC	Solar voltaic power generating facility (San Bernardino County 2024).	Unincorporated San Bernardino County, Sheep Creek Road and State Route 58	1.6 miles west of proposed Kramer–Cal City 115 kV Subtransmission Line alignment	Conditionally approved by the Planning Commission on June 4, 2020; extension of time approved until June 16, 2026.
14	San Bernardino CSG 3 LLC	127.9 acres, 6.5 MW solar plant (San Bernardino County 2024)	Unincorporated San Bernardino County, Kramer Junction, southeast corner of intersection of State Route 58 and U.S. Highway 395, north of the Burlington Northern Santa Fe railroad tracks and northeast of SCE's Kramer Substation.	0.5 mile northeast of Kramer Substation.	The draft CEQA document is in development.
15	SCE Ivanpah–Control Project	Segment 2 of the Ivanpah–Control Project would include the construction of the new Inyokern–Kramer-Randsburg 115 kV subtransmission line, in which conductors for only one circuit would be installed on double-circuit structures (leaving a vacant position available). After this line is energized, the existing Kramer–Randsburg 115 kV subtransmission line would be removed.	Unincorporated San Bernardino County, the new line would parallel and be immediately east of the proposed Kramer–Cal City line alignment along the west side of U.S. Highway 395 for approximately 18.5 miles north of Kramer Junction to Twenty Mule Team Parkway.	Immediately east of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment alPong the west side of U.S. Highway 395 for approximately 18.5 miles north of Kramer Junction to Twenty Mule Team Parkway.	The Draft EIR is expected to be released to the public early 2026.

Cumulative Map #	Project	Description	Location	Distance and direction to Proposed Project	Project Status
16	Core Civic California City Immigration Processing Center	The former state prison in California City that closed in 2023 officially reopened in 2025 as an U.S. Immigration and Customs Enforcement (ICE) detention center (ICE 2025, KBAK 2025).	City of California City, at 22844 Virginia Boulevard, approximately 1.5 miles southwest of Borax Bill Park and Station.	Approximately 1 mile south of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment.	Housing of ICE detainees at the facility appears to have begun during the third quarter of 2025 (KBAK 2025).

NOTES: APN = Assessor's Parcel Number; CARB = California Air Resources Board; EIR = environmental impact report; kV = kilovolts; MW = megawatts; MWh = megawatt-hours; SCE = Southern California Edison; USAF = U.S. Air Force

SOURCE: Data compiled by Environmental Science Associates in 2025. See Section 3.0.5, *References*.



SOURCES: See Section 3.0.4, References

Cal City Substation 115 kV Upgrade Project

Figure 3.0-1
Cumulative Projects within 5 Miles of the Project

3.0.5 References

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3.1 Aesthetics

This section evaluates the impacts of the Project on aesthetics and visual resources. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to aesthetics.

3.1.1 Visual Resources Definitions

The following key terms are used in this analysis of aesthetics and visual resources.

A ***viewshed*** for a project is the surrounding geographic area from which a project is likely to be seen, based on topography, atmospheric conditions, land use patterns, and roadway orientations, including publicly accessible vantage points. The proximity of a project to a vantage point in the viewshed is categorized into three ***distance zones*** based on the position of the viewer and are measured from one static point: the ***foreground*** (up to 0.5 mile from the viewer), ***middleground*** (0.5 mile to 3 miles from the viewer), and ***background*** (beyond 3 miles from the viewer).

Scenic resources are defined as landscape patterns and features that are considered visually or aesthetically pleasing and, therefore, contribute positively to the definition of a distinct community or region. Natural and built features that compose landscape patterns are visual resources that can be viewed by the general public, thus contributing to the public's experience and appreciation of the environment. Scenic resources may include trees or important vegetation; landform elements (e.g., hills, ridgelines, or rock outcroppings); water features (e.g., rivers, bays, or reservoirs); and landmarks, important buildings, or historic structures.

A ***scenic vista*** is an area that is designated, signed, and accessible to the public for viewing and sightseeing. These designated viewing locations are recognized and valued for their scenic quality.

A ***scenic highway*** is any stretch of public roadway that is designated as a scenic corridor by a federal, state, or local agency. A ***state scenic highway*** is one that has been designated or deemed eligible for inclusion in the California State Scenic Highways program, which is explained in Section 3.1.2.5.

A ***viewpoint***, in the context of this analysis, is a publicly accessible vantage point on a travel route, or at a use area or a potential use area, where the view of a proposed activity would be most visible. For purposes of the following analysis, viewpoints were identified to develop visual simulations of views of the Project sites.

Visual character is the arrangement of a particular landscape as visually defined by the variety and intensity of the landscape features and the four basic visual elements of form, line, color, and texture, giving the landscape in view a distinctive quality.

Visual quality is the overall visual impression or attractiveness of a place as determined by the landscape characteristics, which may include landforms, rock forms, water features, and patterns of vegetation. The attributes of line, texture, and color combine to form landscape characteristics whose coherence, vividness, uniqueness, harmony, contrast, and pattern contribute to the overall visual quality of an area. For the purposes of this EIR, visual quality is defined according to three levels:

- *Indistinctive or industrial:* Generally lacking in natural or cultural visual resource amenities typical of the region within which a project is located.
- *Representative:* Typical or characteristic of the region's natural and/or cultural visual amenities.
- *Distinctive:* Unique or exemplary of the region's natural or cultural scenic amenities.

Viewer exposure pertains to variables that affect viewing conditions from potentially sensitive areas. Viewer exposure considers the following factors:

- *Landscape visibility*—the ability to see the landscape.
- *Viewing distance*—the proximity of viewers to a project.
- *Viewing angle*—whether a project would be viewed from above (superior), below (inferior), or from a level (normal) line of sight.
- *Extent of visibility*—whether the line of sight is open and panoramic within a viewshed or restricted by terrain, vegetation, and/or structures.
- *Duration of view*.

Viewer types and volumes of use pertain to the types of use (i.e., public viewers, including recreationists and motorists) and amounts of use (e.g., number of recreational users or motorists) that various land uses receive.

Sensitive receptors or sensitive viewpoints include individuals or groups of individuals who have views of a site afforded by a scenic vista, scenic highway, residence, or public recreation area.

Visual sensitivity is the overall measure of an existing landscape's susceptibility to adverse visual changes. People in different visual settings, typically characterized by different land uses surrounding a project, have varying degrees of sensitivity to changes in visual conditions depending on the overall visual characteristics of the place. In areas of more distinctive visual quality, such as designated scenic highways, designated scenic roads, parks, and recreation and natural areas, visual sensitivity is more pronounced. In areas of less distinctive visual quality, sensitivity to change tends to be less pronounced, depending on the level of visual exposure. The analysis of visual sensitivity is based on the combined factors of visual quality, viewer types and volumes, and visual exposure to a project. Visual sensitivity is reflected according to high, moderate, and low visual sensitivity ranges.

Visual dominance is a measure of the apparent size of a project component relative to other visible landscape features in the viewshed or seen area. The visual dominance of a component is affected by its relative location in the viewshed and the distance between the viewer and that project component.

Visual screening, also referred to as *view blockage* or *impairment*, is a measure of the degree to which a project would obstruct or block views to aesthetic features due to its position and/or scale. Blockage of aesthetic landscape features or views can cause adverse visual impacts, particularly in instances where scenic or view orientations are important to the use, value, or function of the land use.

Visual contrast or ***change*** is a measure of the degree of change in line, form, color, and texture that a project would create, when compared to the existing landscape. Visual contrast ranges from "none" to "strong," and may be characterized as follows:

- *None*—The element contrast is not visible or perceived.
- *Weak*—The element contrast can be seen but does not attract attention.
- *Moderate*—The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- *Strong*—The element contrast demands the viewer's attention and cannot be overlooked.

3.1.2 Environmental Setting

The following description of the environmental setting is informed in part by information provided in, and in support of, the Proponent's Environmental Assessment that Southern California Edison (SCE) prepared for the Project (SCE 2023, 2024b). The information was independently reviewed by CPUC's consultant, Environmental Science Associates, and was found to be technically adequate.

3.1.2.1 Study Area

The study area for the analysis of potential impacts related to aesthetic and scenic resources consists of publicly accessible locations, including those from major or scenic roadways, scenic vistas, parks, and/or lands used for recreational purposes from which components of the Project may be visible.

The study area for the Project is located in Kern and San Bernardino counties in the Mojave Desert region of California on federal, state, private, and municipal land (see Figure 2-1 in Chapter 2). These lands include unincorporated areas of Kern County and San Bernardino County, as well as California City, Edwards Air Force Base (EAFB) (a U.S. Department of Defense military facility), and public lands under the jurisdiction of the U.S. Bureau of Land Management (BLM) and the California Department of Fish and Wildlife. Approximately 90 percent of the Project alignments are located in undeveloped open areas, with the remaining 10 percent located in developed areas (including within California City).

The study area for this evaluation of Project impacts on aesthetics and visual resources is physically defined by the surrounding topography. It is bounded by the San Gabriel Mountains on the south, the Tehachapi Mountains on the west, and the Rand Mountains to the north (City of California City 2009). EAFB forms the physical study area boundary on the south. The study area is in the Mojave Desert geographic province, which is characterized by a gently undulating ground surface with isolated buttes and low to moderate relief across the desert floor (City of California City 2009). The study area is mostly relatively flat, with an average elevation of 2,400 feet above sea level, and includes portions of the Peerless Valley, Antelope Valley, and Fremont Valley.

Landscapes in the study area include alluvial fans, floodplains, terraces, basin floors, fan piedmonts, gravel pits, hills, mountains, quarries, rock pediments, and sand sheets.

3.1.2.2 Landscape Setting

Vegetation in undeveloped portions of the aesthetics study area includes low-growing desert grasses and scrub, which are typical in the Mojave Desert. As described in more detail in this section, land uses in the Project vicinity are undeveloped; open space; protected wildernesses and preserves; BLM-managed lands; EAFB; mineral extraction, recreation, and commercial, residential, and agricultural zoned land; and energy infrastructure.

The Project alignments skirt around the eastern and northern perimeter of California City to the Cal City Substation. The majority of the Project's study area is sparsely settled with rural residences and recreational open space, connected by dirt trails and public roadways, as well as a few paved roads (e.g., highways, city streets). Other developed areas in the Project study area include Kramer Junction, which includes highway commercial development and the Kramer Substation; the communities of Boron and Desert Lake, which include low-density residential and commercial development, the Holgate Substation, and an open-pit borax mine; and the community of North Edwards, which includes rural residential and commercial development. The Edwards Substation is located south of North Edwards, on the south side of State Route (SR) 58 within the boundaries of EAFB. The former Boron Federal Aviation Administration (FAA) Radar Station is located near the eastern edge of the Project area, off U.S. Highway 395 (U.S. 395).

The landscape of the Project area is generally characterized by its expansive views of the flat Mojave Desert with occasional topographic features that are bounded by foothills and mountainous terrain. Pale tones of green, brown, red, and gray are visible in the desert vegetation and exposed earth surface. Because much of the land in the study area is undeveloped, sources of nighttime lighting include vehicles on roadways, interspersed residences, and commercial buildings.

3.1.2.3 Parks and Open Spaces

The Project area crosses or is adjacent to numerous open spaces, parks, off-highway vehicle (OHV) areas, and wilderness areas variously managed by BLM, the City of California City, Kern County, and the California Department of Fish and Wildlife. These areas provide a range of recreational opportunities and scenic values. Additional information on the recreational facilities within the Project study area is provided in Section 3.16, *Recreation*.

3.1.2.4 Scenic Vistas

For the purposes of this analysis, *scenic vistas* are defined as distant public views from designated viewing locations along or through an opening or corridor that is recognized and valued for its scenic quality. No specific designated scenic vistas have been identified in the study area by the California Department of Transportation (Caltrans), San Bernardino County, Kern County, or the City of California City (Caltrans 2015; San Bernardino County 2019; Kern County 2009; City of California City 2009).

3.1.2.5 Scenic Highways

No state-designated scenic highways traverse the study area (Caltrans 2018), as defined in Section 3.1.1. One highway in the vicinity of the Project, SR 58, has been identified as eligible but not formally designated as a scenic highway by Caltrans or Kern or San Bernardino counties. As depicted in Figure 2-1 in Chapter 2, *Project Description*, SR 58 runs generally east to west in the southern portion of the study area. The proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment would cross SR 58 north of EAFB and the proposed Kramer–Cal City 115 kV Subtransmission Line alignment would cross SR 58 in the vicinity of Kramer Junction.

San Bernardino County has identified SR 58 as a designated scenic route (San Bernardino County 2019). Kern County does not identify any county-designated scenic routes (Kern County 2009). The City of California City does not identify any designated scenic routes other than eligible scenic highways identified by Caltrans (City of California City 2009).

3.1.3 Viewers and Viewer Sensitivity

The primary potentially affected viewer groups within the study area are motorists and recreational facility users, along with residents located within viewing distance of the Project. These viewers experience the study area within the context of a setting that includes existing substations, transmission line facilities, and other surrounding development and facilities.

3.1.3.1 Motorists

Motorists are the largest viewer group and include both local and regional travelers who are familiar with the visual setting, and those who use the roads less regularly. Motorists traveling on SR 58 pass two locations where the Project alignment would cross over the roadway (once where the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment would extend into EAFB and once where the proposed Kramer–Cal City 115 kV Subtransmission Line alignment would extend into Kramer Substation). Motorists on U.S. 395 would view the proposed Kramer–Cal City 115 kV Subtransmission Line alignment for approximately 18 miles, as the alignment would roughly parallel U.S. 395 within an existing utility corridor for that distance. Existing 220 kV and 115 kV transmission and subtransmission electrical lines strung along tall lattice steel towers (LSTs) currently dominate the view along U.S. 395.

A small number of local motorists travel along the partially paved Twenty Mule Team Parkway between U.S. 395 and the developed areas of California City, a stretch of road heavily used by OHV riders. The proposed Kramer–Cal City 115 kV Subtransmission Line alignment would

parallel Twenty Mule Team Parkway for approximately 14 miles. Viewer sensitivity for motorists ranges from low when views are at highway speed and brief (proposed subtransmission line alignment crossings of SR 58) to moderately high when views are for a longer duration or at a lower speed (i.e., the proposed Kramer–Cal City 115 kV Transmission Line alignment paralleling Twenty Mule Team Parkway or local roads).

3.1.3.2 Recreationists

Recreationists use parks and trails in the study area, such as Twenty Mule Team Parkway and other OHV areas, and cross the Project alignments. Recreationists' views of the proposed alignments range from relatively brief to lengthier, depending on speed, terrain conditions, attention to vehicle operation, and other factors. The sensitivity of this viewer group is considered moderate to high given the potential for extended-duration views.

3.1.3.3 Residents

Residential neighborhoods near the Project are in California City and the communities of North Edwards, Boron, and Desert Lake or on the sparsely settled, rural residential properties dispersed within the study area. In California City, the nearest residence is approximately 140 feet southeast of the Kramer–Cal City 115 kV Subtransmission Line's proposed alignment near the intersection of Twenty Mule Team Parkway and Rudnick Road. The nearest residential neighborhood to the existing Cal City Substation is approximately 780 feet to the southeast.

The North Edwards residential neighborhood is approximately 325 feet from the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment. The Desert Lake residential neighborhood is approximately 0.5 mile from, and across SR 58 from, the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment and Holgate Switchyard.

Depending on the proximity to the Project alignment, residential viewers tend to have high viewer exposure and awareness from publicly accessible viewing points within their neighborhoods; therefore, the sensitivity of this viewer group is considered high.

3.1.4 Light and Glare

Existing sources of light and glare in the study area include nighttime highway traffic along U.S. 395, SR 58, and other roadways, as well as localized lighting associated with residential and commercial development in California City and smaller communities. Another source of light and glare in the study area is from the existing Cal City, Edwards, and Kramer substations and Holgate Switchyard, including interior and exterior lighting from buildings, lighting from switch racks, and sensor lights. Lighting emanating from EAFB also contributes to ambient nighttime lighting south of the study area.

3.1.5 Visual Setting and Representative Views

The following subsections describe the visual character found in the study area and refer to a set of 19 photographs that document representative views in the vicinity of the Project and larger

study area. The viewpoint locations are shown in **Figure 3.1-1** and the accompanying viewpoint photographs are included in Figures 3.1-2 through 3.1-11.

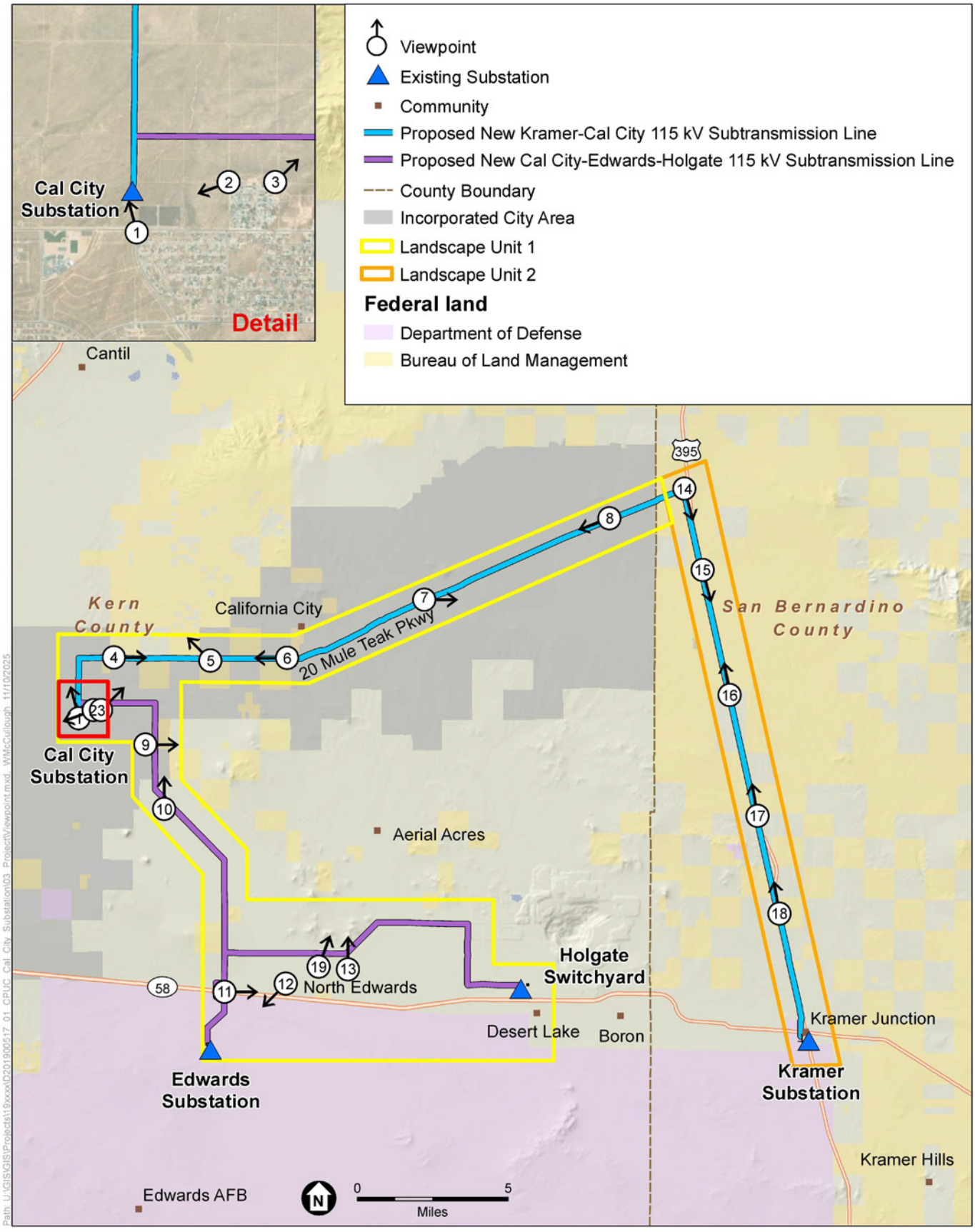
Two landscape units for representative views have been identified for the Project. Landscape Unit 1, shown in yellow in Figure 3.1-1, includes (a) the portion of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment that would pass through primarily undeveloped portions of California City between U.S. 395 and the Cal City Substation; (b) the Cal City Substation; and (c) the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment. Views of, and within, Landscape Unit 1 are primarily desert and open-space views. This is true even near developed areas such as residential neighborhoods in California City, North Edwards, Desert Lake, Boron, or Aerial Acres. Landscape Unit 1 includes the portion of the proposed Cal City–Edwards-Holgate Subtransmission Line alignment that would roughly parallel SR 58 between the Edwards and Holgate substations, including the area where the proposed alignment would cross SR 58. Viewpoints 1–13 and 19 (see Figures 3.1-2 through 3.1-9) are associated with Landscape Unit 1.

Landscape Unit 2, shown in orange in Figure 3.1-1, includes the portion of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment that would parallel U.S. 395. Although the general environmental conditions within the study area in this corridor are similar to those in Landscape Unit 1, views of and within Landscape Unit 2 are focused primarily on U.S. 395 and the adjacent utility corridor. Landscape Unit 2 also contains more land parcels managed by BLM crossed by the Project alignment than Landscape Unit 1. Viewpoints 14–18 (see Figures 3.1-8 through 3.1-11) are associated with Landscape Unit 2.

3.1.5.1 Landscape Unit 1

Viewpoint 1: Cal City Substation at Mendiburu Road, Looking North-Northwest

As seen in **Figure 3.1-2**, Viewpoint 1 shows the existing view at the corner bend of Mendiburu Road, looking north-northwest toward the Cal City Substation. This location is representative of public views from the nearest residential neighborhood to the Cal City Substation. Looking northwest from this location, the expanded Cal City Substation would be visible in the view between 0.10 and 0.25 mile away. The neighborhood is to the right and behind the viewer location. The tan-colored sandy soil and blue sky are the visual base for this view. Multiple existing distribution lines mounted on wood poles run north-south from the substation in this view near the residential neighborhood. The wood poles add strong vertical linear forms in this view, with the utility lines providing fainter horizontal linear features tapering into the distant visual perspective. The street view of an existing solar field is hidden behind a masonry block wall, as seen in the right-center of the image. The substation presents as a gray, metallic cluster near the center of the image, partially hidden behind scattered brown and gray-green shrubs that give a mottled texture to the center of the view. The Black Hills are visible as a wider linear tan-gray form in the background views. Middleground views are blocked by intervening topography, vegetation, and distance.



SOURCES: ESA, 2023; SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-1
Viewpoint Location Map



Viewpoint 1: Cal City Substation at Mendiburu Road, Looking North-Northwest



Viewpoint 2: Cal City Substation at Sarah Street Residences, Looking West-Southwest

2019/D201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-2
Viewpoints 1 and 2

Viewpoint 2: Cal City Substation at Sarah Street Residences, Looking West-Southwest

As seen in Figure 3.1-2, Viewpoint 2 shows the existing view from the Sarah Street residential neighborhood, looking west-southwest toward the Cal City Substation, where the expanded substation would be visible in the view approximately 0.5 mile away. This location is representative of public views from a residential neighborhood near the Cal City Substation. The tan-colored sandy soil and light gray cloudy sky are the visual base for this view. The substation and its associated structures present as vertical features punctuating the horizon, partially hidden behind scattered brown and gray-green shrubs among crisscrossing dirt roads. The Tehachapi Mountains are visible as an undulating horizontal feature in the distance in the background views. The existing built environment displays vertical features notably including power poles visible in the middleground horizon and wind turbines in the Tehachapi foothills of the background view.

Viewpoint 3: Sarah Street, Looking Northeast

As seen in **Figure 3.1-3**, Viewpoint 3 shows the existing view from the Sarah Street residential neighborhood. Looking northeast from this location, the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment is approximately 0.3 mile away and the proposed Kramer–Cal City 115 kV Subtransmission Line alignment is approximately 2 miles away. This view is representative of views looking northeast from public viewpoints in this neighborhood. The tan-colored sandy soil and blue sky are the visual base for this view. No constructed features are distinctly visible, but crisscrossing dirt roads intersect scattered brown and rust-colored shrubs. The Rand Mountains are visible as an undulating horizontal feature in the distance in the background views. The horizon line in this view is pronounced.

Viewpoint 4: Rudnick Boulevard at Cache Creek, Looking East

As seen in Figure 3.1-3, Viewpoint 4 shows the existing view looking east along Rudnick Boulevard. The road dips where it crosses Cache Creek. This location is representative of views for OHV riders, as Rudnick Boulevard is a designated California City OHV trail, and is along the proposed Kramer–Cal City 115 kV Subtransmission Line alignment. Looking due east, the proposed subtransmission line alignment is adjacent to the heavily used dirt-packed Rudnick Boulevard. The tan-colored sandy soil and blue sky are the visual base for this view. A wire fence with metal T-posts is visible along the north side of the roadway, and scattered brown, rust, and silvery-green shrubs fill the landscape. Small hills punctuate the distant horizon in the background view. The horizon line in this view is pronounced.

Viewpoint 5: Rudnick Boulevard and Randsburg Mojave Road, Looking Northwest

As seen in **Figure 3.1-4**, Viewpoint 5 shows the existing northwest view from Rudnick Boulevard near Randsburg Mojave Road. The photograph is representative of views for OHV riders, as this location is directly on a designated OHV trail, with the proposed Kramer–Cal City 115 kV Subtransmission Line alignment approximately 0.10 mile to the north. Looking northwest, the proposed subtransmission line alignment would intersect the view from left to right. The tan-colored sandy soil and blue sky are the visual base for this view. No constructed features beyond dirt roads are distinctly visible. Scattered silvery-green and olive-brown shrubs fill the landscape, and the Tehachapi and Chuckwalla mountains are visible in the far background.



Viewpoint 3: Sarah Street, Looking Northeast



Viewpoint 4: Rudnick Boulevard at Cache Creek, Looking East

2019/02019005517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-3
Viewpoints 3 and 4



Viewpoint 5: Rudnick Boulevard and Randsburg Mojave Road, Looking Northwest



Viewpoint 6: Rudnick Boulevard and Oscar Avenue, Looking West

2019/D20190517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-4
Viewpoints 5 and 6

Viewpoint 6: Rudnick Boulevard and Oscar Avenue, Looking West

As seen in Figure 3.1-4, Viewpoint 6 shows the existing view along Rudnick Boulevard near its intersection with Oscar Avenue, looking west. This location is representative of views for OHV riders, as it is directly on a designated California City OHV trail, and it is along the proposed Kramer–Cal City 115 kV Subtransmission Line alignment. This location is approximately 0.45 mile west of Borax Bill Park, an OHV hub. Looking due west, the proposed subtransmission line alignment is adjacent to the heavily used dirt-packed Rudnick Boulevard. The horizon in this view is demarcated by the Tehachapi Mountains, with the tan-colored soil and blue sky as the visual base of this view. Scattered silvery-green and olive-brown shrubs fill the landscape, and the desert floor rises sharply in the background to meet the distant Tehachapi Mountains.

Viewpoint 7: Twenty Mule Team Parkway and Rutgers Road, Looking East

As seen in **Figure 3.1-5**, Viewpoint 7 shows the existing view from the intersection of Twenty Mule Team Parkway and Rutgers Road, looking east. This location is approximately 1 mile southwest of Galileo Hill and is representative of views for both regular motorists and OHV riders, as it is directly on a designated California City OHV trail, and it is along the proposed Kramer–Cal City 115 kV Subtransmission Line alignment. Looking due east, the proposed subtransmission line would be adjacent to a paved section of Twenty Mule Team Parkway. The gray roadway is the principal visual feature in the foreground view. Distribution lines mounted on wood poles are strung across the northern side of the roadway in the left-center of the view and scattered silvery-green and olive-brown shrubs fill the landscape to the horizon. Galileo Hill is visible on the distant horizon.

Viewpoint 8: Twenty Mule Team Parkway and Temple Street, Looking Southwest

As seen in Figure 3.1-5, Viewpoint 8 shows the existing view looking west at the intersection of Twenty Mule Team Parkway and Temple Street. This view is representative of views for OHV riders, as it is directly on a designated California City OHV trail, and it is along the proposed Kramer–Cal City 115 kV Subtransmission Line alignment. Looking due west along Twenty Mule Team Parkway, the proposed subtransmission line alignment is adjacent to the roadway. The gray roadway covered with scattered tan-colored soil dominates the foreground view. Scattered silvery-green and olive-brown shrubs fill the landscape. Galileo Hill, approximately 5 miles away, interrupts the horizon, with the Tehachapi Mountains visible in the far, seldom-seen view.

Viewpoint 9: Rome Beauty Drive, Looking East

As seen in **Figure 3.1-6**, Viewpoint 9 shows the existing view from the residential neighborhood on Rome Beauty Drive, looking east. From this location, looking due east, the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment is approximately 0.25 mile away. The tan-colored sandy soil and blue sky are the visual base for this view. Vertical wood poles supporting an existing distribution line are the only distinct constructed features in the view. The landscape is characterized by scattered tan and gray-green shrubs extending into the middleground view. Castle Butte is visible approximately 3 miles away and defines the horizon.



Viewpoint 7: Twenty Mule Team Parkway and Rutgers Road, Looking East



Viewpoint 8: Twenty Mule Team Parkway and Temple Street, Looking Southwest

2019/020190517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-5
Viewpoints 7 and 8



Viewpoint 9: Rome Beauty Drive, Looking East



Viewpoint 10: California City Boulevard and Sequoia Boulevard, Looking North

2019/0201900517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-6
Viewpoints 9 and 10

Viewpoint 10: California City Boulevard and Sequoia Boulevard, Looking North

As seen in Figure 3.1-6, Viewpoint 10 shows the existing view from the intersection of California City Boulevard and Sequoia Boulevard, looking north. This location is representative of views of the Project for motorists on northbound California City Boulevard. From this location, looking due north, the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment is approximately 0.3 mile away. The gray roadway and tan ground cover co-dominate the foreground view. An existing distribution line strung across wood poles is faintly visible across the sky in the middleground view and crosses over California City Boulevard. The landscape is characterized by tufts of gray-green shrubs along the roadside, with tan and rust-colored patches of grasses and shrubs further beyond. The Rand Mountains are visible across the horizon in the background or seldom-seen view.

Viewpoint 11: State Route 58 Eastbound, Looking East

As seen in **Figure 3.1-7**, Viewpoint 11 shows the existing view on eastbound SR 58. This location is representative of motorists' views of the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment from eastbound SR 58 within California City, approaching the exit for the northern entrance to EAFB. The foreground view is dominated by the gray highway and striping, as well as other human-made infrastructure such as the overpass bridge, utility poles and lines, signage, and light poles, with low tan and olive-green shrubs filling the landscape with patches of exposed tan earth. Looking east from this location, the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment crosses the view from left to right approximately 900 feet away. The overpass creates a hard visual line within the otherwise natural horizon in this view.

Viewpoint 12: Lorraine Avenue and 160th Street, Looking Southwest

As seen in Figure 3.1-7, Viewpoint 12 shows the existing view from the southwest corner of the North Edwards residential community, at the corner of Lorraine Avenue and 160th Street, looking southwest. This location is a potential staging area site for the Project. The landscape is highly disturbed and compacted from vehicles and other human activity. Few scattered brown shrubs and exposed sandy soil characterize the foreground view. The existing transmission corridor and SR 58 are faintly visible to the southwest, approximately 0.5 mile away. The Rosamond Hills are visible in the background or seldom-seen view.

Viewpoint 13: Bernard Avenue and Flint Street, Looking North

As seen in **Figure 3.1-8**, Viewpoint 13 is representative of views of the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment from the nearest residential area in North Edwards, at the intersection of Bernard Avenue and Flint Street, looking north. The landscape is characterized by a gray pavement section with the dusty tan and silvery-green shrubs and exposed, tan earth. An abandoned motel/apartment structure is visible to the northeast in the middleground view, and a distribution line strung across wood poles lines the west side of Flint Street. A series of red-toned hills are visible in the background. Looking north from this location, the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment crosses the view from left to right approximately 0.27 mile away.



Viewpoint 11: SR 58 Eastbound, Looking East



Viewpoint 12: Lorraine Avenue and 160th Street, Looking Southwest

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SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-7
Viewpoints 11 and 12



Viewpoint 13: Bernard Avenue and Flint Street, Looking North



Viewpoint 14: Twenty Mule Team Parkway Utility Corridor, Looking South-Southeast

2019/020190517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-8
Viewpoints 13 and 14

Viewpoint 19: Claymine Road South of Hillcrest Avenue, Looking Northeast

As seen in **Figure 3.1-9**, Viewpoint 19 shows the existing view near the intersection of Claymine Road and Hillcrest Avenue, looking northeast toward the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment at North Edwards. This location is representative of views of the alignment from residential areas and motorists on Claymine Road. The landscape is characterized by dusty tan, silvery-green, and rust-colored shrubs and exposed tan earth. From this view, a single-family residence with ornamental landscaping is visible to the east, and a distribution line strung across approximately 45-foot-tall wood poles parallels the roadway on the east side of Claymine Road in the foreground. Another distribution line following Suckow Road crosses Claymine Road approximately 0.13 mile (700 feet) away in the foreground. A series of red-toned hills are visible in the middleground, while the silhouettes of distant hills and the Rand Mountains are faintly visible in the background. Looking north from this location, the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment crosses the view from left to right approximately 0.1 mile (500 feet) away in the foreground, following Suckow Road.

3.1.5.2 Landscape Unit 2

Viewpoint 14: Twenty Mule Team Parkway Utility Corridor, Looking South-Southeast

As seen in Figure 3.1-8, Viewpoint 14 shows the existing view looking south-southeast at the intersection of Twenty Mule Team Parkway and an existing OHV trail. The landscape is characterized by rusty and olive-brown shrubs, and U.S. 395 presents as a faint, white linear feature and disappears as it crests the distant rolling hills in the background view. Existing electric transmission lines are strung along tall LSTs, which dominate the view from the foreground to the horizon. The proposed Kramer–Cal City 115 kV Subtransmission Line alignment is parallel to the existing transmission corridor adjacent to the highway. This location is representative of views of the alignment from and/or on BLM-managed land for motorists on southbound U.S. 395 and recreationists on the adjacent OHV trails.

Viewpoint 15: Southbound U.S. 395, Looking South-Southeast

As seen in **Figure 3.1-10**, Viewpoint 15 shows the existing view looking south-southeast from U.S. 395 near Kramer Station Road. This location is representative of views of the Kramer–Cal City 115 kV Subtransmission Line alignment for motorists on southbound U.S. 395. The proposed Kramer–Cal City 115 kV Subtransmission Line alignment parallels the existing transmission corridor adjacent to the highway. The landscape is characterized by low rusty and olive-brown shrubs on the right and the gray and striping of the highway on the left. The outstretched perspective of U.S. 395 and the tall LSTs dominate the view to the horizon.

Viewpoint 16: Off-Highway Vehicle Trails, Looking North-Northwest

As seen in Figure 3.1-10, Viewpoint 16 shows the existing view looking north-northwest at the intersection of existing OHV trails adjacent to U.S. 395. The landscape is characterized by low pale tan and olive-brown shrubs, and visible traffic along U.S. 395, approximately 130 feet east. Existing electric transmission lines are strung along tall LSTs, which dominate the view. The proposed Kramer–Cal City 115 kV Subtransmission Line alignment parallels the existing



Viewpoint 19: Claymine Road South of Hillcrest Avenue, Looking Northeast

2019/D20190517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-9
Viewpoint 19



Viewpoint 15: Southbound U.S. 395, Looking South-Southeast



Viewpoint 16: Off-Highway Vehicle Trails, Looking North-Northwest

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SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-10
Viewpoints 15 and 16

transmission corridor adjacent to the highway. This location is representative of views of the alignment from and/or on BLM-managed land for recreationists on the adjacent OHV trails.

Viewpoint 17: Northbound U.S. 395 at Off-Highway Vehicle Turnoff, Looking North-Northwest

As seen in **Figure 3.1-11**, Viewpoint 17 shows the existing view looking north-northwest on U.S. 395 near an OHV turnoff area. This location is representative of views of the Kramer–Cal City 115 kV Subtransmission Line alignment for motorists on northbound U.S. 395 and from and/or on BLM-managed land. The landscape is dominated in foreground and middleground views by the highway and LSTs, with natural areas characterized by patches of small tan and silvery-green shrubs. Red Mountain is visible to the northeast, approximately 17 miles away in the background or seldom-seen view. The highway and LSTs visually trail off to the horizon. The proposed Kramer–Cal City 115 kV Subtransmission Line alignment parallels the existing transmission corridor adjacent to the highway.

Viewpoint 18: Northbound U.S. 395 at Marshall Street, Looking North-Northwest

As seen in Figure 3.1-11, Viewpoint 18 shows the existing view looking north-northwest on U.S. 395 near Marshall Street. This location is representative of views of the Kramer–Cal City 115 kV Subtransmission Line alignment for motorists on northbound U.S. 395 and from and/or on BLM-managed land. Foreground and middleground views are dominated by the gray highway and LSTs, which fade out of view at the horizon line. The landscape is characterized by patches of small tan and silvery-green shrubs along the roadway, with larger rust-colored shrubs scattered beyond. The closed Boron FAA Radar Station presents as a small white orb atop a small ridge, approximately 2.5 miles to the northwest. Red Mountain is faintly visible to the northeast, approximately 20 miles away. The proposed Kramer–Cal City 115 kV Subtransmission Line alignment parallels the existing transmission corridor adjacent to the highway.

3.1.6 Regulatory Setting

3.1.6.1 Federal

Code of Federal Regulations Title 14

All airports and navigable airspace not administered by the U.S. Department of Defense are under the jurisdiction of the FAA. Title 14, Part 77 of the Code of Federal Regulations establishes the standards and required notification for obstructions affecting navigable airspace. In general, construction projects exceeding 200 feet in height—or those extending at a ratio greater than 100 to 1 (horizontal to vertical) from a public airport runway more than 3,200 feet long out to a horizontal distance of 20,000 feet—are considered potential obstructions and require FAA notification. In addition, construction projects extending at a ratio greater than 50 to 1 (horizontal to vertical) from a public airport runway measuring 3,200 feet or less out to a horizontal distance of 10,000 feet are considered potential obstructions and require FAA notification. This regulation is applicable to the aesthetics review of the Project because the proposed subtransmission line towers could be required to be equipped with aviation lighting and/or markings.



Viewpoint 17: Northbound U.S. 395 at Off-Highway Vehicle Turnoff, Looking North-Northwest



Viewpoint 18: Northbound U.S. 395 at Marshall Street, Looking North-Northwest

2019/D20190517.01 - CPUC Cal City Substation/05 Graphics-GIS-Modeling/Illustrator

SOURCE: SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-11
Viewpoints 17 and 18

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act of 1976 (United States Code Title 43, Section 1701 et seq.) establishes under Section 102(a)(8) that "… public lands be managed in a manner that will protect the quality of the …scenic values.…" Section 103(c) identifies "scenic values" as one of the resources for which public land should be managed; Section 201(a) states that "The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including…scenic values); and Section 505(a) requires that "Each right-of-way shall contain terms and conditions which will minimize damage to the scenic and esthetic values.…" The Federal Land Policy and Management Act is applicable to the federal public lands, such as BLM lands upon which the Project would be located.

U.S. Bureau of Land Management

Visual Resource Management Classes and Objectives

BLM manages large areas of public land in the western United States and has developed the visual resource management (VRM) system for inventory, management, and impact assessment for lands under federal jurisdiction. BLM has established specific VRM classes and objectives for lands under its jurisdiction. The VRM classes set VRM objectives for lands in each class, as well as the level of visual change in the landscape character that is allowed as a result of proposed management activities (BLM 1986). The objectives and allowed levels of change for each of the four VRM classes are as follows:

- **VRM Class I Objective**: To preserve the existing character of the landscape. Allowed Level of Change: This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- **VRM Class II Objective**: To retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- **VRM Class III Objective**: To partially retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- **VRM Class IV Objective**: To provide for management activities which require major modification of the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape can be high. Management activities may dominate the view and may be the major focus of viewer attention. However, the impact of these activities should be minimized through careful siting, minimal disturbance, and repeating the basic elements of form, line, color, and texture within the existing setting.

California Desert Renewable Energy Conservation Plan

Encompassing 22.5 million acres of desert lands across seven counties in California, the California Desert Renewable Energy Conservation Plan (DRECP) identifies areas appropriate for renewable

energy development. The DRECP is the result of a collaborative effort between the California Energy Commission, California Department of Fish and Wildlife, BLM, and U.S. Fish and Wildlife Service. The DRECP is a land use plan amendment (LUPA) to the 1980 California Desert Conservation Area applicable to BLM-managed public lands (BLM 2016). The Project is entirely within the DRECP area.

The LUPA identified and mapped areas for renewable energy development and areas for long-term natural resource conservation, consistent with the Federal Land Policy and Management Act's multiple-use and sustained yield requirements. In addition to its focus on biological and other natural resources, the DRECP LUPA includes goals, objectives, and conservation and management actions related to visual resource management and scenic resources in the desert region.

3.1.6.2 State

California Department of Transportation State Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from changes that would diminish the aesthetic quality of lands adjacent to highways. The State Scenic Highway System includes highways that either are eligible for designation as scenic highways or have been designated as such. The status of a state scenic highway shifts from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation. While local jurisdictions may propose adding routes with outstanding scenic elements to the list of eligible highways, state legislation is required for them to become officially designated. Portions of SR 14 west of California City (near Mojave to U.S. 395 near Little Lake) and, as noted in Section 3.1.2.5, SR 58 (near Mojave to Interstate 15 near Barstow) are Eligible State Scenic Highways (Caltrans 2018).

3.1.6.3 Local

CPUC General Order No. 131-D explains that local land use regulations would not apply to the Project, as described in Section 3.0.1. However, for informational purposes, the goals and policies of local general plans and other planning documents pertaining to visual resources that would otherwise be relevant to the Project and alternatives are described below.

Kern County General Plan

The following policies from Kern County General Plan Section 1.10.7, *Light and Glare*, pertain to visual or scenic resources (Kern County 2009).

> ***Policy 47*:** Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.
>
> ***Policy 48*:** Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

San Bernardino County General Plan

The following policies from the San Bernardino County General Plan pertain to visual and/or scenic resources (San Bernardino County 2020).

> ***Policy IU-5.3: Underground facilities.*** We encourage new and relocated power and communication facilities to be located underground when feasible, particularly in the Mountain and Desert regions.
>
> ***Policy NR-4.1: Preservation of scenic resources.*** We consider the location and scale of development to preserve regionally significant scenic vistas and natural features, including prominent hillsides, ridgelines, dominant landforms, and reservoirs.
>
> ***Policy NR-4.2: Coordination with agencies.*** We coordinate with adjacent federal, state, local, and tribal agencies to protect scenic resources that extend beyond the County's land use authority and are important to countywide residents, businesses, and tourists.
>
> ***Policy NR-4.3: Off-site signage.*** We prohibit new off-site signage and encourage the removal of existing off-site signage along or within view of County Scenic Routes and State Scenic Highways.

California City General Plan and Municipal Code

Although the California City General Plan discusses issues of light and glare, the general plan does not contain any specific goals or policies governing scenic or visual resources (City of California City 2009).

The California City Municipal Code was reviewed to determine whether the city has ordinances, regulations, etc., related to scenic or visual resources and lighting and glare. The municipal code was found to not provide any guidance related to aesthetics (City of California City 2022).

3.1.7 Applicant Proposed Measures and Best Management Practices

3.1.7.1 Applicant Proposed Measures

SCE has identified the following Applicant proposed measures (APMs) to minimize impacts on aesthetics from the Project. The impact analysis assumes that the APMs would be implemented (i.e., part of the Project) to reduce impacts on aesthetics as discussed below.

- **APM AES-1: Glare and Color Contrast Reduction for Subtransmission Structures and Conductors.** To reduce potential significant impacts associated with glare and color contrast for components of the Project, the finish on all new subtransmission structures will be non-reflective, such as steel that has been galvanized and treated to create a dulled finish or color treated or other functionally equivalent product/process. These types of finishes are designed to reduce light reflection and color contrast and help blend the structures into the landscape setting. All new subtransmission conductors shall be non-specular and non-reflective and the insulators shall be non-reflective and non-refractive to help reduce glare and minimize contrast with the surrounding environment.
- **APM AES-2: Substation Visual Treatments.** To minimize potential significant aesthetic impacts associated with expansion of Cal City Substation, the applicant will prepare a surface

treatment plan for the aboveground non-steel structural elements associated with the substation. Colors will be selected according to their ability to reduce the aesthetic impact of the substation and ancillary infrastructure. All color finishes will be flat and non-reflective. The applicant will consult with the City of California City prior to the submittal of the plan to the California Public Utilities Commission (CPUC) 60 days prior to start of construction for comments and approval.

3.1.7.2 Best Management Practices

SCE has also proposed implementation of best management practices (BMPs) that are based on the California Stormwater Quality Association's 2019 California Stormwater Best Management Practices Handbook (SCE 2023, 2024a). The following BMP, listed below, is considered part of the Project for the purposes of this analysis and would address the visual effects of windblown dust generated by construction activities.

- **BMP WE-1: Wind Erosion Control.** The construction team will apply water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

3.1.8 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to aesthetics if it would:

a) Have a substantial adverse effect on a scenic vista;

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage point); or, if the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality; or

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

3.1.9 Direct and Indirect Effects

3.1.9.1 Approach to the Analysis

Consistent with CPUC's CEQA review of current and past projects, the aesthetics and visual resources analysis for the Project utilizes the visual impact assessment methodology of the Federal Highway Administration.

Photograph and Visual Simulation Methodology

As part of its application package to CPUC, the Applicant provided visual simulations associated with the Project (SCE 2023, 2024b). As noted in Section 3.1.9.2, *Impact Assessment*, the simulations were selected from the 18 viewpoints described in Section 3.1.5, *Visual Setting and Representative Views*, as representative views within the Project area based on their proximity to

residences, BLM lands, and an eligible State Scenic Highway, as well as visibility by recreational viewers and motorists. The Applicant's visual simulations were independently reviewed by CPUC's consultant, Environmental Science Associates, and were found to be technically adequate. The methodology employed for preparing visual simulations for the six key observation points (KOPs) evaluated in the following impact analysis included systematic site photography, computer modeling, and digital rendering techniques. Photographs used to assess existing conditions and to prepare visual simulations were taken using a digital single-lens reflex camera with standard 50-millimeter lens equivalent, which represents an approximately 40-degree horizontal view angle. Digital aerial photographs and Project design information provided the basis for developing three-dimensional computer modeling of the new Project components. For each simulation viewpoint, the viewer location was input from global positioning system data using 5 feet as the assumed eye level. Computer "wireframe" perspective plots were overlain on the simulation photographs to verify scale and viewpoint location. Digital visual simulation images were produced based on computer renderings of the three-dimensional modeling combined with selected digital site photographs.

These simulations provide the reader with a clear image of the location, scale, and visual appearance of the Project. The images are accurate within the constraints of the available site and Project data.

3.1.9.2 Impact Assessment

The Project would not be located in an urbanized area, as defined in CEQA Guidelines Section 15387, and as mapped by the U.S. Census. Therefore, this analysis is based on the Project being in a non-urbanized area (U.S. Census Bureau 2023). The visual impact assessment is based on an evaluation of the changes to the existing visual environment that would result from construction and operation of the Project, and viewer response to that change. The analysis is based on review of information provided by SCE as independently verified on behalf of CPUC, including Project maps, drawings, aerial and ground-level photography of the study area, local planning documents, and computer-generated visual simulations. The methodology utilized in this analysis is adapted from an approach to visual impact assessment developed by the Federal Highway Administration (USDOT 2015).

According to the Federal Highway Administration methodology, an adverse aesthetic impact may occur when an action (i.e., a "project") does any of the following:

(1) Perceptibly changes the existing physical features of the landscape that are characteristic of the region or locale.

(2) Introduces new features to the physical landscape that are perceptibly uncharacteristic of the region or locale, or become visually dominant in the viewshed.

(3) Blocks or totally obscures aesthetic features of the landscape.

The degree of visual impact depends on the noticeability of the adverse change. The noticeability of a visual impact is a function of a project's features, context, and viewing conditions (angle of view, distance, and primary viewing directions). The key factors in determining the degree of visual change are visual contrast, project dominance, and visual screening. The interaction of visual change with the components of visual sensitivity (visual quality, viewer types and

volumes, and viewer exposure; see Section 3.1.2, *Environmental Setting*) is discussed below under the heading *Overall Adverse Visual Impact*. See Section 3.1.1 for definitions of the key terms used in this analysis.

Visual Contrast

Visual contrast is defined in Section 3.1.1.

Visual Dominance

Visual dominance is defined in Section 3.1.1.

Visual Screening

View screening (blockage or impairment) is a measure of the degree to which a project would obstruct or block views to aesthetic features because of its position and/or scale. Blockage of aesthetic landscape features or views can cause adverse visual impacts, particularly in instances where scenic or view orientations are important to the use, value, or function of the land use.

Overall Adverse Visual Impact

Overall adverse visual impact reflects the composite visual changes both to the directly affected landscape and from sensitive viewing locations. The visual impact levels referenced in this analysis indicate the relative degree of overall change to the visual environment that the Project would create, considering visual sensitivity, visual contrast, view blockage, and the Project's visual dominance. In general, the determination of impact significance is based on the combined factors of visual sensitivity and the degree of visual change that the Project would cause.

Table 3.1-1 shows how the interrelationship of these two overall factors determines the level of significance of visual impacts and presents the impact classifications used in this analysis.

TABLE 3.1-1
GUIDELINES FOR DETERMINING ADVERSE VISUAL IMPACT SIGNIFICANCE

	Overall Visual Change				
Overall Visual Sensitivity	**Low**	**Low to Moderate**	**Moderate**	**Moderate to High**	**High**
Low	No Impact	No Impact	Less than Significant	Less than Significant	Less than Significant
Low to Moderate	No Impact	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Moderate	Less than Significant	Less than Significant	Less than Significant	Potentially Significant	Potentially Significant
Moderate to High	Less than Significant	Less than Significant	Potentially Significant	Potentially Significant	Significant
High	Less than Significant	Potentially Significant	Potentially Significant	Significant	Significant

The four types of impact shown in Table 3.1-1 are defined as follows:

- **No Impact.** Effects may or may not be perceptible but are considered minor in the context of existing landscape characteristics and view opportunity.
- **Less than Significant.** Impacts are perceived as negative but do not exceed environmental thresholds.
- **Potentially Significant.** Impacts are perceived as negative and may exceed environmental thresholds depending on Project- and site-specific circumstances (e.g., orientation of the viewer).
- **Significant.** Impacts with feasible mitigation may be reduced to less-than-significant levels or avoided altogether. Without mitigation, significant impacts would exceed environmental thresholds.

Visual Simulations and Visual Change

A set of visual simulations was prepared to document the Project-related visual change that would occur at six KOP locations, shown in **Figure 3.1-12**, to provide the basis for evaluating potential visual effects associated with the Project from these key public views. The simulations, presented in **Figures 3.1-13** through **3.1-18**, each consist of two full-page images designated "a" and "b," with the existing view shown in the "a" figure, and the "after" visual simulation in the "b" figure.

This section describes the Project-related change and evaluates potential visual effects on key public views, primarily as represented by the set of six visual simulations. **Table 3.1-2** presents an overview of the KOPs, including proposed viewpoint location with corresponding visual sensitivity factor(s), approximate viewing distance, and summary of visible change that would occur at each KOP location.

Subsequent to the preparation of these six visual simulations used in this CEQA analysis, BLM selected seven KOPs as part of its visual impact assessment for the Project, which more appropriately represent its purposes for Project review and approval. SCE prepared visual simulations for these seven BLM-suggested KOPs and shared them with CPUC to potentially further inform this analysis of aesthetics and visual resources under CEQA. They have been included in the analysis below. The seven BLM-suggested simulations, existing KOP views, and a memorandum presenting the correlation between the CPUC's and BLM's KOPs are included as **Appendix E**, *Supplemental Visual Simulations*.

Landscape Unit 1

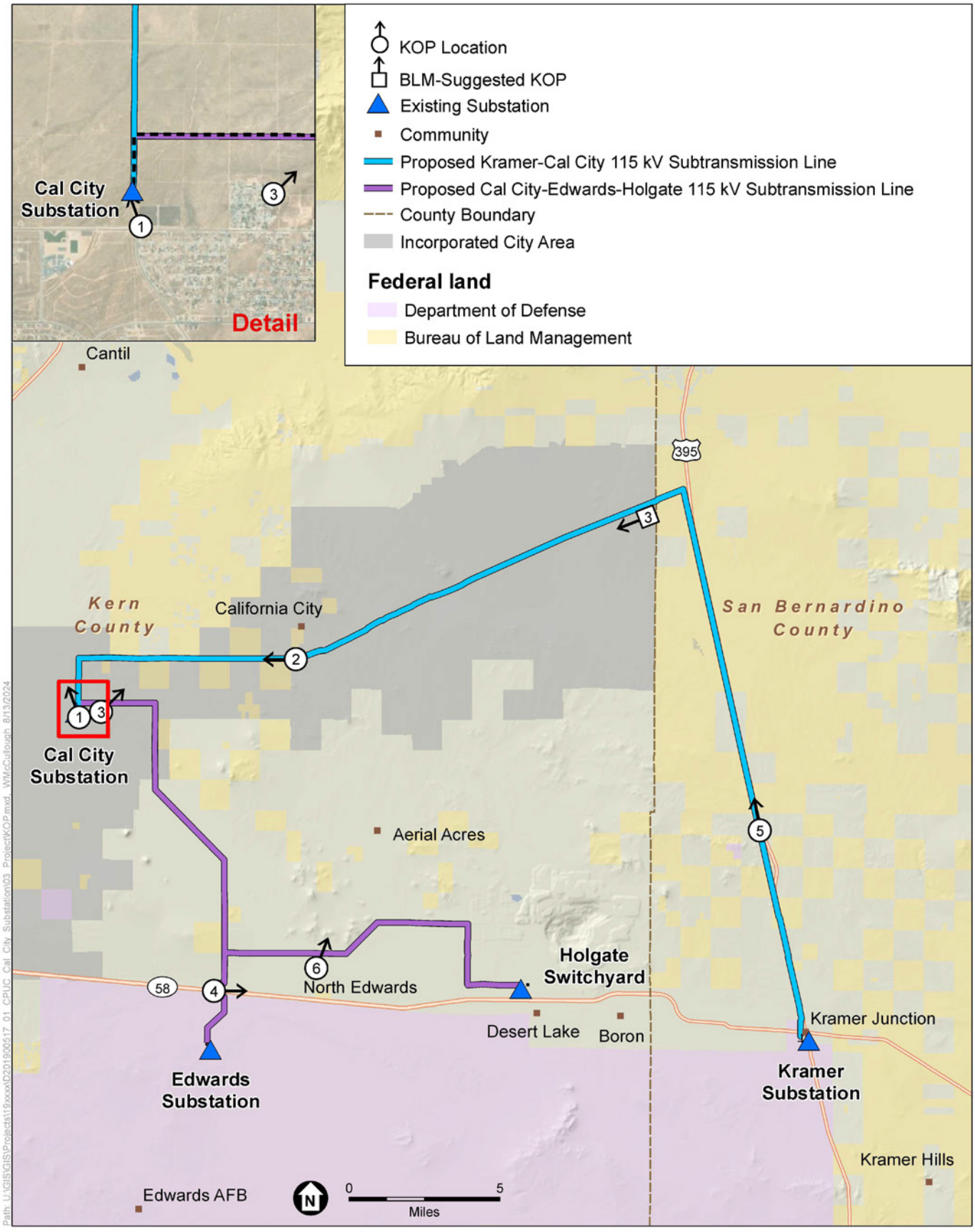
Key Observation Point 1

The location of KOP 1 is shown in Figure 3.1-12 and the existing view from KOP 1 is shown in **Figure 3.1-13a**. Primary viewers of the Project at KOP 1 are those in the nearby residential neighborhood in the vicinity of Mendiburu Road. The nearest representative viewpoint to the Cal City Substation is located approximately 780 feet southeast of the existing substation, as shown in Figure 3.13-2, *Noise-Sensitive Receptors*, in Section 3.13. Viewer awareness and exposure would be high because of the viewpoint's proximity to the Project. Therefore, the visual sensitivity of this viewer group is considered high.

TABLE 3.1-2
SUMMARY OF VISUAL CHANGE AT KEY OBSERVATION POINTS

Proposed Photograph Number and Location	Visual Sensitivity Factor	Distance from KOP to Closest Project Component	Summary of Visual Change
Landscape Unit 1			
KOP 1 Viewpoint 1 Cal City Substation	Proximity to public views from residential neighborhoods	0.1 to 0.25 mile	The proposed expanded Cal City Substation appears as a larger and more visually prominent facility in the foreground of the view.
KOP 2 Viewpoint 6 Proposed Kramer–Cal City 115 kV Subtransmission Line	Recreational viewers—primarily OHV	Immediately adjacent, overhead	The proposed Kramer–Cal City 115 kV Subtransmission Line appears as a prominent new linear feature extending through the foreground, middleground, and background of the landscape.
KOP 3 Viewpoint 3 Proposed Cal City– Edwards-Holgate 115 kV Subtransmission Line	Proximity to public views from residential neighborhoods	0.3 mile	The proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line appears as a prominent new linear feature crossing the foreground of the landscape. The proposed Kramer–Cal City 115 kV Subtransmission Line is faintly visible as a new linear feature crossing the middleground of the landscape.
KOP 4 Viewpoint 11 Proposed Cal City– Edwards-Holgate 115 kV Subtransmission Line	Crossing of eligible state scenic highway	0.25 mile	The proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line appears as a prominent new linear feature crossing the foreground of the landscape.
KOP 6 Viewpoint 19 Proposed Cal City– Edwards-Holgate 115 kV Subtransmission Line	Proximity to public views from residential neighborhoods, local motorists	0.1 mile	The proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line appears as a larger and more visually prominent linear feature crossing the foreground of the view than existing overhead SCE distribution facilities on wood poles.
Landscape Unit 2			
KOP 5 Viewpoint 17 Proposed Kramer–Cal City 115 kV Subtransmission Line	Motorists on U.S. 395, proximity to BLM land	300 feet	The proposed Kramer–Cal City 115 kV Subtransmission Line appears as a new linear feature in the landscape, adjacent to and parallel to other linear features.

NOTES: BLM = U.S. Bureau of Land Management; KOP = key observation point; kV = kilovolt; SCE = Southern California Edison; U.S. 395 = U.S. Highway 395



SOURCES: ESA, 2023; SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.1-12
KOP Locations



Existing view, looking northwest toward Cal City Substation.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-13a
KOP 1 Existing View

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As shown in Figure 3.1-13a, the street-level view of an existing solar array, approximately 175 feet north of KOP 1, is screened behind a tan-brown masonry block wall in the foreground, as seen on the right of the image. The existing Cal City Substation is visible approximately 800 feet away in the center of the view. The substation presents as a gray, metallic cluster of industrial components, partially screened by small sandy mounds and scattered brown and olive-green shrubs. Multiple existing distribution lines mounted on wood poles are present in the foreground view, providing the most substantial vertical features in the image. These wood distribution poles continue north through the middleground, before fading into the horizon. Because of the slightly sloped nature of this location and distance, ground-based middleground elements are largely obscured. The Black Hills are visible in the distant background, 10 or more miles away, but are somewhat obscured by atmospheric haze. The Cal City Substation, the adjacent screened solar facility, and the overhead utility infrastructure are the primary foci of this view. The visual quality of the built elements is low, considering these encroaching built elements. The industrial visual quality of the Cal City Substation, the adjacent walled-in solar facility, and the associated distribution poles and overhead utility infrastructure are in strong contrast with the natural desert surroundings. The existing view from KOP 1 has a low to moderate overall visual quality.

As described in Chapter 2, *Project Description*, and shown in **Figure 3.1-13b**, the Project would expand the Cal City Substation to the west and north with a variety of improvements. The expanded Cal City Substation appears substantially larger in the view, with additional equipment, such as new 12 kV, 33 kV, and 115 kV switchracks, new transformers, new capacitors, and a new mechanical electrical equipment room visible behind chain-link fencing. The new Kramer–Cal City and Cal City–Edwards-Holgate 115 kV subtransmission lines would connect to the substation on double-circuit tubular steel poles (TSPs) that extend northward into the horizon in this view. The larger substation would further contribute to screening of the distant mountains, and additional subtransmission TSPs contribute to visual contrast of the view at KOP 1. Given the greater visibility of the substation and TSPs compared to the existing condition, industrial visual quality would be stronger. Additional TSPs are set against the backdrop of the sky, increasing visibility and reducing visual unity. Implementation of the Project would reduce overall visual quality at KOP 1 and add to the current strong contrast. Therefore, visual quality attributable to the Project would be low.

Key Observation Point 2

The location of KOP 2 is shown in Figure 3.1-12 and the existing view from KOP 2 is shown in **Figure 3.1-14a**. Primary viewers of the Project at KOP 2 are OHV recreationists, as the new Kramer–Cal City 115 kV Subtransmission Line in this location would be located directly on a designated California City OHV trail. Rudnick Boulevard is also a public roadway that provides vehicular access between California City and U.S. 395. This viewpoint is also near Borax Bill Park and Station, which offers stationary views of its surroundings. KOP 2 also represents views experienced by motorists on Rudnick Avenue and motorists and OHV recreationists and campers at Borax Bill Park and Station. Recreationists' and motorists' views range from relatively brief when in motion to lengthier when at rest. The sensitivity of these viewer groups is considered moderate to high, given the potential for views with extended durations.



Simulated view looking northwest toward the proposed, expanded Cal City Substation.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-13b
KOP 1 Simulated View

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Existing view looking west along Rudnick Boulevard.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-14a
KOP 2 Existing View

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KOP 2 is approximately 0.45 mile west of Borax Bill Park, an OHV hub along Rudnick Boulevard, looking west. Rudnick Boulevard is a heavily used dirt OHV road and designated OHV trail that runs in an east-west orientation in line with KOP 2. Undulating sandy berms line both sides of the roadway. Small patches of gray-green ground cover foliage can be seen on the berms. Scattered silvery-green, rusty, and olive-brown shrubs fill the foreground view, and no trees or other distinctive vegetation are present. Rudnick Boulevard and swaths of rusty and olive-green shrubs continue into the middleground, gently sloping downward. The flat and gently sloping portions of the desert floor are a typical visual feature in the vicinity. In the background, the desert floor continues to slope downward, before rising in the background view to meet the distant Tehachapi Mountains approximately 15 miles to the west. The mountains are silhouetted against the sky and clouds. Rudnick Boulevard is visible as a contrasting linear feature until it disappears into the foothills of the Tehachapi Mountains. Rudnick Boulevard is the only constructed feature visible in KOP 2 and contrasts with the surrounding landscape as a brighter light-colored feature bisecting the foreground view. The dirt road alone is not distinct or memorable; however, its extensive linear visibility to its terminus at the base of the Tehachapi Mountains provides dramatic visual focus toward the mountains and horizon. The view is intact and unified. The overall visual quality at KOP 2 is high.

As described in Chapter 2, *Project Description*, and shown in **Figure 3.1-14b**, the Project would include the installation of galvanized lightweight steel (LWS) poles, approximately 85 feet high, regularly spaced approximately 350 feet apart, to support the new subtransmission line for the portion of the Project that is visible in KOP 2. The poles and subtransmission line present as a series of repeating, solid vertical features paralleling Rudnick Boulevard, offset to the south by approximately 15–20 feet, and would dominate the foreground view. The row of tall, solid, galvanized subtransmission poles would be very distinct and in strong contrast with the surrounding natural landscape. They would be the only unnatural material within the view and would present vividly against the landscape in foreground and middleground views until they disappear further into the middleground. Given the visibility of the steel transmission poles associated with the Project, the distinctive natural scenic quality of the view would be diminished. The new subtransmission line would not be consistent with the form, color, or texture of the surrounding landscape, and the visual quality of the view would be reduced. Implementation of the Project at KOP 2 would reduce the overall (high) visual quality to low to moderate.

Key Observation Point 3

The location of KOP 3 is shown in Figure 3.1-12. Primary viewers of the Project at KOP 3 would be those in the nearby residential neighborhood. The nearest public viewpoint in this neighborhood at KOP 3 is located approximately 0.3 mile south of the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment, which would be the nearest new subtransmission line to KOP 3. Viewer sensitivity would be high because of the neighborhood's proximity to the Project. Therefore, the sensitivity of this viewer group is considered high. The view from KOP 3 is representative for residential neighborhoods along an approximately 1.7-mile stretch south of the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment where there is currently no aboveground electrical infrastructure in the existing viewshed. KOP 3 is also representative of views by OHV recreationists, whose viewer sensitivity is considered moderate to high because of the potential for sustained views with extended durations.



Simulated view of the proposed Kramer-Cal City 115 kV Subtransmission Line along Rudnick Boulevard, looking west.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-14b
KOP 2 Simulated View

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As shown in **Figure 3.1-15a**, the foreground view of KOP 3 is relatively flat with pale, tan sand covering the landscape in between scattered shrubs. No constructed features are distinctly visible; however, there is a network of dirt-packed roads, which are faintly visible through less dense patches of vegetation. Olive-brown and rust-colored woody shrubs are scattered across the foreground view. There are no trees and the vegetation is ubiquitous. The middleground view is relatively flat before the desert floor gently rises slightly toward the hills in the distance. In the background view, atmospheric haze becomes more evident, obscuring the details of the hills in the background view. The silhouette of the Rand Mountains, which are approximately 10 miles in the distance, forms an undulating horizon line. The natural desert view is free from constructed elements and is largely intact. The view presents a generally undisturbed, natural desert landscape. The existing view at KOP 3 has a moderate to high visual quality.

As shown in **Figure 3.1-15b** looking northeast from KOP 3, the new Cal City–Edwards-Holgate 115 kV Subtransmission Line would be located approximately 0.3 mile away in the foreground and the new Kramer–Cal City 115 kV Subtransmission Line would be approximately 2 miles away in the middleground view. The Project would include galvanized LWS poles, approximately 85 feet high in this area, extending east-west across the landscape, spaced regularly, approximately 350 feet apart, to support the new subtransmission lines. Appearing above the low surrounding scattered vegetation, the new subtransmission infrastructure presents as distinct industrial vertical and horizontal linear features, which dominate the foreground view. The new Cal City–Edwards-Holgate 115 kV Subtransmission Line would be a dominant visual feature, prominent against the mountains on the horizon and the sky in the background view. The new Kramer–Cal City 115 kV Subtransmission Line approximately 1.75 miles in the distance would be less distinct, but still visible in the foreground to middleground view. Infrastructure for both lines would be the only constructed material within the view, and the distinct vertical and horizontal linear features contrast strongly against the surrounding, natural landscape. The subtransmission infrastructure would be visually discordant with the otherwise natural visual quality of the view with distinct, hard lines. Given the visibility of the steel transmission poles associated with the Project, the natural visual quality of the view would be diminished. The new subtransmission line would not be consistent with the form, color, or texture of the surrounding landscape, and the overall visual quality of the view would be reduced. Implementation of the Project at KOP 3 would reduce overall moderate to high visual quality to low.

Key Observation Point 4

The location of KOP 4 is shown in Figure 3.1-12. The primary viewers of the Project at KOP 4 would be motorists traveling along SR 58, an eligible state scenic highway. This location is representative of motorists' views of the Project along SR 58 in California City. The sensitivity of this viewer group is considered low given the short duration of views experienced at highway speeds.

As shown in **Figure 3.1-16a**, SR 58 is paved with asphalt and painted with typical highway markings. A median densely vegetated with scrub divides the two eastbound lanes from the two westbound lanes. The exit ramp for EAFB is marked by a large green sign and slopes upward toward the Muroc Road overpass bridge, which spans SR 58 in a north-to-south orientation. The vertical highway light posts are visible above the visual horizon line created by the overpass.



Existing view looking northeast from residential area.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-15a
KOP 3 Existing View

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Simulated view of the proposed Cal City-Edwards-Holgate and Kramer-Cal City 115 kV subtransmission lines looking northeast from residential area.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-15b
KOP 3 Simulated View

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Existing view looking east along SR 58.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-16a
KOP 4 Existing View

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A wood distribution pole, approximately 65 feet tall, is seen in the dense shrubs on the south side of SR 58. Multiple utility lines on this pole are strung across the highway and are faintly visible horizontal features against the sky. Highway traffic is visible from KOP 4. The majority of the foreground and middleground view is blocked by the Muroc Road overpass bridge and earthen abutments across SR 58. The earthen abutments on either side of the overpass bridge add an elevated topography in the view. The bridge is approximately 0.45 mile east of KOP 4. Underneath the bridge, the middleground views are obscured by a reduced viewing portal, vehicular traffic, and atmospheric haze. On either side of the bridge, other utility poles and signs are faintly visible. Swaths of olive-brown, rust, and silvery-green shrubs fill the foreground view on the south side of SR 58. Scattered brown shrubs can be seen on the earthen abutments on either side of the Muroc Road overpass bridge. There are no large trees and the vegetation is typical of this desert environment.

In the background view, Saddleback Mountain can be seen approximately 15 miles northeast of KOP 4, and Leuhman Ridge, approximately 12 miles southeast of KOP 4, is visible through the atmospheric haze. SR 58 and ancillary signage, light posts, fence posts, and road markings and the Muroc Road overpass bridge contrast with the surrounding distinct natural visual quality of the landscape. The wood distribution pole and lines crossing SR 58 add to the industrial visual quality created by the other constructed features for dominance in the view. The overall visual quality of the view at KOP 4 is low to moderate.

As shown in **Figure 3.1-16b**, looking east from KOP 4, the new Cal City–Edwards-Holgate 115 kV Subtransmission Line would cross SR 58 approximately 900 feet in the distance. The distribution line on the existing wood utility poles would be replaced and colocated on the new TSPs, which would be approximately 100 feet tall. The poles visible in KOP 4 would be located roughly 125 feet from either side of the highway and approximately 430 feet apart. The 115 kV Cal City–Edwards-Holgate subtransmission line would be strung near the top of the poles, while the existing distribution line would be strung on the lower portion of the new poles.

The new TSPs and subtransmission and distribution lines would become the dominant visual feature in the foreground view from KOP 4. However, the visual character of the view would not change. The new subtransmission line would be consistent with the existing view as it would replace the wood poles and utility lines (Figure 3.1-16a). The brushed finish on the monopoles would visually blend into the sky background but would still be visually apparent in the view, and it would somewhat echo the form of the Muroc Road crossing of SR 58.

Note that, in the simulated view in Figure 3.1-16b, the location of the new Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment appears to be farther east from KOP 4 (i.e., closer to the SR 58 overpass) than the existing distribution line. The TSPs would be taller than the existing wood poles and would carry more lines. However, the overall view would essentially remain unchanged, with little visual contrast created by the Project. Implementation of the Project at KOP 4 would not change the overall visual quality, which would remain low to moderate.



Simulated view of the proposed Cal City-Edwards-Holgate 115 kV Subtransmission Line crossing SR-58, looking east.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-16b
KOP 4 Simulated View

ESA

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Key Observation Point 6

The location of KOP 6 is shown in Figure 3.1-12. Primary viewers of the Project at KOP 6 would include local motorists and people in a nearby residential neighborhood. Motorists' views of the proposed new Cal City–Edwards-Holgate 115 kV Subtransmission Line would be of limited duration while they approach and cross under the new overhead line on Claymine Road. Therefore, the sensitivity of the motorist viewer group is considered low. The nearest residence to the proposed new Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment is approximately 0.06 mile (325 feet) south of the alignment and would be representative of views from public areas of the residential neighborhood. Viewer awareness and exposure would be high because the public views from the neighborhood are close to the Project. Therefore, the sensitivity of the residential viewer group is considered high.

As shown in **Figure 3.1-17a**, the road surface of Claymine Road is the primary focus of this view. The gray and yellow colors fade out of view as the roadway extends out of the foreground view. The street-level public view from the residential neighborhood, located near KOP 6, is screened in places by masonry block walls in the foreground, as seen on the right side of the image. However, many of the views from the public residential streets are not screened by these walls. Sandy mounds and exposed, tan earth are scattered with gray-green and rust-brown–colored shrubs and ground cover vegetation, giving the visual horizon line an undulating effect. Multiple existing distribution lines mounted on wood poles are seen in the foreground view, providing vertical visual form to the view. Because of the topography, the middleground elements north of KOP 6 are largely screened. On the west side of Claymine Road, and at the center of the view, red-toned hills provide variation in the otherwise flat topography. In the seldom-seen view beyond the background view, hills and the Rand Mountains (approximately 18 miles distant) are faintly visible. The visual quality of the constructed elements in this view (utility infrastructure and residences) is low to moderate, and the view has an industrial visual quality because of the encroaching built elements. The existing view from KOP 6 has a low to moderate overall visual quality.

As described in Chapter 2, *Project Description*, Section 2.5.1, *Subtransmission Lines*, and as shown in **Figure 3.1-17b**, the Project would include the installation of galvanized LWS poles, approximately 80 feet high, that would be regularly spaced approximately 350 feet apart to support the new subtransmission line for the portion of the Project that is visible in KOP 6. The proposed LWS poles and subtransmission line present as a series of repeating vertical and horizontal features across the foreground view with a distinct set of four horizontal lines strung between them and would compete for visual dominance in the foreground view. The row of tall, solid, galvanized subtransmission LWS poles would appear as industrial features in the foreground view and would be consistent in form with the surrounding existing wood infrastructure. Given the visibility of the galvanized LWS poles associated with the Project, the industrial visual quality of the view would be reinforced. The new subtransmission line would not be consistent with the color or texture of the surrounding natural landscape, and overall visual character of the view would reflect that. However, considering the existing utility infrastructure in the view, with implementation of the Project near KOP 6, the overall visual quality would remain low to moderate.



Existing view looking northeast along Claymine Road.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-17a
KOP 6 Existing View

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Simulated view of the proposed Cal City-Edwards-Holgate 115 kV Subtransmission Line crossing Claymine Road, looking northeast.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-17b
KOP 6 Simulated View

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BLM-Suggested Key Observation Point 3

The location of BLM-suggested KOP 3 is shown in Figure 3.1-12 and the existing view from BLM-suggested KOP 3 is shown in Appendix E *BLM KOP 3, Existing View*. Primary viewers of the Project at BLM-suggested KOP 3 are motorists and some OHV recreationists, as the new Kramer–Cal City 115 kV Subtransmission Line in this location would be located directly adjacent to the north side of Twenty Mule Team Parkway. Twenty Mule Team Parkway is a public roadway that provides vehicular access between California City and U.S. 395. This viewpoint is just west of the existing utility corridor that parallels U.S. 395. The visual quality is considered overall moderate to high. Given the longer duration of views for recreationists and motorists at BLM-suggested KOP 3 along Twenty Mule Team Parkway, viewer sensitivity is moderate to high.

The light tan unpaved roadway covered with imprinted tire tracks dominates the foreground view and guides the viewer's attention to the horizon line in midview. Drab green and olive-brown shrubs fill the landscape on either side of the roadway up to the horizon line. The remainder of the view is dominated by the light blue sky.

As described in Chapter 2, *Project Description*, and shown in Appendix E *BLM KOP 3, Simulated View*, the Project would include the installation of galvanized LWS poles, approximately 85 feet high, regularly spaced approximately 350 feet apart, to support the new subtransmission line for the portion of the Project that is visible in BLM-suggested KOP 3. The poles and subtransmission line present as a series of repeating, solid vertical features paralleling Twenty Mule Team Parkway, offset to the north by approximately 10 feet at this viewpoint, and would dominate the foreground view. The row of tall, solid, galvanized subtransmission line poles would be very distinct and in strong contrast with the surrounding natural landscape. The poles and conductor would be the only unnatural material within the view and would present vividly against the landscape in foreground and middleground views until they disappear further into the middleground. Given the visibility of the steel subtransmission poles and conductor associated with the Project, the distinctive natural scenic quality of the view would be diminished. The new subtransmission line would not be consistent with the form, color, or texture of the surrounding landscape, and the visual quality of the view would be reduced. Implementation of the Project at BLM-suggested KOP 3 would reduce the overall (high) visual quality to low to moderate.

Landscape Unit 2

Key Observation Point 5

The location of KOP 5 is shown in Figure 3.1-12. This location is representative of views of the Project for motorists on U.S. 395 and for recreationists on BLM-managed lands along the U.S. 395 corridor. The sensitivity of this viewer group is considered moderate to high given the extended duration of views experienced from BLM lands.

As shown in **Figure 3.1-18a**, the gray asphalt surface of U.S. 395 visually dominates the foreground view and creates a solid line through the surrounding dull tan landscape, before fading into the visual horizon at the hills in the background view. Because of the topography in this view, the middleground view is not apparent. Existing utility lines supported by a linear series of large, galvanized lattice steel towers and wood H-frame structures are prominent in the foreground and fade into the atmospheric haze of the distant hills. The lattice steel towers create an orderly line



Existing view looking northwest along U.S. 395.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-18a
KOP 5 Existing View

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along the west side of U.S. 395. The landscape is characterized by patches and swaths of small, pale tan and silvery-green shrubs and tan-colored sand. The distinct silhouette of Red Mountain is visible to the northeast in the background view, approximately 17 miles away. The overall visual quality of the view at KOP 5 is low to moderate.

As shown in **Figure 3.1-18b**, the proposed Kramer–Cal City 115 kV Subtransmission Line would be located on the west side of the existing utility corridor, parallel to the existing electric transmission structures and U.S. 395. The new subtransmission line would present a series of repeating, solid vertical line features visible along the existing transmission corridor adjacent to the highway. Given the juxtaposition of the proposed infrastructure within the existing utility right-of-way with similar structure types, the Project would not create a strong visual contrast with the existing utility right-of-way and its associated infrastructure. The Project would not contrast with the form, line, or color of the existing landform or vegetation. The additional electric infrastructure introduced by the Project would visually be consistent with the existing infrastructure with the repeating pattern of the new poles and utility lines. The overall visual quality of the view at KOP 5 would remain low to moderate.

3.1.9.3 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would have a substantial adverse effect on a scenic vista.

The Project would not have a substantial adverse effect on a scenic vista (*No Impact*).

As noted in Section 3.1.1, for the purposes of this analysis, scenic vistas are distant public views from designated viewing locations that are recognized and valued for their scenic quality. None of the agencies identified in Section 3.1.6 as having jurisdiction over scenic resources in the study area have identified or designated any scenic vistas in the study area. Although there are undeveloped desert open spaces and unimpeded views of the surrounding mountains that may function as scenic vistas, these views do not meet the definition of a scenic vista for purposes of this evaluation. Therefore, there would be no impact on scenic vistas attributable to the Project.

Criterion b) Whether the Project would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

Impact 3.1-1: The Project would not substantially damage scenic resources within a state scenic highway. (*Less than Significant*)

No state-designated scenic highways are in the study area. No trees, rock outcroppings, historic buildings, or other scenic resources within a state scenic highway are found in the Project area. One highway in the study area, SR 58, has been identified as an eligible state scenic highway, but has not been officially designated by Caltrans or Kern or San Bernardino counties. However, San Bernardino County has identified SR 58 as a locally designated scenic route. This view is represented by KOP 4 and visual impacts at this KOP are addressed under Impact 3.1-2, below. No trees, rock outcroppings, historic buildings, or other scenic resources are found along this



Simulated view of the proposed Kramer-Cal City 115 kV Subtransmission Line paralleling U.S. 395, looking northwest.

SOURCE: SCE, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.1-18b
KOP 5 Simulated View

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section of SR 58. As shown in Section 3.4, *Biological Resources* (see Figures 3.4-2e and 3.4-2f), there are several western Joshua trees in the vicinity of SR 58 east of KOP 4; however, those trees would not be damaged by the Project. For the reasons stated in Impact 3.1-2, there would be a **less-than-significant** impact on state scenic highways attributable to the Project in the study area.

Mitigation: None required.

Criterion c) Whether the Project would substantially degrade the existing visual character or quality of public views of the site and its surroundings.

This consideration of visual character and quality of public views includes potential impacts related to the construction and operational phases of the Project. Each is discussed as a separate impact as follows.

Impact 3.1-2a: Project construction would degrade the existing visual character or quality of public views of the site and its surroundings in non-urbanized areas. (*Less than Significant*)

Project construction would require establishing temporary staging areas for vehicle and equipment parking, and for material storage. Staging area preparation would include installing temporary perimeter fencing that would be removed once construction is complete. Construction-related visual impacts resulting from the temporary presence of equipment, materials, and work crews along the Project alignments, staging and work areas, and stringing sites would not substantially degrade the existing visual character of the landscape. To varying degrees, construction activity would be noticeable to a small number of local residents in surrounding rural communities, and to some motorists and recreational visitors.

As ground-disturbing activities occur, views may be temporarily clouded by dust, particularly under windy conditions. Under such conditions, BMP WE-1, *Wind Erosion Control*, would be implemented to prevent or alleviate airborne dust from construction activities.

Construction activities would be visible for a period of approximately 24 months, but individual activities would be considerably shorter in duration at any one location. Most Project construction activities would occur in undeveloped areas that lack sensitive viewers and areas that are not visible from publicly accessible vantage points. As evidenced by KOPs 1, 3, and 6, there are neighborhoods that provide publicly accessible views of the Project limited to those locations. Residential viewers in these locations would have a higher level of viewer sensitivity. Visual effects of these activities would be temporary because SCE would restore any land that may be disturbed at the staging areas to as close to preconstruction conditions as feasible.

Because construction impacts would be temporary, of short duration in any one area, and generally located away from sensitive viewers, the impact would be **less than significant**.

Mitigation: None required.

Impact 3.1-2b: Project operation in the vicinity of KOPs 1, 4, 5, and 6, and Viewpoint 7 would degrade the existing visual character or quality of public views of the sites and their surroundings in non-urbanized areas. (*Less than Significant*)

Key Observation Point 1

As described in Section 3.1.9.1, *Approach to the Analysis*, the existing condition for KOP 1 as shown in Figure 3.1-13a has low scenic quality because of the built elements within the visual environment. The industrial visual quality of the Cal City Substation, the adjacent screened solar facility, and the associated distribution poles and overhead utility infrastructure create a strong visual contrast with the natural desert surroundings. The existing view from KOP 1 has a low to moderate overall visual quality. Residential views tend to be sustained and frequent; therefore, viewer sensitivity at this location is high.

As shown in Figure 3.1-13b, the Project would expand and increase the visibility of the substation and distribution poles compared to the existing condition, resulting in a stronger industrial visual quality. Additional distribution poles are set against the backdrop of the sky, reinforcing the industrial quality of the area. However, the addition of these Project elements to the view would not create a strong visual contrast or change compared to the existing view. The simulated view from KOP 1 shows an overall reduction in visual quality, which would remain low to moderate. Because viewer sensitivity at KOP 1 is high, SCE would implement APMs AES-1 and AES-2 to reduce impacts to a less-than-significant level. APM AES-1 would reduce glare and color contrast associated with subtransmission facilities, and APM AES-2 would require a substation surface treatment plan for the aboveground non-steel structural elements to reduce the visual impact of the substation, and ancillary infrastructure.

With implementation of APMs AES-1 and AES-2, the degree of overall visual change would be low. When coupled with the high sensitivity, impacts of the Project at KOP 1 would be **less than significant**, as shown in Table 3.1-1.

Key Observation Point 4

As described in Section 3.1.9.1, the existing condition for KOP 4 as shown in Figure 3.1-16a has an industrial visual quality, as numerous contrasting constructed features compete for dominance within the view, giving it a low to moderate visual quality. Because of the short duration of motorists' views experienced at highway speeds, viewer sensitivity is low.

As shown in Figure 3.1-16b, the Project would be visually dominant, resulting in a continued industrial visual quality in the view, although the form of the new subtransmission line would be consistent with the existing wood poles to be removed and utility lines that would be attached to the new TSPs (Figure 3.1-16a). As a result, the visual quality of the view from KOP 4 would remain low to moderate.

SCE would implement APM AES-1, which would require the use of paint and metal finishes to reduce glare and contrast. The brushed finish on the monopoles would visually blend into the sky background, but the poles would still be visually apparent in the view, somewhat echoing the form of the Muroc Road crossing of SR 58. The overall unity of the view would remain essentially unchanged with low to moderate change in visual contrast.

Implementation of the Project at KOP 4 would not change the overall visual quality, which would remain low to moderate. Because viewer sensitivity is low at KOP 4, the impact of the Project at KOP 4 would be **less than significant**, as shown in Table 3.1-1.

Key Observation Point 5

As described in Section 3.1.9.1, the existing condition for KOP 5 as shown in Figure 3.1-18a is visually dominated by constructed elements, such as the asphalt highway and large utility structures. Given the extended duration of motorists' views experienced from BLM lands, as the Project parallels the highway, viewer sensitivity is moderate to high.

As shown in Figure 3.1-18b, the Project would add a new linear feature in the landscape, adjacent and parallel to existing linear utility features. The Project is visible in KOP 5 but does not draw greater viewer attention and does not detract from the surrounding landscape, given its location relative to the existing utility infrastructure.

In comparing the preconstruction and post-construction conditions of the Project at KOP 5, the new subtransmission infrastructure would have a weak level of contrast with the landform, vegetation, and structures of the surrounding landscape. The Project would be visible but not dominant, and the line and form of the existing linear features would be echoed in the new infrastructure. Consequently, as shown from KOP 5, the Project would create a low level of overall visual change and would have a **less-than-significant** impact, as shown in Table 3.1-1.

Key Observation Point 6

As described in Section 3.1.9.1, the existing condition for KOP 6 as shown in Figure 3.1-17a is visually dominated by constructed elements, such as existing utilities, paved roadway, and a residential neighborhood. Residential views from public viewpoints tend to be frequent and sustained, making viewer sensitivity high, while the visual sensitivity for motorists would be low.

As shown in Figure 3.1-17b, the Project would contrast with the natural surroundings, as it intersects the public view from KOP 6. However, the contrast would be weak, given the existing utility infrastructure present in the view. As a result, the visual quality of the view from KOP 6 would remain low to moderate. The subtransmission LWS poles and conductor, while visible, do not further block expansive views of the landscape, including landform and vegetation. Views would remain mostly unchanged and the visual contrast would be weak, though slightly fractured by the existing distribution poles and new subtransmission LWS poles in the view.

SCE would implement APM AES-1, which would reduce glare and contrast of the subtransmission infrastructure. APM AES-2 would not reduce the impact at KOP 6 because that APM AES-2 addresses impacts from substations, not the subtransmission infrastructure visible at KOP 6. The visual quality at KOP 6 would remain low to moderate. The visual impact of the Project at KOP 6 would be **less than significant**, as shown in Table 3.1-1.

Viewpoint 7

Viewpoint 7 is representative of the existing conditions along the approximately 5-mile segment of the Kramer–Cal City 115 kV Subtransmission line along Twenty Mule Team Parkway alignment from Borax Bill Park to 0.25-mile northeast Rutgers Road where the existing Castle

Butte 33 kV Distribution Line parallels the roadway. As described in Section 3.1.5.1, the existing condition for Viewpoint 7 as shown in Figure 3.1-5 is visually dominated in the foreground by the paved roadway Twenty Mule Team Parkway and existing electrical distribution lines mounted on wood poles along the northern side of the roadway in the left-center of the view. The exposed land surface is sandy tan in color. The gray roadway is the principal visual feature in the foreground view. In the middle-ground view, scattered silvery-green and olive-brown shrubs fill the landscape to the horizon line, which horizontally bifurcates the view. The open sky dominates the remainder of the view at Viewpoint 7.

The Project would result in transferring the existing Castle Butte 33 kV Distribution Line on wood poles to the proposed new Kramer–Cal City 115 kV Subtransmission Line structures; the existing distribution wood poles would be removed. As shown in Figure 3.1-5, the Project would visually contrast with the natural surroundings in the same way the existing distribution line does. Although there is no visual simulation of the Project at Viewpoint 7, this contrast would be weak because the existing distribution infrastructure is present in the view and would essentially be replaced in kind by the Project. The subtransmission LWS poles and conductor would not create a substantial change in visual character in this view, as the views would remain mostly unchanged other than being replaced by the new infrastructure,

SCE would implement APM AES-1, which would reduce glare and contrast of the subtransmission infrastructure. The visual quality at Viewpoint 7 would remain low to moderate. The visual impact of the Project at Viewpoint 7 would be **less than significant**, as shown in Table 3.1-1.

Mitigation: None required.

Impact 3.1-2c: Project operation in the vicinity of KOPs 2 and 3 and BLM-suggested KOP 3 would substantially degrade the existing visual character or quality of public views of the sites and their surroundings in non-urbanized areas. (*Significant and Unavoidable*)

Key Observation Point 2

As described in Section 3.1.9.1, the existing condition for KOP 2 as shown in Figure 3.1-14a is generally distinctive natural visual quality, without constructed elements or encroaching elements with the exception of Rudnick Boulevard extending through the landscape. Although Rudnick Boulevard is a constructed feature in this view, its linear form adds to the view by drawing viewers' attention toward the Tehachapi Mountains in the distance, giving this view a high visual quality. Given the longer duration of recreationists' and motorists' views at KOP 2, viewer sensitivity is moderate to high.

As shown in Figure 3.1-14b, the Project would introduce an industrial element of visual quality within the expansive natural surroundings, as it visually punctuates the view from KOP 2, reducing the intactness of the view and creating a strong visual contrast and high level of visual change. As a result, the visual quality of the view from KOP 2 would decrease from high to a visual quality of low to moderate.

Because viewer sensitivity at KOP 2 is moderate to high, SCE would implement APM AES-1 to reduce visual impacts. APM AES-1 would reduce glare and color contrast associated with

subtransmission facilities, like those that would be visible in KOP 2. However, the subtransmission poles and conductor would remain plainly visible and would maintain a strong visual contrast and high visual change to the expansive views of the landscape, including landform and vegetation. Given the high degree of overall visual change and moderate to high visual sensitivity, impacts of the Project at KOP 2, including along Rudnick Boulevard from Borax Bill Park to the east to 90th Street to the west, would be **significant**, as shown in Table 3.1-1.

Implementation of Mitigation Measure 3.1-2c is recommended to supplement APM AES-1 to include additional requirements for treating surfaces with appropriate colors, finishes, and textures to reduce the impact at KOP 2.

Key Observation Point 3

As described in Section 3.1.9.1, the existing visual environment at KOP 3 as shown in Figure 3.1-15a is free from constructed visual elements and has distinctive visual quality that is considered overall moderate to high. Views from residential neighborhoods tend to be long, sustained, and frequent; therefore, viewer sensitivity is high.

As shown in Figure 3.1-15b, the Project would create a strong visual contrast in the otherwise unified natural view with distinct, hard vertical and horizontal lines from the subtransmission infrastructure. As a result, the moderate to high visual quality of the view from KOP 3 would decrease to low to moderate quality. SCE would implement APM AES-1, which would reduce the glare and contrast of the subtransmission infrastructure, but the potential impact of the Project at KOP 3 would be **significant** because the monopoles would still be plainly visible and maintain a strong visual contrast.

Implementation of Mitigation Measure 3.1-2c is recommended to supplement APM AES-1 to include additional requirements for treating surfaces with appropriate colors, finishes, and textures to reduce the impact.

BLM-Suggested Key Observation Point 3

As shown in Appendix E BLM KOP 3, *Existing View*, the existing visual environment at BLM-suggested KOP 3 is free of constructed visual elements. The visual quality is considered overall moderate to high. Given the longer duration of views for recreationists and motorists at BLM-suggested KOP 3 along Twenty Mule Team Parkway, viewer sensitivity is moderate to high.

Looking due west along Twenty Mule Team Parkway in this view, the proposed subtransmission line alignment would be adjacent to the north side of the roadway. Appendix E BLM KOP 3, *Simulated View*, shows that the Project would create a strong visual contrast in the otherwise unified natural view with distinct, hard vertical and horizontal lines created by the subtransmission infrastructure. As a result, the moderate to high visual quality of the view from BLM-suggested KOP 3 would decrease to low to moderate quality. SCE would implement APM AES-1, which would reduce the glare and contrast of the subtransmission infrastructure. However, the potential impact of the Project at BLM-suggested KOP 3 along Twenty Mule Team Parkway from U.S. 395 to the east to approximately 0.25 mile east of Rutgers Road to the west, would be **significant** because the monopoles would still be plainly visible and create a strong visual contrast.

Implementation of Mitigation Measure 3.1-2c is recommended to supplement APM AES-1 to include additional requirements for treating surfaces with appropriate colors, finishes, and textures to reduce the impact.

Mitigation Measure 3.1-2c: Treat Surfaces with Appropriate Colors, Finishes, and Textures.

For all structures that are visible from moderate to highly sensitive viewing locations (e.g., Kramer–Cal City 115 kV Subtransmission Line at KOPs 2 and 3 and BLM-suggested KOP 3), SCE shall apply surface coatings with appropriate colors, finishes, and textures to most effectively blend the structures with the visible backdrop landscape. For subtransmission structures and lines that are visible from more than one sensitive viewing location, if backdrops are substantially different when viewed from different vantage points, the darker color shall be selected, because darker colors tend to blend into landscape backdrops more effectively than lighter colors, which may contrast and produce glare. At locations where a subtransmission structure and/or lines would be silhouetted against the skyline, non-reflective, light-gray colors shall be selected to blend with the sky.

SCE shall develop a SCE Structure Surface Treatment Plan for the lightweight steel (LWS) poles, tubular steel poles, and any other visible structures in consultation with a visual specialist designated by CPUC, as appropriate, to ensure that the objectives of this measure are achieved. SCE shall submit the Structure Surface Treatment Plan to CPUC for review and approval at least 90 days before the start of construction.

Significance after Mitigation: Implementation of Mitigation Measure 3.1-2c would lessen impacts in the vicinity of KOPs 2 and 3 and BLM-suggested KOP 3 by reducing the visual contrast created by new subtransmission poles and lines, but not to a less-than-significant level. Even with appropriate colors and finishes with implementation of Mitigation Measure 3.1-2c, due to their location, the added structures would create a strong visual contrast compared to existing conditions. The impact would therefore remain **significant and unavoidable**.

Criterion d) Whether the Project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

Impact 3.1-3: The Project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area. ***(Less than Significant)***

Construction

There are approximately 24 residential dwellings, as well as a church and a park, within 500 feet of the Project. Because much of the land in the study area is primarily undeveloped, existing sources of nighttime lighting are few, but such sources include vehicles on roadways, interspersed residences and commercial buildings, and lighting associated with existing substations.

Construction of the Project would generally occur during daytime hours. However, at limited times some construction activities, such as de-energizing and re-energizing existing lines along the Project subtransmission lines and substations/switchyard, may be required or finished at night while electrical demand is low; these activities would require lighting for safety. Any required lighting during construction would be limited to individual work areas and would be temporary.

Staging yards may be lit for security; however, lighting would be directed on-site and away from potentially sensitive receptors. If temporary lighting is needed along the Project alignments or at staging areas, portable light standards would be placed along the perimeter of the work area or staging area, as necessary. The light standards would be shielded, resulting in light being directed downward and inward (toward the work or staging area). (See EIR Section 2.7.2.5.)

With implementation of shielded, downward, and Project-facing lighting, temporary impacts of nighttime light on neighboring properties during construction would be **less than significant**.

Operation and Maintenance Activities

It is likely that the Project would result in a nominal increase in operation and maintenance (O&M) activities, such as increased maintenance and inspection trips; however, O&M activities are not anticipated to occur outside of daylight hours. Should O&M activities be required outside of daylight hours, vehicular headlights may be required, and portable light standards similar to those used during construction may be used. However, vehicular headlights are an existing source of light in the vicinity, and any additional lighting associated with nighttime O&M activities would be temporary, infrequent, shielded, and directed downward.

Equipment and structures at the expanded and new substations would have nonreflective finishes to reduce the opportunity for glare, pursuant to APM AES-1. For instance, galvanized steel would have a dulled finish or be color treated. New subtransmission conductors would be non-specular and nonreflective, as would the insulators on the monopoles.

No new sources of substantial light or glare would be created, and there would be **no impact** attributable to these activities.

Cal City–Edwards–Holgate 115 kV Subtransmission Line

As described in Chapter 2, SCE does not anticipate installing any new structure lighting as part of the Project, except for aviation lighting and/or markings that may be required for some structures near EAFB. Upon completion of the final design, pursuant to Mitigation Measure 3.9-2, *EAFB Obstruction Evaluation*, EAFB would evaluate Project structures located within 2 miles of any active EAFB airstrips. EAFB may recommend alterations to the Project design, including the addition of marker lighting. Aviation lights are manufactured with focused beacons that direct light upward and outward without illuminating nearby areas directly below the lights, and no visible reflected light would be visible from the ground surface (SCE 2023). Additional aviation lighting would be subject to EAFB review and approval consistent with existing lighting in the vicinity of EAFB. Therefore, aviation lighting would not create a new substantial source of light or glare, and the impact would be **less than significant**.

Substation and Switchyard Improvements

The Project substations and switchyard currently have lighting that turns on automatically at night, triggered by a timer. However, under the Project, the expanded Cal City Substation would not be illuminated at night during regular operation. Rather, lighting would be turned on remotely by SCE personnel before they enter the substation, only when required for maintenance outages or emergency repairs occurring at night. The expanded substation would require additional lighting similar to the existing lighting, which would consist of high-pressure sodium lights

located in the switchyards, around the transformer banks, and in areas of the yard where operating and maintenance activities may take place during evening hours.

Because additional lighting at the expanded Cal City Substation would be similar to the existing lighting, and because the Project would reduce nighttime lighting at the substation during normal operation, impacts on visual resources from new sources of nighttime light at the Cal City Substation would not be substantial and impacts would be **less than significant**.

Kramer–Cal City 155 kV Subtransmission Line

North of the Cal City Substation, the new Kramer–Cal City 155 kV Subtransmission Line would be approximately 12,200 feet from the eastern end of Runway 6/24 at the California City Airport. Runway 6/24 is 6,025 feet in length (City of California City undated). As noted in Section 3.1.6.1, FAA regulations consider construction projects exceeding 200 feet in height—or those extending at a ratio greater than 100 to 1 (horizontal to vertical) from a public airport runway more than 3,200 feet long out to a horizontal distance of 20,000 feet—as potential obstructions. With Runway 6/24 exceeding 3,200 feet in length, the Project would need to comply with the alternate "ratio method" to determine the need for aviation lighting on subtransmission structure tops. At a distance of 12,200 feet and applying a 100-to-1 ratio, the FAA threshold would be a height of 122 feet. As noted in Table 2-1, *Proposed Subtransmission Line Structures*, the LWS pole and TSP structures would be as tall as 132 feet.

To determine what, if any, obstruction lighting would be needed for the portion of the subtransmission line within the FAA's jurisdiction, SCE would file with the FAA for official study and determination of lighting and/or marking requirements for all subtransmission structures. If aviation obstruction lighting is required, as noted above, such lighting is manufactured with focused beacons that direct light upward and outward without illuminating nearby areas directly below the lights, and no visible reflected light would be visible from the ground surface (SCE 2023). The added lighting would be subject to FAA and EAFB review and approval for conformance with FAA requirements. Therefore, this lighting would not create a new substantial source of light or glare, and the impact would be **less than significant**.

Mitigation: None required.

3.1.9.4 Cumulative Effects Analysis

The geographic scope for the cumulative impacts associated with aesthetic and visual resources is the same as that described in Section 3.1.2.1, *Study Area*, for the evaluation of direct and indirect impacts attributable to the Project. The study area consists of publicly accessible locations, including those from major or scenic roadways, scenic vistas, parks, and/or lands used for recreational purposes from which components of the Project may be visible. It is physically defined by the surrounding topography and is bounded by the San Gabriel Mountains on the south, the Tehachapi Mountains on the west, and the Rand Mountains to the north (City of California City 2009). EAFB forms the physical study area boundary on the south.

This analysis assumes full build-out of the projects listed in Section 3.0.3, *Approach to the Cumulative Impacts Analysis*. Because the Project is not planned for decommissioning, the

temporal scope for analysis of cumulative effects would be permanent. The projects listed in Table 3.0-1, *Cumulative Projects Within 5 Miles of the Project*, include solar energy facility projects, transmission projects, and commercial cannabis facilities. These projects and other future developments would be subject to the applicable city and/or county planning processes and state environmental review on a project-by-project basis.

As shown in Figure 3.0-1, *Cumulative Projects Within 5 Miles of the Project*, and Table 3.0-1, *Cumulative Projects Within 5 Miles of the Project*, three solar voltaic generation projects and one transmission line are planned within the SR 58 corridor between SR 14 to the west and Kramer Junction to the east, within foreground and middleground views of SR 58. The planned Transmission Line Easement EAFB Project, Utility Corridor 5 (Cumulative Project 10) would intersect the new Cal City–Edwards-Holgate 115 kV subtransmission line within view of KOP 4. The planned Kramer South Solar Farm (Cumulative Project 13) would be approximately 1 mile south of SR 58, between Boron and Kramer Junction. The Kramer North Solar Farm (Cumulative Project 12) would be approximately 2.5 miles north of SR 58 on the west side of U.S. 395.

Criterion a)

As concluded under Criterion a) in Section 3.1.9.3, *Direct and Indirect Effects of the Project*, the Project would have no impact on scenic vistas because no designated scenic vistas were identified within the aesthetics study area. Therefore, there would be no incremental impact that would be cumulatively considerable, and no cumulative impacts on designated scenic vistas would occur associated with the Project (*No Impact*).

Criterion b)

Impact C.3.1-1: The Project impact of damaging a scenic resource within a state scenic highway would not be cumulatively considerable. (*Less than Significant*)

As concluded under Criterion b) in Section 3.1.9.3, *Direct and Indirect Effects of the Project*, the Project would have no impact on state scenic highways because no designated state scenic highways were identified within the aesthetics study area. The analysis acknowledges that SR 58 has been deemed eligible for the state scenic highway program and, for the reasons stated in Impact 3.1-2, the Project would have a less-than-significant impact on a state scenic highway.

Within the visible area along either side of SR 58, there are no trees, rock outcroppings, historic buildings, etc., that would contribute to the scenic quality within this corridor. Other solar energy projects exist within the foreground and middleground views. The cumulative energy projects would not introduce a new visual feature that does not already exist within the SR 58 corridor and would not create a strong visual contrast or change as compared to existing conditions. Likewise, and as noted in the evaluation of KOP 4 under Impact 3.1-2, the Project would not create a strong visual contrast such that it would have a less-than-significant impact on the visual character and quality within the study area. Therefore, the incremental impact attributable to the Project would not be cumulatively considerable, yielding **less-than-significant** cumulative impacts on a state scenic highway associated with the Project.

Mitigation: None required.

Criterion c)

Impact C.3.1-2: The Project impacts of degrading an existing visual character or quality of public views of the sites and their surroundings in non-urbanized areas would not be cumulatively considerable. (*Less than Significant*)

Figure 3.0-1, *Cumulative Projects*, and Table 3.0-1, *Cumulative Projects List*, identify 16 cumulative projects located in the study area for this analysis of cumulative impacts on the visual character or quality of public views. In the western portion of the study area near the Cal City Substation and Project subtransmission line double-circuit alignment, 11 of the 12 cumulative projects are cannabis facilities. The SCE Battery Energy System Storage project (Cumulative Project 6) would be adjacent to the Cal City Substation. The Distribution Pappas 33 kV Line Project (Cumulative Project 7) shares a 4.9-mile segment of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment along Twenty Mule Team Parkway. However, construction along that segment of the distribution line, which included replacement of a portion of existing structures, occurred between September 2021 and July 2023, and therefore was present prior to November 2023, when the EIR Notice of Preparation (NOP) was published. Therefore, the Distribution Pappas 33 kV Line Project is considered to be part of the baseline scenario for the Project, and it would not contribute to an impact of the Project's that would be cumulatively considerable.

As mentioned under Criterion b), the Kramer North and South solar farm projects and the San Bernardino CSG 3 LLC project (Cumulative Projects 12, 13, and 14, respectively) are near the Kramer Substation and the proposed Kramer–Cal City 115 kV Subtransmission Line alignment. The Beyond Food Mart project (Cumulative Project 11) at the Kramer Junction interchange on SR 58 would appear consistent with the existing highway commercial structures at that location. The mine expansion planned for the U.S. Borax Life of Mine project (Cumulative Project 8) would occur within the mine property and would not be visible from publicly available vantage points in the study area.

Although the cannabis facility projects (Cumulative Projects 1, 2, 3, 4, and 5) would increase the number of industrial facilities within view of the Cal City Substation, these facilities would consist of industrial buildings similar to those already present in this area of California City and would not create a strong visual change or contrast. The SCE Battery Energy System Storage project at the Cal City Substation would have an industrial appearance consistent with the existing substation and would create minimal visual contrast at this site. The cumulative large-scale energy projects in the vicinity of Kramer Junction would increase the land area converted to large-scale solar energy projects and, although they would be consistent with the existing solar facility, they would add a moderate visual contrast in the existing visual environment in this part of the study area.

The cumulative projects are located near KOPs 1 and 5 (but not near KOPs 2, 3, and BLM-suggested KOP 3, where the Project would have significant and unavoidable impacts). Project-specific impacts on visual character and quality at KOPs 1 and 5 would be less than significant (see Impacts 3.1-2a and 3.1-2b). The view from KOP 1 at the Cal City Substation would have high viewer sensitivity when viewed from publicly accessible areas in the residential neighborhood,

but the visual change would be low given the presence of existing electrical infrastructure. The visual sensitivity at KOP 5 would be moderate to high based on the extended view from nearby BLM lands, but the visual change attributable to the Project would be low, given the presence of existing transmission lines.

The cannabis facilities would be near KOP 1. As noted above, their appearance would not create a strong visual contrast and the facilities would be to the west, away from KOP 1 and the Cal City Substation. Therefore, the incremental impact attributable to the Project would not be cumulatively considerable, yielding **less-than-significant** cumulative impacts on the area's visual character and quality.

The large-scale 70-acre Kramer North Solar Farm energy project (Cumulative Project 12) would be in view of KOP 5, which represents views not only for motorists on U.S. 395, but also recreationists using adjacent BLM lands east of U.S. 395. This solar farm would be adjacent to the existing Kramer Solar Plant. Although it would convert undeveloped land to solar arrays, this cumulative project would not create a substantial visual change or contrast in views from the adjacent BLM lands or U.S. 395. Therefore, the incremental impact attributable to the Project at KOP 5 would not be cumulatively considerable, yielding **less-than-significant** cumulative impacts on the area's visual character and quality.

Mitigation: None required.

Criterion d)

Impact C.3.1-3: The Project impact of substantial light or glare adversely affect daytime or nighttime views in the area would not be cumulatively considerable. (*Less than Significant*)

As described in Section 2.7.2.5, *Staging Area Temporary Lighting*, in Chapter 2, lighting for staging areas would be directed internally and on-site to limit light trespass. Aviation lighting may be required for some structures, depending on the requirements of FAA or EAFB.

The daytime lighting associated with the Project and each of the cumulative projects would be limited to within respective project boundaries, and thus would not combine to cause a significant cumulative impact. Nighttime lighting of the Project and other cumulative projects would be minimal, limited to that necessary to maintain employee and aviation safety. Thus, the Project's less-than-significant incremental impact would not combine with the incremental nighttime lighting impacts of other projects to cause a significant adverse cumulative effect. There is no existing significant adverse condition due to glare in the relevant area. The Project's incremental, less-than-significant impact would not combine with the incremental impacts of other projects to cause or contribute to such a condition. Therefore, the incremental cumulative effect of the Project, when considered together with past, current, and reasonably foreseeable future development, would be **less than significant**.

Mitigation: None required

3.1.10 References

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3.2 Agriculture and Forestry Resources

This section evaluates potential impacts of the Project on agriculture and forestry resources. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the scope of the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to agriculture and forestry resources.

3.2.1 Environmental Setting

3.2.1.1 Regional Setting

Kern and San Bernardino counties have experienced substantial loss of agricultural land as a result of the conversion of agricultural land to non-agricultural uses. According to the 2018 California Farmland Conversion Report published by the California Department of Conservation (DOC), nearly 37,583 acres of new urban and built-up land were converted from agricultural to non-agricultural uses in the state between 2016 and 2018. Fifty-six percent (21,046 acres) of these statewide land conversions occurred in the Southern California region, and nine out of the top ten urbanizing counties were in the San Joaquin Valley and Southern California regions.

Specifically, Kern County and San Bernardino County ranked second and seventh in urbanization, respectively (DOC 2018). Approximately 6,076 acres were converted from agricultural to non-agricultural uses in Kern County between 2016 and 2018. In 2018, Kern County had 2,726,667 acres of irrigated and non-irrigated farmland and 165,064 acres of urban built-up land (DOC 2018). In San Bernardino County, approximately 688 acres were converted from agricultural to non-agricultural uses between 2016 and 2018. In 2018, San Bernardino County had 917,102 acres of irrigated and non-irrigated farmland and 288,434 acres of urban built-up land (DOC 2018).

In 2022, the gross value of agricultural production in Kern County was approximately $7.72 billion, representing a decrease of approximately 8 percent compared to the prior year. The top agricultural products in Kern County in 2022 were grapes, citrus, milk, almonds, pistachios, carrots, cattle, potatoes, silage, forage, and alfalfa crops (Kern County 2022a). The top agricultural products in San Bernardino County in 2022 were dairy products, eggs, livestock, citrus fruit, trees and shrubs, alfalfa, ground cover and bedding plants, palm trees, oriental vegetables, and apiary products (San Bernardino County 2022).

3.2.1.2 Local Setting

The Project would be in the Mojave Desert, which is characterized by isolated mountain ranges and large areas of desert plains (CGS 2002). The Project is proposed in unincorporated sections

of both Kern and San Bernardino counties, in the city of California City, and at Edwards Air Force Base. Most of the Project (approximately 90 percent) is proposed in undeveloped areas and the rest on developed land in California City and North Edwards and at Edwards Air Force Base. There are no forests or timberlands within the Project vicinity. The closest forest lands are approximately 37 miles northwest of the Project's proposed subtransmission alignments.

In Kern County, agriculture is located primarily on the west side of the county, whereas the Project would be in the east side of the county. There is very little agriculture east of the Tehachapi Mountains, which separate California City from Bakersfield (Kern County 2024). California City is the only area in eastern Kern County where the cultivation and manufacturing of cannabis is permitted (California Department of Cannabis Control 2024). As a result, industrial cultivation of cannabis occurs near the Project site. There are limited agricultural preserves in unincorporated areas of San Bernardino County within Victor Valley and the North Desert Region; however, none are near the Project's subtransmission alignments or other Project component sites.

3.2.2 Regulatory Setting

3.2.2.1 Federal

Farmland Protection Policy Act

The National Agricultural Land Study of 1980–1981 reported on a growing concern regarding the conversion of farmland to non-agricultural land. The study found that at a national level, there could be concern regarding the ability of agricultural lands to provide for a growing demand for food. Therefore, the federal government initiated policies and programs to reduce the extent to which federal activities convert Prime Farmland to non-agricultural uses (NALS Staff 1981). Congress enacted the Agriculture and Food Act of 1981 (Public Law 97-98), which contained the Farmland Protection Policy Act as a way to preserve prime farmland throughout the country. The Farmland Protection Policy Act and its implementing rules and regulations are intended to minimize the impact of federal programs on the unnecessary and irreversible conversion of farmland to non-agricultural uses. This law does not authorize the federal government to regulate the use of private or nonfederal land, nor does it otherwise affect property rights of landowners.

The U.S. Natural Resources Conservation Service, the U.S. Department of Agriculture's primary private land conservation agency, provides information to help ensure that agricultural land is not converted unnecessarily. The agency's goal is to ensure that agricultural producers can protect natural resources and provide food for a growing population (NRCS 2024).

3.2.2.2 State

California Farmland Mapping and Monitoring Program

The California Department of Conservation, or DOC, sponsors the California Farmland Mapping and Monitoring Program (FMMP) and is responsible for establishing agricultural easements in accordance with Public Resources Code Sections 10250–10255. The FMMP provides a classification system based on technical soil ratings and current land use (DOC 2022). The

FMMP is an informational service only and does not have regulatory jurisdiction over local land use decisions. The minimum land use mapping unit is 10 acres unless specified; smaller units of land are incorporated into the surrounding map classifications.

Maps of Important Farmland classify land into one of eight categories, defined as follows (DOC 2022):

- *Prime Farmland*—Land that has the best combination of features to produce agricultural crops.
- *Farmland of Statewide Importance*—Land other than Prime Farmland that has a good combination of physical and chemical features to produce agricultural crops.
- *Unique Farmland*—Land of lesser quality soils used to produce the state's leading agricultural cash crops.
- *Farmland of Local Importance*—Land that is of importance to the local agricultural economy.
- *Grazing Land*—Land with existing vegetation that is suitable for grazing.
- *Urban and Built-Up Lands*—Land occupied by structures with a density of at least one dwelling unit per 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public utility structures, and other developed purposes.
- *Land Committed to Non-Agricultural Use*—Vacant areas; existing lands that have a permanent commitment to development but have an existing land use of agricultural or grazing lands.
- *Other Lands*—Land that does not meet the criteria of the remaining categories.

The designations for Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are defined together under the terms "Agricultural Land" and "Farmland" (Public Resources Code Section 21060.1, CEQA Guidelines Appendix G). Land designations in the vicinity of the study area include "Non-Agriculture" or "Natural Vegetation" as defined by the FMMP. However, some lands identified as Semi-agriculture and Rural Commercial Land are located near the existing Cal City Substation and along the alignment for the proposed Kramer–Cal City 115 kV Subtransmission Line. There is no Farmland of Statewide Importance, Prime Farmland, nor Unique Farmland along the Project alignments (DOC 2022).

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965, known as the Williamson Act, preserves open spaces and agricultural land in exchange for property tax breaks (California Government Code Section 51200 et seq.). This law discourages urban sprawl and prevents landowners from developing their property for commercial and/or residential uses. The Williamson Act is a state program implemented at the county level. Through this program, an agricultural landowner contractually agrees to retain land in agriculture, farmland, or open space for 10 years and, in return, is allowed to pay reduced property taxes. The term of the contract automatically renews each year unless a petition is submitted for nonrenewal or cancellation.

California Government Code

Chapter 6.7 of the Government Code (Sections 51100–51155) regulates timberlands in the state. *Timberland production zone* is defined in Section 51104(g) as an area that has been zoned pursuant to Government Code Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. In this context, "compatible uses" include any use that "does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber" (Government Code Section 51104[h]). Watershed management, grazing, and the erection, construction, alteration, or maintenance of electric transmission facilities are examples of compatible uses. The general plans of cities and counties may use the term *timberland preserve zone,* which Government Code Section 51104(g) defines as equivalent to "timberland production zone."

3.2.2.3 Local

CPUC General Order No. 131-D explains that local land use regulations would not apply to the Project. However, for informational purposes, the policies of local general plans and other planning documents pertaining to agriculture and forestry resources that would otherwise be relevant to the Project are described below.

Kern County

Kern County General Plan

The Kern County General Plan contains policies pertinent to agriculture, including those discouraging urban encroachment into areas of intense agriculture (Kern County 2009). Because the Project would not be located in an area of intense agriculture, these policies are not applicable to the Project.

Kern County Zoning Ordinance

The Project alignments would cross through lands zoned in Kern County as Exclusive Agriculture (A) and Limited Agriculture (A-1) (Kern County Public Works 1970).

The following provisions of the Kern County Zoning Ordinance (Kern County 2022b) are pertinent to agricultural resources:

> ***Sections 19.12.20 and 19.14.020:*** Utilities and communication facilities are permitted on lands zoned for A and A-1, which includes transmission lines and supporting towers, poles, and underground facilities for gas, water, electricity, telephone, or telegraph service owned and operated by a public utility company or other company under the jurisdiction of the CPUC pursuant to Section 19.08.090, and utility substations.

San Bernardino County

San Bernardino Countywide Policy Plan

The San Bernardino Countywide Policy Plan contains policies pertinent to agriculture (San Bernardino County 2022). The Project's Kramer–Cal City 115 kV Subtransmission Line alignment does not cross agricultural land as designated by the San Bernardino Countywide Policy Plan Land Use Element; therefore, these policies would not be applicable.

City of California City

The City of California City General Plan does not include policies related to agriculture, forestry, or timberland that apply to the Project (City of California City 2009). Land use designations for and within the vicinity of the Project are discussed in greater detail in Section 3.11, *Land Use and Planning*.

3.2.3 Applicant Proposed Measures and Best Management Practices

3.2.3.1 Applicant Proposed Measures

No Applicant proposed measures have been identified by Southern California Edison to reduce potential Project impacts related to agriculture and forestry resources.

3.2.3.2 Best Management Practices

No best management practices have been identified by Southern California Edison to reduce potential Project impacts related to agriculture and forestry resources.

3.2.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to agriculture and forestry resources if it would:

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

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

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

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

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

3.2.5 Direct and Indirect Effects

3.2.5.1 Approach to the Analysis

This analysis relies on agricultural maps produced by the DOC and other planning and resource agencies to determine whether the Project would directly or indirectly affect land used for agricultural or forestry purposes. This section evaluates impacts based on whether the Project would convert such lands to non-agricultural or non-forestry uses, conflict with existing zoning

for agricultural and forestry uses, or involve other changes in the environment that would directly or indirectly affect these land uses.

3.2.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use.

The Project sites and alignments would not be located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as defined by the DOC. The nearest Important Farmland to a Project site or alignment is approximately 9.6 miles away. The Project would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural purposes. Consequently, there would be no impact. *(No Impact)*

Criterion b) Whether the Project would conflict with existing zoning for agricultural use, or a Williamson Act contract.

The Project would not involve any parcels under Williamson Act contracts. The nearest Williamson Act contracted lands are located approximately 10 miles north of the proposed Kramer–Cal City 115 kV subtransmission line alignment (CBI 2015). The Project alignment would cross through lands zoned in Kern County as Exclusive Agriculture (A) and Limited Agriculture (A-1) (Kern County Public Works 1970). A map of the zoning parcels for the Project alignment is provided in Section 3.11, *Land Use and Planning* (see Figure 3.11-3, *Zoning Designations*). Sections 19.12.20 and 19.14.020 of the Kern County Zoning Ordinance permit the construction of utilities on lands zoned A and A-1, which would allow for the construction of necessary Project components on land in Kern County. Furthermore, the Project would not involve any land zoned for agriculture in San Bernardino County (San Bernardino County Land Use Services 2024). Therefore, the Project would be consistent with existing zoning and would not conflict with Williamson Act contracts, and no impact would occur. *(No Impact)*

Criterion c) Whether the Project would 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 portion of the Project alignment would cross or be constructed, operated, and maintained on lands zoned or otherwise designated as timberland or forest land. The area surrounding the proposed alignment does not have a tree density greater than 10 percent as identified by the California Department of Forestry and Fire Protection, so there is no land that meets the definition of forest land under Public Resources Code Section 12220(g). Construction of the

Project would not conflict with land zoned as forest or timberland, nor would it result in the rezoning of forest land or timberland. Consequently, there would be no impact. *(No Impact)*

Criterion d) Whether the Project would result in the loss of forest land or conversion of forest land to non-forest use.

The Project would be located outside areas zoned or designated as forest land. The California Department of Forestry and Fire Protection does not indicate any segment of the alignment with a tree density exceeding 10 percent, which is the definition of a forest as identified in Public Resources Code Section 12220(g). Thus, the Project would not lead to the loss or conversion of forest land, resulting in no impact. *(No Impact)*

Criterion e) Whether the Project would involve other changes in the existing environment which, due to their location or nature, could result in conversion of agricultural land to non-agricultural use or conversion of forest land to non-forest use.

The Project would not involve any alterations to the current environment that could lead to the conversion of farmland into non-agricultural use or forest land into non-forest use. Because the Project sites and alignments do not encompass any farmland or forest land, and because the Project would not be situated on active farmland or land designated as forest land, there would be no impact. *(No Impact)*

3.2.5.3 Cumulative Effects Analysis

Criteria a) and b)

As discussed in Section 3.2.5.2, *Direct and Indirect Effects of the Project*, because the Project is not proposed on agricultural or forest lands and would not involve conversion of farmland or cancellation of Williamson Act parcels, there would be no impacts on agriculture and forestry resources. Therefore, the Project would not contribute to any potential cumulative impacts associated with agriculture and forestry resources, and there would be no cumulative impact to agriculture and forestry resources as a result of the Project. *(No Impact)*

3.2.6 References

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3.3 Air Quality

This section evaluates the impacts of the Project on regional and local air quality. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

The information and analysis presented in this section are based in part on the Revised Air Quality and Greenhouse Gas (GHG) Calculations and the *Cal City Substation 115 kV Upgrade Project Construction Health Risk Assessment* memorandum prepared for Southern California Edison (SCE) (2024) (Rincon 2024). The air pollutant emissions calculations and health risk assessment were reviewed by Environmental Science Associates and were found to be adequate to include in this analysis; this information is provided in **Appendix F**.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to air quality.

3.3.1 Environmental Setting

The Project area is in Kern and San Bernardino counties in the Mojave Desert region of California on federal, state, private, and municipal land. These lands include unincorporated areas of Kern County and San Bernardino County; the city of California City; Edwards Air Force Base, controlled by the U.S. Department of Defense; and public lands under the jurisdiction of the U.S. Bureau of Land Management and the California Department of Fish and Wildlife. Approximately 90 percent of the Project area is within undeveloped open areas, with the remaining 10 percent located within developed areas (including California City).

The Project area is entirely within the Mojave Desert Air Basin (MDAB). The MDAB covers approximately 27,300 square miles and includes eastern Kern County, northeastern Los Angeles County, eastern Riverside County, and most of San Bernardino County. The MDAB is bounded by the Colorado River Valley to the south and east, and by mountains on its remaining sides. The MDAB covers most of California's high desert and is California's largest air basin. Within the MDAB, the Project is under the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD) in Kern County and the Mojave Desert Air Quality Management District (MDAQMD) in San Bernardino County.

EKAPCD encompasses approximately 3,700 square miles in the northwestern portion of the MDAB, including the eastern portion of Kern County. MDAQMD encompasses approximately 20,000 square miles and covers the majority of the MDAB. MDAQMD has jurisdiction over San Bernardino County's high desert and portions of Riverside County.

3.3.1.1 Criteria Air Pollutants

The U.S. Environmental Protection Agency (USEPA) has identified criteria air pollutants and has set national ambient air quality standards (NAAQS) for widespread pollutants from numerous and diverse sources that pose a threat to public health and welfare. USEPA has set NAAQS for seven principal pollutants, which are called "criteria" pollutants: carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone, particulate matter less than or equal to 10 microns in diameter (PM_{10}), particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and sulfur dioxide (SO_2). The State of California has established California ambient air quality standards (CAAQS) for these criteria pollutants, as well as ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

The following sections describe criteria pollutants that are considered a concern in this EIR analysis because the Project could increase their concentrations in the MDAB.

Nitrogen Dioxide

NO_2 is an air quality pollutant of concern because it acts as a respiratory irritant. NO_2 is a major component of the group of gaseous nitrogen compounds commonly referred to as *oxides of nitrogen* (NO_X). A precursor to ozone formation, NO_X is produced by fuel combustion in motor vehicles, industrial stationary sources (such as industrial activities), ships, aircraft, and rail transit. Typically, NO_X emitted from fuel combustion takes the form of nitric oxide (NO) and NO_2. NO is often converted to NO_2 when it reacts with ozone or undergoes photochemical reactions in the atmosphere.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere; rather, it is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving volatile organic compounds (VOC) and NO_X. VOC is also referred to by the California Air Resources Board (CARB) as *reactive organic gases* (ROG). ROG and NO_X are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately 3 hours.

Ozone is a regional air pollutant because it is not emitted directly by sources but instead is formed downwind of sources of VOC and NO_X under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when conditions such as long sunny days and regional subsidence inversions are conducive to the formation and accumulation of secondary photochemical compounds.

Carbon Monoxide

CO is a nonreactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle

emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the blood's oxygen-carrying capacity of the blood, which in turn reduces the amount of oxygen that reaches the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Particulate Matter

PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are local in nature, while others, such as vehicular traffic, have a more regional effect. Particulates can damage materials and reduce visibility. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Annually, 7,300–11,000 premature cardiopulmonary deaths in California are estimated to be associated with exposures to particulate matter (CARB 2010).

Sulfur Dioxide

SO_2 is a colorless acidic gas with a pungent odor produced by the combustion of sulfur-containing fuels, such as oil, coal, and diesel. It has the potential to damage materials and cause health effects at high concentrations. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

3.3.1.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances that can cause short-term (acute) and/or long-term (chronic or cancer-causing) adverse human health effects—injury or illness. TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources such as gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes nearly 200 compounds, including diesel particulate matter (DPM) emissions from diesel-fueled engines (CARB 2024e).

3.3.1.3 Valley Fever

Valley Fever (or Coccidioidomycosis) is an infectious disease caused by the fungus *Coccidioides immitis*. Valley Fever is also known as San Joaquin Valley Fever, Desert Fever, or Cocci. Infection is caused by inhalation of *Coccidioides immitis* and *C. posadasii* spores that have become airborne when dry, dusty soil or dirt is disturbed by natural processes such as wind or earthquakes, or by human-induced ground-disturbing activities such as construction and farming.

Most cases of Valley Fever in California (more than 65 percent) are reported in people who live in the Central Valley and Central Coast regions. The California Department of Public Health (CDPH) reports that San Luis Obispo, Kings, and Kern counties report the highest rates of Valley Fever cases, at more than 100 per 100,000 population (CDPH 2021). In 2022, CDPH received reports of 7,451 incident cases of Valley Fever (CDPH 2023).

Valley Fever is an important public health problem in Kern County, with a case rate of 265 per population of 100,000; it is not as prevalent in San Bernardino County, which has a case rate of 11 per population of 100,000 (CDPH 2023). CDPH classifies Valley Fever as "highly endemic" in populations with more than 20 cases per year of Valley Fever per 100,000 people. There is currently no vaccine, although efforts to develop a vaccine are ongoing.

3.3.1.4 Existing Air Quality

EKAPCD and MDAQMD monitor pollutant levels by using a network of monitoring stations throughout the MDAB. The closest ambient air quality monitoring station to the Project area is at 923 Poole Street, Mojave, approximately 12 miles southwest of the Cal City Substation. **Table 3.3-1** summarizes the ambient air quality data collected at this station in 2019 and 2020. Data for 2021 through 2023 are from the station located at 1773 California State Route 58 in Mojave, approximately 13 miles southwest of Cal City Substation. Both stations monitor ozone, PM_{10}, and $PM_{2.5}$ concentrations.

TABLE 3.3-1
SUMMARY OF AIR QUALITY MONITORING DATA (2019–2023)

Pollutant	Applicable Standard	2019	2020	2021	2022	2023
Ozone						
Maximum 1-hour Concentration (ppm)	0.09 ppm	0.085	**0.108**	0.094	0.091	0.050
Days 1-hour CAAQS Exceeded		0	5	0	0	0
Maximum 8-hour Concentration (ppm)	0.07 ppm	**0.077**	**0.100**	**0.084**	**0.075**	0.046
Days 8-hour CAAQS/NAAQS Exceeded		10	15	19	8	0
Respirable Particulate Matter (PM_{10})						
Maximum 24-hour Concentration—State/National ($\mu g/m^3$)		**240.8/248.7**	**99.0**/111.9	**330.6/352.0**	**110.0**/121.5	38.3/39.6
Measured Days > 24-hour CAAQS	50 $\mu g/m^3$	15	8	33	7	0
Measured Days > 24-hour NAAQS	150 $\mu g/m^3$	2	0	1	0	0
Annual Average CAAQS ($\mu g/m^3$)	20 $\mu g/m^3$	**22.0**	NA	**27.8**	NA	NA
Fine Particulate Matter ($PM_{2.5}$)						
Maximum 24-hour Concentration ($\mu g/m^3$)	35 $\mu g/m^3$	19.8	**72.8**	**50.7**	10.9	7.4
Measured Days > 24-hour NAAQS		0	4	3	0	0
Annual Average CAAQS/NAAQS ($\mu g/m^3$)	12 $\mu g/m^3$	6.5	NA	7.5	5.2	NA

NOTES: $\mu g/m^3$ = micrograms per cubic meter; CAAQS = California ambient air quality standard; NA = not available; NAAQS = national ambient air quality standard; 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; ppm = parts per million

Bold values are in excess of applicable standards. 2019 and 2020 data are from the Mojave–923 Poole Street monitoring station. 2021–2023 data are from the Mojave–CA 58 Business monitoring station.

SOURCE: CARB 2024a.

As shown in Table 3.3-1, based on data for the last 5 years, the 1-hour ozone CAAQS was exceeded only in 2020. There were numerous exceedances of the 8-hour ozone CAAQS between 2019 and 2022, but none in 2023. PM_{10} standards were also exceeded on several days between 2018 and 2022, but not in 2023; the $PM_{2.5}$ 24-hour standard was exceeded on several days in 2020 and 2021.

3.3.1.5 Sensitive Receptors

In this air quality analysis, *sensitive receptors* are generally defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, residences, and day care centers. The reasons for greater than average sensitivity include preexisting health problems, proximity to emissions sources, and duration of exposure to air pollutants. Schools, day care centers, hospitals, and convalescent homes are considered relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality–related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, which results in greater exposure to ambient air quality.

Because of the remote nature of most of the Project sites and alignments, sensitive receptors are widely scattered throughout the Project area. The sensitive receptors within 1,000 feet of the Project sites and alignments are described below. **Table 3.3-2** summarizes the locations of sensitive receptors in the vicinity of the various Project components. As shown, the nearest sensitive receptors to the Project sites/alignments are single-family residences. The closest sensitive receptors are approximately 140 feet from the Kramer–Cal City 115 kV Subtransmission Line alignment near the intersection of Twenty Mule Team Parkway and Rudnick Road. The closest sensitive receptors to the Cal City Substation disturbance area are along Hacienda Boulevard and Mendiburu Road approximately 430 feet to the southeast. California City High School is approximately 1,050 feet west-southwest of the Cal City Substation disturbance area.

TABLE 3.3-2
NEAREST SENSITIVE RECEPTORS TO PROJECT COMPONENTS

Project Component	Nearest Sensitive Receptors	Receptor Type	Approximate Distance to Nearest Sensitive Receptor
Kramer–Cal City 115 kV Subtransmission Line	Single-Family Dwelling	Residential	140 feet
Cal City Substation Disturbance Area	Single-Family Dwelling	Residential	430 feet
	California City High School	School	1,050 feet
Staging Area 1-17	Single-Family Dwelling	Residential	280 feet
	California City High School	School	700 feet
Cal City–Edwards-Holgate 115 kV Subtransmission Line	Single-Family Dwelling	Residential	330 feet
Staging Area 1-2	Single-Family Residential	Residential	370 feet

NOTE: kV = kilovolt
SOURCE: SCE 2023

Scattered residences are also present along the alignment of the Cal City–Edwards-Holgate 115 kV Subtransmission Line, with the closest residences approximately 330 feet to the south off Hillcrest Road. Residential and recreational receptors are located near the proposed Kramer–Cal City 115 kV Subtransmission Line. There are no receptors within 1,000 feet of the other existing substations/switchyard (Edwards Substation, Holgate Switchyard, and Kramer Substation).

3.3.2 Regulatory Setting

3.3.2.1 Federal

Clean Air Act and National Ambient Air Quality Standards

The 1970 Clean Air Act (CAA) (most recently amended in 1990) requires each regional planning or air pollution control agency to prepare a regional air quality plan outlining the measures through which both stationary and mobile sources of pollutants will be controlled to achieve all ambient air quality standards by the deadlines specified in the CAA. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect the segments of the public most susceptible to respiratory distress: asthmatics, the very young, the elderly, people weakened from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards before adverse health effects are observed. **Table 3.3-3** identifies the current NAAQS along with the corresponding State of California standards (the CAAQS).

By law, USEPA must set the NAAQS at levels necessary to protect public health. Therefore, the closer a region is to attaining a particular ambient air quality standard, the lower the human health impact is from that pollutant. See Section 3.3.1.1, *Criteria Air Pollutants*, for a brief description of the health effects of exposure to criteria air pollutants.

Pursuant to the 1990 federal CAA Amendments, USEPA classifies air basins (or portions thereof) as “attainment,” “nonattainment,” or “unclassified” for each criteria air pollutant, based on whether the national standards have been achieved. An “unclassified” designation indicates that air quality and other relevant information is insufficient to determine whether the area is attainment or nonattainment. As shown in Table 3.3-3, the Project area is designated as a nonattainment area for the federal 8-hour ozone standard (EKAPCD portion only) and the federal 24-hour PM_{10} standard (MDAQMD portion only) and is in attainment for all other federal ambient air quality standards. The state-level attainment status of the Project area is discussed further below.

The federal CAA Amendments require each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The federal CAA Amendments added a requirement for states containing areas that violate the national standards to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. USEPA reviews SIPs to determine whether they conform to the mandates of the federal CAA Amendments and will achieve air quality goals when implemented.

TABLE 3.3-3
STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR THE PROJECT AREA

Pollutant	Averaging Time	CAAQS	NAAQS	Designation/Classification	
				CAAQS	NAAQS
Ozone	1 hour	0.09 ppm	—	Nonattainment	—
	8 hours	0.070 ppm	0.070 ppm	Nonattainment	Severe Nonattainment (EKAPCD) and Unclassified/ Attainment (MDAQMD)
CO	1 hour	20 ppm	35 ppm	Unclassified (EKAPCD) Attainment (MDAQMD)	Attainment/Unclassified
	8 hours	9.0 ppm	9 ppm	Unclassified (EKAPCD) Attainment (MDAQMD)	Attainment/Unclassified
NO_2	1 hour	0.18 ppm	0.10 ppm	Attainment	Attainment/Unclassified
	Annual Average	0.030 ppm	0.053 ppm	Attainment	Attainment/Unclassified
SO_2	1 hour	0.25 ppm	0.075 ppm	Attainment	Attainment/Unclassified
	24 hours	0.04 ppm	0.14 ppm	Attainment	Attainment/Unclassified
	Annual Average	—	0.030 ppm	—	Attainment/Unclassified
PM_{10}	24 hours	50 µg/m^3	150 µg/m^3	Nonattainment	Unclassified (EKAPCD) Nonattainment (MDAQMD)
	Annual Average	20 µg/m^3	—	Nonattainment	—
$PM_{2.5}$	24 hours	—	35 µg/m^3	—	Attainment/Unclassified
	Annual Average	12 µg/m^3	9.0 µg/m^3	Attainment	Attainment/Unclassified
Lead	Monthly Average	1.5 µg/m^3	—	Attainment	—
	Rolling 3-Month Average	—	0.15 µg/m^3	—	Attainment/Unclassified
Sulfates	24 hours	25 µg/m^3	—	Attainment	—
H_2S	1 hour	0.03 ppm	—	Unclassified	—
Vinyl Chloride	24 hours	0.01 ppm	—	No information available	—
Visibility-Reducing Particles	8 hours	Extinction of 0.23 per kilometer	—	Unclassified	—

NOTES: µg/m^3 = micrograms per cubic meter; CAAQS = California ambient air quality standard; CO = carbon monoxide; EKAPCD = Eastern Kern Air Pollution Control District; H_2S = hydrogen sulfide; MDAQMD = Mojave Desert Air Quality Management District; NAAQS = national ambient air quality standard; NO_2 = nitrogen dioxide; 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; ppm = parts per million; SO_2 = sulfur dioxide

Effective May 6, 2024, the annual average NAAQS for $PM_{2.5}$ was lowered from 12.0 to 9.0 µg/m^3. The U.S. Environmental Protection Agency expects to finalize the attainment designations for the lower standard by February 2026. The attainment/unclassified designation shown above is with respect to the old standard.

SOURCES: CARB 2016; USEPA 2024a; USEPA 2024b; MDAQMD 2024; EKAPCD 2024.

3.3.2.2 State

California Clean Air Act and Ambient Air Quality Standards

Although the federal CAA established the NAAQS, individual states retain the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of California's unique meteorological challenges, there are differences between the state and national ambient air

quality standards. The current CAAQS are shown in Table 3.3-3. Most of the California ambient standards are at least as protective as the corresponding national ambient standards.

NAAQS and CAAQS have been set at levels considered safe to protect the public, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. As explained by CARB, "an air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment" (CARB 2024b). That is, if a region is in compliance with the ambient air quality standards, its regional air quality can be considered protective of public health.

The California CAA (California Health and Safety Code Section 39600 et seq.), like its federal counterpart, calls for designation of areas as "attainment," "nonattainment," or "unclassified" with respect to the CAAQS. The Project area is currently designated as nonattainment for the following CAAQS: state 1-hour and 8-hour ozone and 24-hour PM_{10} and annual-average PM_{10}. The Project area is designated as attainment or unclassified with respect to the other state standards.

In 2003, the California Legislature enacted Senate Bill (SB) 656 (Chapter 738, Statutes of 2003), codified as Health and Safety Code Section 39614, to reduce public exposure to PM_{10} and $PM_{2.5}$. SB 656 required CARB, in consultation with local air districts, to develop and adopt by January 1, 2005, a list of the most readily available, feasible, and cost-effective control measures that could be employed by CARB and the air districts to reduce PM_{10} and $PM_{2.5}$ (collectively referred to as PM). The legislation established a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for $PM_{2.5}$ and provided new direction on PM reductions in those areas not subject to federal requirements for PM. Measures adopted as part of SB 656 complement and support those required for federal $PM_{2.5}$ attainment plans, as well as for state ozone plans. This ensures continuing focus on PM reduction and progress toward attaining California's more health protective standards. This list of air district control measures was adopted by CARB on November 18, 2004.

Toxic Air Contaminants

The California Health and Safety Code defines TACs as air pollutants that may cause or contribute to an increase in mortality or in serious illness, or that may pose a present or potential hazard to human health. The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The program involves a two-step process: risk identification and risk management. A total of 243 substances has been designated TACs under California law, including the 189 (federal) hazardous air pollutants.

Off-Road Diesel Emissions

The CARB In-Use Off-Road Diesel-Fueled Fleets Regulation applies to all self-propelled off-road diesel vehicles of 25 horsepower (hp) or greater that are used in California, and to most two-engine vehicles (except on-road two-engine sweepers). This includes rental or leased fleet vehicles. CARB's goal is to gradually reduce the emissions of the statewide construction vehicle fleet through turnover, repowering, or retrofitting. New engine emissions requirements were

grouped into tiers based on the year in which the engine was built (CARB 2024c). In 2014, new engines were required to meet Tier 4 Final standards, which are the most stringent emissions standards for off-road vehicle engines to date. The goal of the In-Use Off-Road Diesel-Fueled Fleets Regulation is to reduce particulate matter (PM_{10} and $PM_{2.5}$) and NO_X emissions from off-road heavy-duty diesel vehicles in California (CARB 2024d). This regulation also limits idling to 5 minutes, requires a written idling policy for larger vehicle fleets, and requires fleet operators to provide information on their engines to CARB and label vehicles with a CARB-issued vehicle identification number.

Air Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to DPM emissions (California Code of Regulations Title 13, Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure prohibits diesel-fueled commercial vehicles from idling for more than 5 minutes at any given location. The primary goal of this measure is to reduce public health impacts from diesel emissions, but compliance with the regulation also results in GHG emissions reductions and energy savings in the form of reduced fuel consumption from unnecessary idling.

Valley Fever

On October 11, 2019, Assembly Bill (AB) 203 was enacted to add Section 6709 to the Labor Code, relating to occupational safety and health. This law requires construction employers engaging in specified work activities or vehicle operation in counties where Valley Fever is defined as highly endemic to provide effective awareness training on Valley Fever to all employees annually, and before employees begin work that is reasonably anticipated to cause substantial dust disturbance. Therefore, AB 203 would be applicable to Project work conducted in Kern County but not in San Bernardino County. This law requires the training to cover specific topics and authorizes the training to be included in the employer's injury and illness prevention program training or as a standalone training program. The training must include the following topics:

1. What Valley Fever is and how it is contracted.
2. High-risk areas and the types of work and environmental conditions during which the risk of contracting Valley Fever is highest.
3. Personal risk factors that may create a higher risk for some individuals.
4. Methods for preventing personal and environmental exposure.
5. The importance of early detection, diagnosis, and treatment to help prevent the disease from progressing.
6. Recognizing common signs and symptoms of Valley Fever.
7. The importance of reporting symptoms to the employer and seeking medical attention from a physician and surgeon for appropriate diagnosis and treatment.
8. Common treatment and prognosis for Valley Fever.

3.3.2.3 Local

East Kern County Air Pollution Control District

EKAPCD established the following rules to regulate air quality that are applicable to the CEQA review of the Project:

- *Rule 201.1—Permits to Operate for Sources Subject to Title V of the Federal Clean Air Act Amendments of 1990.* This rule is intended to implement requirements of Title V of the federal CAA. Although the Project would not require a permit to operate, EKAPCD recommends considering the rule's offsets trigger levels in CEQA reviews.
- *Rule 401—Visible Emissions.* This rule prohibits the discharge of visible emissions into the atmosphere from any single source of emission.
- *Rule 402—Fugitive Dust.* This rule prevents, reduces, and mitigates ambient concentrations of anthropogenic (human-caused) fugitive dust emissions to an amount sufficient to attain and maintain NAAQS and CAAQS.
- *Rule 404.1—Particulate Matter Concentration.* This rule regulates the allowable concentration of particulate matter discharged per standard cubic foot of gas at standard conditions. Concentrations may not exceed 0.1 grain per standard cubic foot of gas.
- *Rule 405—Particulate Matter Emission Rate.* This rule describes the limits of emission rates for particulate matter discharge into the atmosphere from any source operation.
- *Rule 407—Sulfur Compounds.* This rule controls the discharge of sulfur compounds. Sulfur compounds may not exceed 0.2 percent by volume.
- *Rule 410—Organic Solvents.* This rule prohibits the discharge of more than 15 pounds of organic materials into the atmosphere in one day.
- *Rule 419—Nuisance.* This rule prohibits the discharge of air contaminants from any source, or other materials that cause injury, detriment, nuisance, or annoyance to the public.

EKAPCD seeks to attain and maintain the NAAQS and CAAQS and to ensure that air pollutants do not pose a nuisance or significant health threat. EKAPCD has adopted the following plans to address EKAPCD's nonattainment status for ozone.

2017 Attainment Plan for the 2008 8-Hour Ozone NAAQS

As part of the 2017 Attainment Plan, EKAPCD asked CARB to formally request that USEPA voluntarily reclassify EKAPCD from "moderate" to "serious" nonattainment for the 2008 8-hour ozone NAAQS and revise the attainment date to December 31, 2020 (EKAPCD 2017). The plan addressed all required elements, emissions reductions, and control measures necessary to demonstrate attainment with the 2008 8-hour ozone NAAQS by 2020.

2023 Attainment Plan for the 2008 and 2015 8-Hour Ozone NAAQS

On May 4, 2023, EKAPCD adopted an ozone attainment plan to satisfy the requirements of the federal CAA for the 2008 and 2015 8-hour NAAQS. In this plan, EKAPCD asks CARB to formally request that USEPA voluntarily reclassify EKAPCD's nonattainment area from "serious" to "severe" nonattainment pursuant to the 2015 NAAQS. The plan presents EKAPCD's

strategy, which includes mandated elements, for attaining the 2008 8-hour NAAQS by 2027 and the 2015 NAAQS by 2032 (EKAPCD 2023a). The 2023 Ozone Attainment Plan was approved by CARB in June 2023 and was sent to USEPA by CARB in August 2023.

Reasonably Available Control Technology State Implementation Plans

EKAPCD previously adopted Reasonably Available Control Technology (RACT) SIPs in 2017 for the 2008 NAAQS and in 2020 for the 2015 NAAQS. At the time each RACT SIP was adopted, EKAPCD's nonattainment area was classified as "serious" with respect to the 2008 NAAQS and "moderate" for the 2015 NAAQS.

Most recently, in 2023, the EKAPCD board adopted the RACT SIP for the 2008 and 2015 8-hour ozone NAAQS (EKAPCD 2023b).

Mojave Desert Air Quality Management District

MDAQMD stipulates rules and regulations that all projects within its jurisdiction must follow. In addition, MDAQMD provides methodologies for analyzing a project's impacts under CEQA. The following plans, rules, and regulations for regulating air quality apply to all sources within MDAQMD's jurisdiction and are applicable to the review of the Project:

- *Rule 401—Visible Emissions.* This rule provides limits for the visible emissions from sources within MDAQMD.
- *Rule 402—Nuisance.* This rule prohibits the discharge of air contaminants from any source, or other materials that cause injury, detriment, nuisance, or annoyance to the public.
- *Rule 403—Fugitive Dust Control.* This rule requires actions to prevent, reduce, and mitigate fugitive dust to reduce the amount of PM_{10} entrained in the ambient air from anthropogenic sources within the district.
- *Rule 404—Particulate Matter Concentration.* This rule regulates the allowable concentration of particulate matter discharged per standard cubic foot of gas at standard conditions.

Federal 75 ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)

MDAQMD is required to prepare an air quality attainment plan outlining measures to achieve attainment levels for criteria air pollutants and avoid future levels that exceed applicable standards. MDAQMD has developed the *Federal 75 ppb Ozone Attainment Plan* (MDAQMD 2017), which aims to achieve and maintain the NAAQS for ozone by July 2027.

Federal 70 ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)

USEPA designated the MDAQMD portion of the Western Mojave Desert Nonattainment Area as nonattainment for the 2015 70 parts per billion (ppb) 8-hour ozone NAAQS. This plan addresses all federal attainment planning requirements for the 70 ppb federal 8-hour ozone standard and aims to achieve and maintain the 70 ppb ozone NAAQS by August 3, 2033. This document includes the latest planning assumptions regarding population, vehicle activity, and industrial activity, and addresses all existing and forecast ozone precursor–producing activities within MDAQMD through the year 2032 (MDAQMD 2023).

Reasonable Further Progress/Rate-of-Progress Plan

MDAQMD adopted the Reasonable Further Progress/Rate-of-Progress Plan (MDAQMD 1994) to present milestone dates beginning in 1996 and continuing every 3 years thereafter by demonstrating reasonable further progress and attainment of the ozone NAAQS by milestone dates. These emissions are verified at each milestone date to determine reasonable further progress status until the ozone NAAQS is attained.

Kern County

The following policies from the Kern County General Plan pertain to air quality (Kern County 2009):

> ***Policy 19:*** In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, will ensure that:
>
> (a) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
>
> (b) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.
>
> ***Policy 20:*** The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.
>
> ***Policy 21:*** The County shall support air districts' efforts to reduce PM_{10} and $PM_{2.5}$ emissions.
>
> ***Policy 23:*** The County shall continue to implement the local government control measures in coordination with the Kern Council of Governments and the San Joaquin Valley Unified Air Pollution Control District.

San Bernardino County

The San Bernardino County General Plan contains the following policies that pertain to air quality (San Bernardino County 2020).

> ***Policy NR-1.3:*** Coordination on air pollution. We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.
>
> ***Policy NR-1.5:*** Sensitive land uses. We consider recommendations from the California Air Resources Board on the siting of new sensitive land uses and exposure to specific source categories.
>
> ***Policy NR-1.6:*** Fugitive dust emissions. We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.

Policy NR-1.8: Construction and operations. We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.

City of California City

The City of California City General Plan contains the following policies that pertain to air quality (City of California City 2009):

> Cooperate with the Kern County Air Pollution Control District (APCD) to implement the APCD's Air Quality Attainment Plan.
>
> Continue to enforce the City's grading Code, along with dust control and other rules and measures through the Air Pollution Control District to mitigate air quality effects during the construction of new development.

The City of California City General Plan contains the following implementation measures that pertain to air quality (City of California City 2009):

> ***C-6:*** The City shall implement the following measures associated with air pollution emissions from new development proposals in the General Plan Planning Area.
>
> - Evaluate proposals for discretionary projects to ensure that the project complies with air quality standards.
> - For development proposals not subject to discretionary approval or environmental review, an air quality analysis shall be required as a part of the site plan review (DRC [Development Review Committee]) process.
> - For development proposals subject to a discretionary approval (General Plan Amendment, Zone Change, or Subdivision) and environmental review, an air quality analysis shall be required as a part of the environmental review process.
>
> ***C-12:*** The following measures shall be incorporated into new development proposals, as applicable, to address the goals and policies of the General Plan related to air quality. Verification of these measures shall occur during site plan review and building inspection.
>
> - During grading operations, project applicant/developer shall be responsible for the application of water to the development site at least twice daily to mitigate the impact of dust and PM_{10} emissions. Spraying should be sufficient to ensure that soils remain damp, with the frequency of spraying dependent on weather conditions. Graded areas that are to be left undeveloped or unpaved for more than six weeks are to be sufficiently dust controlled through use of an applied surface agent, daily watering, or revegetated.
> - During grading operations, all activity should be restricted to periods of low wind generally considered under 25 miles per hour, to reduce dust emissions.
> - Construction speed limits will be posted at 15 miles per hour. Preparation of roadway surfaces in a phased manner (where segments of the route are graded in succession) will greatly minimize the amount of time the surfaces are left exposed, thereby reducing vehicle-related dust emissions.

3.3.3 Applicant Proposed Measures and Best Management Practices

3.3.3.1 Applicant Proposed Measures

SCE has identified the following Applicant proposed measures (APMs) to minimize impacts of the Project on air quality. The impact analysis assumes that the APMs would be implemented as part of the Project to reduce impacts on air quality as discussed below.

- **APM AIR-1:** Tier 4 Construction Equipment: All construction equipment with rating between 100 and 750 hp will be required to use engines compliant with EPA Tier 4 non-road engine standards. In the event a Tier 4 engine is not available for any off-road construction equipment with rating at or higher than 100 hp, that documentation of the unavailability will be provided.
- **APM AIR-2:** Dust Control: During construction, fugitive dust will be controlled by implementing the following measures:
  - Surfaces disturbed by construction activities will be covered or treated with a dust suppressant or water until the completion of activities at each site of disturbance.
  - Inactive, disturbed (e.g., excavated or graded areas) soil and soil piles will be sufficiently watered or sprayed with a soil stabilizer to create a surface crust or will be covered.
  - Drop heights from excavators and loaders will be minimized to a distance of no more than 5 feet. Vehicles hauling soil and other loose material will be covered with tarps or maintain at least 6 inches of freeboard.
  - Vehicles will adhere to a speed limit of 15 miles per hour on Project-specific construction routes and within temporary work areas.

3.3.3.2 Best Management Practices

SCE has also proposed implementation of best management practices (BMPs) that are based on the California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook* (SCE 2023, 2024). The BMPs listed below are considered part of the Project for the purposes of this CEQA analysis.

Dust

Measures to control migration of fugitive dust would be implemented during construction, consistent with EKAPCD and MDAQMD requirements. Such measures would include but would not be limited to BMP WE-1, intended to manage fugitive dust during Project construction.

- **BMP-WE-1, Wind Erosion Control.** The construction team will apply water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

3.3.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact on air quality if it would:

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

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;

c) Expose sensitive receptors to substantial pollutant concentrations; or

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

3.3.4.1 Eastern Kern County Air Pollution Control District

The EKAPCD *Guidelines for Implementation of CEQA* (EKAPCD 2012) provide air quality significance thresholds for operation of a project but do not include any thresholds for the construction phase of a project. As a result, the following operational threshold values were also used in the evaluation of construction impacts in the EKAPCD area. A project within EKAPCD's jurisdiction would have a significant air quality impact if it would:

- Emit criteria air pollutant emissions from all project sources exceeding the trigger levels in EKAPCD Rule 210.1 of 15 tons per year of PM_{10}, 27 tons per year of SO_2, or 25 tons per year of VOC or NO_X;
- Emit more than 137 pounds per day of NO_X or VOC from motor vehicle trips (indirect sources only);
- Cause or contribute to an exceedance of any CAAQS or NAAQS;
- Exceed the EKAPCD health risk public notification thresholds; or
- Be inconsistent with adopted federal or state air quality attainment plans.

Levels of health risk determined by EKAPCD's Board of Directors to be significant for purposes of AB 2588 public notification are (1) a cancer risk exceeding 10 in 1 million or (2) a ratio of the chronic or acute exposure to the recommended exposure level (referred to as a "hazard index") exceeding 1.0 (EKAPCD 2020).

3.3.4.2 Mojave Desert Air Quality Management District

The MDAQMD *CEQA and Federal Conformity Guidelines* (MDAQMD 2020), adopted in February 2020, provide a framework for preparing air quality evaluations for environmental documents. The guidelines recommend specific criteria and threshold levels for determining whether a project may have a significant adverse air quality impact. The MDAQMD CEQA Guidelines specify that multi-phased projects (e.g., a project with a construction phase and separate operation phase) with phases shorter than 1 year should be compared to the district's daily thresholds. Because the Project's construction phase is anticipated to last more than 1 year, MDAQMD's annual thresholds have been used in this analysis.

For the evaluation of health risk impacts, MDAQMD considers an incremental cancer risk greater than or equal to 10 in a million and/or an acute hazard index (non-cancerous) greater than or equal to 1 to result in a significant impact.

3.3.4.3 Air District Significance Thresholds Applicable to the Project

Table 3.3-4 shows the applicable thresholds that would be applied to both the construction and operation and maintenance (O&M) phases of the Project within the respective jurisdictions of EKAPCD and MDAQMD.

TABLE 3.3-4
APPLICABLE THRESHOLDS OF SIGNIFICANCE

	EKAPCD	MDAQMD
Pollutant	**Annual (tons per year)**	**Annual (tons per year)**
CO	None	100
NO_X	25	25
VOC/ROG	25	25
SO_X	27	25
PM_{10}	15	15
$PM_{2.5}$	None	12

NOTES: CO = carbon monoxide; EKAPCD = Eastern Kern Air Pollution Control District; MDAQMD = Mojave Desert Air Quality Management District; 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; ROG = reactive organic gases; SO_2 = sulfur dioxide; SO_X = oxides of sulfur; VOC = volatile organic compounds

SOURCES: EKAPCD 2012; MDAQMD 2020

3.3.5 Direct and Indirect Effects

3.3.5.1 Approach to the Analysis

Regional Criteria Air Pollutants

Equipment and vehicles used to transport workers, equipment, and materials to and from the Project's construction areas would emit criteria pollutants during the construction phase. In addition, particulate matter emissions would be generated in the form of fugitive dust from ground-disturbing activities and vehicle travel on unpaved roads. Upon the completion of construction, periodic Project-related O&M activities would generate criteria pollutant emissions. These activities are expected to be similar to existing activities at the substations/switchyard, and along other subtransmission and transmission lines in the Project area.

Impacts of the Project's criteria air pollutant emissions on regional air quality were assessed by comparing the estimated emissions from the construction and O&M phases of the Project to applicable emissions thresholds established by EKAPCD and MDAQMD (Table 3.3-4). Project emissions were estimated using the methods consistent with Version 2022.1 of the California Emissions Estimator Model, the emission factors from CARB's Emission Factor (EMFAC) model, and the Swiss Federal Office of Civil Aviation's *Guidance on the Determination of Helicopter Emissions* (FOCA 2015).

Assumptions about construction phasing and schedule, equipment, and vehicular activity that were used in the estimation of emissions were based on Project-specific information provided by SCE. Construction vehicle trip lengths for workers and on-road construction trucks were also provided by SCE. In addition, the estimates assumed the implementation of APM AIR-1 (use of Tier 4 equipment for construction equipment rated between 100 and 750 hp) and APM AIR-2 (dust control measures). Construction equipment emissions were estimated using OFFROAD emission factors, while construction vehicle emissions used EMFAC2021 emission factors. (See Appendix F for the detailed emission estimate calculations.)

Health Risk Assessment

In addition to criteria air pollutants, the Project would generate TACs, primarily DPM emissions from construction equipment and heavy-duty trucks. Based on the locations of sensitive receptors relative to the different Project components and the intensity and duration of construction activities associated with these components, construction at the Project's Cal City Substation was identified as the only Project component that could pose potential health risks to existing sensitive receptors in its vicinity. As shown in Table 3.3-2, the nearest sensitive receptors—single-family residences along Hacienda Boulevard and Mendiburu Road—are approximately 280 feet southeast of anticipated staging activities near the Cal City Substation at Staging Area 1-17. California City High School is approximately 700 feet southwest of the anticipated construction activities that would occur at Staging Area 1-17.

A health risk assessment was conducted by Rincon Consultants to evaluate the potential health risks associated with temporary TAC emissions from construction activities at the Cal City Substation and associated staging areas. The health risk assessment specifically evaluated activities requiring the use of diesel-fueled heavy equipment and trucks, resulting in DPM emissions. The proposed Cal City Substation improvements would be constructed within the jurisdiction of EKAPCD. Concentrations of exhaust PM_{10} emissions (used as a surrogate for DPM emissions[1]) estimated for the evaluation of criteria air pollutants were modeled using the American Meteorological Society/USEPA's Regulatory Model (AERMOD). Because EKAPCD does not have dispersion modeling guidance for AERMOD, guidance from the South Coast Air Quality Management District (SCAQMD) was used.

Site-specific air dispersion modeling was conducted using Lakes Environmental's AERMOD View model (Version 23132). Dispersion modeling was used to characterize DPM emissions from on-site construction activities and on-road construction vehicular activity as ground-level concentrations over the approximately 24-month construction period. Construction activities and staging areas were modeled as area sources in AERMOD; line volume sources were used to represent the construction haul route and on-road mobile equipment route within approximately 1,000 feet from the Cal City Substation. Because construction activities would take place only during daytime hours, the dispersion modeling assumed variable emissions throughout the day, allocating emissions only to the active construction hours of 6 a.m. to 7 p.m. Monday to Saturday.

[1] PM_{10} exhaust contains DPM and other air toxics, so using PM_{10} exhaust as an estimate for DPM emissions is a conservative approach.

A 20-meter by 20-meter receptor grid was used to represent existing residential and school receptors within approximately 1,000 feet of the Cal City Substation and along the haul truck route on Hacienda Boulevard. The model did not apply a flagpole height for receptors, consistent with SCAQMD modeling guidance (SCAQMD 2024).

Meteorological data were used from Edwards Air Force Base, the nearest representative meteorological monitoring station located approximately 15.5 miles southeast of the Cal City Substation. AERMOD's 10-meter National Elevation Dataset data were applied to produce terrain base elevation data for each receptor and source and a hill height scale value for each receptor. AERMOD's urban option was applied based on SCAQMD guidance for eastern Kern County (U.S. Census Bureau 2020; SCAQMD 2024).

Modeled concentrations at receptors were converted to incremental lifetime cancer risk using parameters from the Office of Environmental Health Hazard Assessment's *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015) and SCAQMD's *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act* (SCAQMD 2020). Residential risk factors, which include greater age-sensitive factors from the third trimester to 2 years of age and increased breathing rates, were also applied to the school receptors for a conservative analysis. DPM is not associated with acute health risks; therefore, acute risk was not evaluated (OEHHA and CARB 2023).

The Project's O&M activities and the construction activities for the other Project components (e.g., the subtransmission lines, improvements at the other substations and switchyard) would be much less emissions intensive, or would not last for more than 2 months[2] at any one location, or they would be located farther from sensitive receptors, resulting in lower health risks. Therefore, the health risk analysis of Project O&M and construction of the other components was conducted qualitatively.

3.3.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would conflict with or obstruct implementation of the applicable air quality plan.

Impact 3.3-1: The Project would not conflict with or obstruct implementation of the applicable air quality plans for EKAPCD and MDAQMD. (*Less than Significant*)

Construction

EKAPCD and MDAQMD are the agencies responsible for managing local air quality in the Project area by administering California and federal air pollution control programs and ensuring attainment and maintenance of the ambient air quality standards. The two air districts have established air quality plans to address nonattainment areas in their respective jurisdictions as detailed in Section 3.3.2.3. The air quality plans have been prepared taking into account the latest

[2] Guidance from the Office of Environmental Health Hazard Assessment indicates that a health risk assessment is not required for construction activities lasting less than 2 months.

planning assumptions regarding population, vehicle activity, and industrial activity. They address all existing and forecast ozone precursor–producing activities within the EKAPCD and MDAQMD jurisdictions to achieve attainment and maintenance of the ambient air quality standards.

According to MDAQMD, a project would be considered to not conflict with or delay implementation of any applicable attainment or maintenance plan if it complies with all applicable district rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s). MDAQMD recommends establishing project conformity with the growth forecasts used in the applicable air quality plan by demonstrating that the project is consistent with the land use plan used to generate the growth forecasts (MDAQMD 2020). The EKAPCD *Guidelines for Implementation of the California Environmental Quality Act* do not include specific guidance for evaluating consistency with its air quality plans (EKAPCD 2012).

The Project would not alter the land use plans for the area and would not result in notable population or employment growth beyond what is currently accounted for in the air quality plans. Emissions would be generated by the Project primarily during construction activities and would mostly cease upon the completion of construction. Construction emissions represent a small fraction of the regional emission inventories included in the applicable air quality plans. Project construction would be conducted in compliance with all applicable air district rules and regulations, ensuring that activities would be consistent with air district efforts to achieve attainment and maintenance of the standards. In addition, as shown in Table 3.3-5 under Impact 3.3-2, the Project's criteria air pollutant emissions generated during construction would be less than the significance thresholds for both EKAPCD and MDAQMD. Such emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

The Project's construction emissions would not substantially contribute to regional emissions, would not result in a cumulatively considerable net increase of any criteria pollutant, and would not conflict with the growth projections in the applicable air quality plans. In addition, construction of the Project would be conducted in compliance with applicable air district rules and regulations. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plans, and the impact would be **less than significant**.

Operation and Maintenance

Upon the completion of construction, the Project would generate minimal emissions during O&M activities. The Project's O&M activities would be similar to those currently performed by SCE for existing facilities, such as repairing conductors, washing or replacing insulators, trimming trees, controlling brush and weeds, and maintaining access roads. O&M would also include monthly and annual inspections for testing and maintenance of facilities installed as part of the Project. These activities would require the use of vehicles and equipment, which would generate emissions. However, this increase in O&M emissions associated with the Project would be nominal and well below the applicable significance thresholds of both EKAPCD and MDAQMD (see Table 3.3-6 in Impact 3.3-2). These activities would not result in notable population or employment growth and therefore would represent a minor incremental increase in regional

emissions. These emissions would not affect the air districts' efforts to achieve attainment and maintenance of the standards. Therefore, the O&M impact of the Project would be **less than significant**.

Mitigation: None required.

Criterion b) Whether the Project would result in a cumulatively considerable net increase of a criteria air pollutant for which the region is in nonattainment status.

Impact 3.3-2: The Project would result in a net increase of criteria pollutants for which the project region is nonattainment under an applicable federal or state ambient air quality standard. (*Less than Significant*)

CEQA defines *cumulative impacts* as two or more individual impacts that, when considered together, are either significant or "cumulatively considerable," meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

By its very nature, air pollution is largely a cumulative impact. No single project would likely be sufficient in size, by itself, to result in nonattainment of the regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development within the MDAB. The nonattainment status of the MDAB with respect to regional pollutants is a result of past and present development. Future attainment of the state and federal ambient air quality standards is a function of successful implementation of EKAPCD and MDAQMD attainment plans. Consequently, EKAPCD's and MDAQMD's application of thresholds of significance for criteria pollutants is a relevant way to determine whether a project's individual emissions would have a cumulatively significant impact on air quality.

Construction

The Project's construction activities would require the use of off-road construction equipment, on-road vehicles, and helicopters, which would generate criteria air pollutants that could contribute to violations of the ambient air quality standards for ozone and PM_{10}. **Table 3.3-5** summarizes the anticipated emissions, by air district, that would occur during each calendar year of construction and compares them to the applicable significance thresholds. The emissions estimates were modeled based on the incorporation of APM AIR-1, which would reduce emissions of criteria air pollutant exhaust from the use of off-road equipment and on-road vehicles, and of APM AIR-2, which would reduce fugitive dust emissions.

As shown in Table 3.3-5, estimates of all construction-related criteria air pollutant emissions generated within each jurisdiction would be below the respective significance thresholds. Although SCE has committed in APM AIR-1 to using Tier 4–compliant construction equipment for all equipment with ratings between 100 and 750 hp, and this was assumed in the emissions modeling (Table 3.3-5), the potential exists for some of the required Tier 4 compliant equipment

to be unavailable at the time of construction. However, review of the "uncontrolled" construction emissions estimates (Appendix F) indicates that even without implementation of APM AIR-1, all construction-related criteria air pollutant emissions generated within each jurisdiction would be below the respective significance thresholds.

TABLE 3.3-5
ANNUAL CRITERIA POLLUTANT EMISSIONS DURING CONSTRUCTION

Construction Year	Annual Emissions (tons per year)					
	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Eastern Kern Air Pollution Control District						
2026	1.11	5.28	17.73	0.05	11.87	1.58
2027	1.31	4.06	15.41	0.04	9.42	1.23
2028	0.04	0.37	0.83	0.002	0.84	0.11
Significance Threshold	25	25	—[a]	27	15	—[a]
Significant?	No	No	—	No	No	—
Mojave Desert Air Quality Management District						
2026	0.45	2.01	6.44	0.02	4.31	0.58
2027	0.57	1.73	6.12	0.01	3.7	0.49
2028	0.01	0.09	0.17	<0.001	0.19	0.02
Significance Threshold	25	25	100	25	15	12
Significant?	No	No	No	No	No	No

NOTES: CO = carbon monoxide; EKAPCD = Eastern Kern Air Pollution Control District; NO_X = oxides of nitrogen; 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; ROG = reactive organic gases; SO_2 = sulfur dioxide

a. EKAPCD has not adopted significance thresholds for CO and $PM_{2.5}$.

SOURCES: Table compiled by Environmental Science Associates in 2024, based on Tables 38 and 39 of Appendix F.

Therefore, construction of the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment status under an applicable federal or state ambient air quality standard. The cumulative impact with respect to criteria air pollutant emissions would be less than significant.

Operation and Maintenance

O&M activities associated with the Project would be similar to those currently performed by SCE for existing substations and their associated lines and infrastructure. The Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips, which would result in an incremental increase in O&M emissions. **Table 3.3-6** summarizes the anticipated annual O&M emissions by air district and compares them to the applicable thresholds.

As shown in Table 3.3-6, anticipated annual emissions from routine O&M activities would be well below all applicable thresholds. Therefore, Project O&M activities would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment status under an applicable federal or state ambient air quality standard. The cumulative impact with respect to criteria air pollutant emissions would be less than significant.

TABLE 3.3-6
ANNUAL CRITERIA POLLUTANT EMISSIONS DURING OPERATION AND MAINTENANCE

	Annual Emissions (tons per year)					
	ROG	**NOx**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Eastern Kern Air Pollution Control District						
O&M Emissions	0.001	0.007	0.009	<0.001	0.001	0.001
Significance Threshold	25	25	—[a]	27	15	—[a]
Significant?	No	No	—	No	No	—
Mojave Desert Air Quality Management District						
O&M Emissions	0.001	0.007	0.009	<0.001	0.001	0.001
Significance Threshold	25	25	100	25	15	12
Significant?	No	No	No	No	No	No

NOTES: CO = carbon monoxide; EKAPCD = Eastern Kern Air Pollution Control District; NO_X = oxides of nitrogen; O&M = operation and maintenance; 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; ROG = reactive organic gases; SO_2 = sulfur dioxide

a. EKAPCD has not adopted significance thresholds for CO and $PM_{2.5}$.

SOURCES: Table compiled by Environmental Science Associates based on Table 32 of Appendix F.

Health Effects of Criteria Pollutants

The health effects from emissions of criteria pollutants are described above in Section 3.3.1.1, *Criteria Air Pollutants*. Compliance with the ambient air quality standards indicates that regional air quality can be considered protective of public health.

As discussed above, Project construction and O&M activities would not result in emissions that would exceed the EKAPCD or MDAQMD annual emissions thresholds for any of the air pollutants. As mentioned previously, these thresholds are established at health protective levels and include an adequate margin of safety. Therefore, Project construction and O&M activities are not anticipated to result in an adverse health effect with respect to emissions of criteria air pollutants. The impact would be less than significant.

Mitigation: None required.

Criterion c) Whether the Project would expose sensitive receptors to substantial pollutant concentrations.

Impact 3.3-3: The Project would expose sensitive receptors to pollutant concentrations. (*Less than Significant*)

Construction

Cal City Substation Improvements

Maximum health risks from Project construction activities at the Cal City Substation and associated staging areas are presented in **Table 3.3-7**. The Maximally Exposed Individual Receptor (MEIR) is the modeled receptor that would experience the highest incremental excess cancer risk over the

total exposure duration, estimated to be 24 months. The MEIR was determined to be a single-family residence along Hacienda Boulevard approximately 280 feet south of the Project's construction area. The model outputs and health risk analysis supporting this determination are presented as part of Appendix F.

TABLE 3.3-7
MAXIMUM HEALTH RISKS ASSOCIATED WITH CONSTRUCTION ACTIVITIES AT THE CAL CITY SUBSTATION

	Excess Cancer Risk (# per million)	Chronic Hazard Index (unitless)
MEIR along Hacienda Boulevard	5.84	0.014
EKAPCD Significance Threshold	10	1
Threshold Exceeded?	No	No

NOTES: EKAPCD = Eastern Kern Air Pollution Control District; MEIR = Maximally Exposed Individual Receptor
SOURCE: Table 3 of the Cal City Substation 115 kV Upgrade Project Construction Health Risk Assessment in Appendix F

As shown in Table 3.3-7, the cancer risk and chronic hazard index at the MEIR would be below EKAPCD health risk thresholds. Risks shown include DPM reductions from implementation of APM AIR-1 as part of the Project. APM AIR-1 requires all construction equipment with ratings between 100 and 750 hp to use engines compliant with USEPA's Tier 4 non-road engine standards, which would substantially reduce DPM exhaust emissions from construction equipment.

As shown in Table 3.3-7, estimated maximum health risks from construction activities at the Cal City Substation and associated staging areas would be below the respective EKAPCD thresholds. Although SCE has committed in APM AIR-1 to using Tier 4 compliant construction equipment for all equipment with ratings between 100 and 750 hp, and this was assumed as an associated reduction in TAC emissions in the health risk assessment (Table 3.3-7), the potential exists for some of the required Tier 4 compliant equipment to be unavailable at the time of construction. However, even without implementation of APM AIR-1, the excess cancer risk would be 8.15 per million and the chronic hazard index would be 0.014 (see Appendix F.2, Table 2), which would be below the respective significance thresholds. Therefore, this impact would be **less than significant**.

Other Project Components

Construction activities related to other Project components, including work at existing substations/switchyard and transmission lines, are expected to generate fewer emissions of TACs at any single sensitive receptor location and would be located farther from sensitive receptors than the Cal City Substation and associated staging areas. Furthermore, construction activities at the existing Kramer Substation, Edwards Substation, and Holgate Switchyard would be of shorter duration because, unlike the Cal City Substation, none of these existing SCE facilities would be expanded. Construction activities associated with transmission lines would be linear, progressing along the alignment, and would not expose any one receptor to emissions for more than a few weeks. Therefore, health risk impacts associated with construction at the other components would be **less than significant**.

Operation and Maintenance

Typical O&M activities would last less than a single day at each location and SCE currently conducts these activities at the four existing substations/switchyards associated with the Project. Given the minimal emissions that would be associated with O&M activities (shown in Table 3.3-6) at each location, the Project health risk impacts would be less than significant.

Mitigation: None required.

Criterion d) Whether the Project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Impact 3.3-4: The Project would result in emissions (such as those leading to odors) that could adversely affect people. (*Less than Significant*)

Construction

Because of the nature of the Project, impacts resulting from other emissions, such as odors, are unlikely. Typical nuisances include odor-producing hydrogen sulfide, ammonia, chlorine, diesel engine emissions, and other sulfide-related emissions. No significant sources of these pollutants would exist during construction. Diesel-engine emissions and the accompanying odor would be short term, would be isolated to the immediate area surrounding the Project's temporary construction areas and access roads, would be intermittent, would disperse quickly, and would cease upon completion of construction. As described in Section 3.3.1.5, *Sensitive Receptors*, there are limited sensitive receptors in the vicinity of the planned construction activities.

Emissions and associated odors would be temporary and would disperse rapidly with distance from the source, and the majority of construction activities would occur in unoccupied open areas. Therefore, construction-generated emissions would not result in the frequent or long-term exposure of a substantial number of people to objectionable emissions and odors, and this impact would be **less than significant**.

Operation and Maintenance

As described previously, the Project's O&M activities would be similar to those currently performed by SCE for existing substations and their associated lines and infrastructure. The Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. Potential emission sources associated with O&M activities would be limited, with the most likely source being diesel engine emissions and accompanying odors. These emissions would be short term, limited to the location of the O&M activity, and intermittent; would disperse quickly; and would cease upon completion of the O&M activity at a given location.

Emissions would be temporary and would disperse rapidly with distance from the source, and the majority of O&M activities would occur in unoccupied open areas. Therefore, O&M-generated emissions and odors would not result in the frequent or long-term exposure of a substantial number of people to objectionable odorous emissions, and this impact would be **less than significant**.

Mitigation: None required.

Impact 3.3-5: Construction activities associated with the Project would expose local sensitive receptors to *Coccidioides immitis* spores. (*Less than Significant*)

Construction activities that would include ground disturbance in the Kern County portion of the Project area would have the potential to release *Coccidioides immitis* spores, which can cause Valley Fever. However, much of the population of Kern County has likely already been exposed to Valley Fever and would be exposed further, given the earthmoving activities that have occurred historically and are continuing during agricultural and construction activities throughout the region. With the endemic nature of the disease and the ongoing earthmoving activities in the area, new cases of Valley Fever are documented each year; however, many people who are exposed do not develop symptoms (CDPH 2021).

The Project's construction activities would include localized ground-disturbing activities similar to those that continually occur within Kern County, and the Project would not result in a substantial increase in spores released. In addition, based on an analysis by the Centers for Disease Control and Prevention and U.S. Geological Survey of the Valley Fever outbreak associated with the January 1994 Northridge earthquake (USGS and CDC 1998), a major ground-disturbing event (e.g., another major earthquake) would have to occur to release a large enough number of spores over a wide area for a significant outbreak of Valley Fever to occur. Construction of the Project would not be a major ground-disturbing event that could release a large number of spores.

As described in Section 3.3.1.5, *Sensitive Receptors*, there would be limited sensitive receptors in the immediate vicinity of the planned construction activities. Valley Fever is a risk for anyone living or working in the Project vicinity, but the Project would not increase this risk for a substantial number of existing residences. However, for the construction workers and other Project personnel who would be on-site during times of dust transport in Kern County, risk to their health is a concern because they would be closer to potential sources of the spores and could be exposed for longer periods of time.

The Project activities that would result in the greatest risk would be those involving the excavation and transport of soils, such as grading and trenching. These activities, along with localized wind conditions, create the work conditions with the highest risk. According to CDPH, avoiding working in soils and dusty conditions is the best preventive measure. Because some construction workers cannot avoid participating in soil disturbance activities, minimizing fugitive dust as well as other engineering controls become the primary preventive measures. Pursuant to AB 203, SCE would be required to provide effective awareness training on Valley Fever to all employees annually and before employees begin work in Kern County that is reasonably anticipated to cause substantial dust disturbance. In addition, the CDPH Occupational Health Branch makes recommendations for the protection of workers. The primary protection measures relate to worker training, dust suppression, and personal protective equipment. With respect to dust suppression, implementation of APM AIR-2 would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible. Therefore, the impact of construction activities related to potential exposure of local sensitive receptors and Project construction workers to *Coccidioides immitis* spores would be **less than significant**.

Mitigation: None required.

3.3.5.3 Cumulative Effects Analysis

The geographic scope considered for potential cumulative impacts on regional air quality is the MDAB, which in the Project area is governed by rules and plans adopted by EKAQMD and MDAPCD to achieve ambient air quality standards. The MDAB is currently classified as nonattainment for the ozone and PM_{10} standards. Therefore, there is an existing adverse cumulative impact in the MDAB relative to these pollutants. The geographic scope considered for potential cumulative impacts on sensitive receptors is sensitive receptors within 1,000 feet of the Project if the sensitive receptors are also within 1,000 feet of a cumulative project. There is one cumulative project described in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, that meets these criteria referred to as the Battery Energy Storage System (BESS) project. The temporal scope considered for potential cumulative impacts to air quality are the same general construction and operational timeframes of the Project.

Criterion a)

Impact C.3.3-1: The Project impact of conflicting with or obstructing implementation of the applicable air quality plans for EKAPCD and MDAQMD would not be cumulatively considerable. (*Less than Significant*)

Impact 3.3-1 addresses potential impacts of the Project related to consistency with air quality plans adopted by EKAPCD and MDAQMD. Because air quality plans focus on improving regional air quality and reducing population exposure to air pollutants throughout the region, the assessment under Impact 3.3-1 is a cumulative analysis in itself, as it evaluates consistency with regionwide air quality plans. Therefore, a separate cumulative assessment of consistency with air quality plans for the area is not required.

Projects generating emissions of ozone precursors (NO_X or ROG) and PM_{10} in excess of threshold levels would further degrade regional air quality. Impact 3.3-2 evaluates whether the Project's contribution to this significant cumulative impact would be considerable by comparing Project-generated emissions to the applicable EKAPCD and MDAQMD significance thresholds. The project-level criteria air pollutant thresholds set by air districts are generally based on levels below which new sources would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is nonattainment of ambient air quality standards. Therefore, a less-than-significant project-level impact also implies that the Project's contribution to the cumulative regional air quality impact would be less than significant. The Project would not result in a cumulatively considerable contribution to nonattainment criteria pollutants, as evaluated under Impact 3.3-1. Therefore, the cumulative impact associated with conflicting with or obstructing implementation of the applicable air quality plans would be less than significant.

Mitigation: None required.

Criterion b)

Impact C.3.3-2: The Project impact of generating a net increase of criteria pollutants for which the Project region is nonattainment under an applicable federal or state ambient air quality standard would not be cumulatively considerable. (*Less than Significant*)

As described above in Impacts 3.3-2 and C.3.3-1, the Project would not result in a cumulatively considerable contribution to nonattainment criteria pollutants. Therefore, The Project impact of generating a net increase of criteria pollutants for which the Project region is nonattainment under an applicable federal or state ambient air quality standard would not be cumulatively considerable, and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion c)

Impact C.3.3-3: The Project impact of exposing sensitive receptors to pollutant concentrations would not be cumulatively considerable. (*Less than Significant*)

The Project would generate TAC emissions primarily as DPM from construction activities that would contribute to cumulative health risk impacts at receptors in the vicinity. This impact, combined with existing background health risks and DPM emissions from construction and operation of the cumulative sources and projects, could result in a significant cumulative health risk impact.

There are four cumulative projects described in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, that are within the immediate vicinity of the Project and may be constructed at the same time as the Project, including the BESS, Aratina Solar Center, Transmission Line Easement at Edwards Air Force Base, and SCE's Ivanpah-Control projects. The Aratina Solar Center, Transmission Line Easement at Edwards Air Force Base, and SCE's Ivanpah–Control projects are not located near any sensitive receptors; however, the BESS may be located within several hundred feet of residences southeast of Cal City Substation. The BESS will be approximately 3 megawatts and has a targeted operating date of 2025, which would not meet the temporal scope for cumulative construction impacts; however, the operation date has not been confirmed so it is assumed that the BESS construction could occur at the same time as the Project. It is anticipated that the BESS would be much smaller in scale than the proposed Cal City Substation improvements. There are no other known sources of health risk in the vicinity of the Project's MEIR. EKAPCD does not have recommended cumulative health risk thresholds. Therefore, EKAPCD's project-level thresholds were used as indicators of the Project's contribution to the cumulative health risk impact.

As described in Impact 3.3-3, the Project's construction activities for the Cal City Substation improvements and associated staging areas would result in risk levels that would not be considered significant. Therefore, it can be concluded that the Project's contribution to the health risk would not be cumulatively considerable, and the cumulative health risk impact would be **less than significant**.

Mitigation: None required.

Criterion d)

Impact C.3.3-4: The Project impact of emissions (such as those leading to odors) adversely affecting people would not be cumulatively considerable. (*Less than Significant*)

The Project does not propose any land uses that could be considered as sources of odor. Odor impacts of the Project would be primarily from diesel exhaust from construction equipment and trucks, which would be localized to the construction area. As described above, under Criterion a), the only identified cumulative project in the immediate vicinity of the Project and existing residences that may be constructed at the same times as the Project is the BESS project. Given the small scale of the BESS, it is not anticipated that Project emissions would combine with any odor sources from the BESS for a cumulative impact. Therefore, the Project odor impact would not be cumulatively considerable and the cumulative impact with respect to odors would be less than significant.

Mitigation: None required.

Impact C.3.3-5: The Project impact of exposing local sensitive receptors to *Coccidioides immitis* spores would not be cumulatively considerable. (*Less than Significant*)

Although there is an existing adverse cumulative Valley Fever impact in Kern County, implementation of fugitive dust control measures required by APM AIR-2 would reduce exposure to *Coccidioides immitis* spores that cause Valley Fever. In addition, SCE would be required to ensure that all independently enforceable protections of worker safety and health are in place and implemented pursuant to AB 203. As described above, under Criterion a), the only identified cumulative project in the immediate vicinity of the Project and existing residences that may be constructed at the same time as the Project is the BESS project. Given the fugitive dust control measures that would be implemented as part of the Project and the small scale of the BESS, the Project's incremental contribution to cumulative Valley Fever-related impacts would not be considerable, and the cumulative impact would be less than significant.

Mitigation: None required.

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3.4 Biological Resources

This section describes the existing biological resources identified or presumed to occur in the Project area and evaluates the impacts of the Project on those resources. It presents information about the environmental and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The information and analysis presented are based in part on the biological resources section of Southern California Edison's (SCE's) *Cal City Substation 115 kV Upgrade Project Proponent's Environmental Assessment*, the *Cal City Substation 115 kV Upgrade Project Biological Resources Technical Report* included in **Appendix G**, *Biological Resources Technical Report*, and updated biological resources survey information provided by SCE.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) received scoping comments pertaining to biological resources from the California Department of Fish and Wildlife (CDFW), which noted a number of special-status species that occur or may be present in the biological study area and included recommendations for surveys and habitat assessments to determine whether suitable habitat is present in the Project area.

State-listed or federally listed endangered or threatened species and current candidates for listing species that were noted by CDFW included Crotch's bumble bee (*Bombus crotchii*), desert tortoise (*Gopherus agassizii*), Swainson's hawk (*Buteo swainsoni*), Mohave ground squirrel (*Xerospermophilus* mohavensis), western burrowing owl (*Athene cunicularia*), and several non-listed species of special concern, as well as the state fully protected golden eagle (*Aquila chrysaetos*). CDFW also recommended consideration for desert kit fox (*Vulpes macrotis arsipus*) and American badger (*Taxidea taxus*), which are protected under the California Fish and Game Code.

CDFW also recommended that focused surveys be conducted for the state candidate western Joshua tree (*Yucca brevifolia*) and other special-status plants; that the Draft EIR include measures to avoid, minimize, and/or mitigate impacts on riparian and wetland habitats; and that the EIR adequately describe the Project and its impacts on lakes or streams. CDFW recommended that the analysis evaluate Project features relative to habitat connections and wildlife movement pathways in the Project area and assess Project alternatives and cumulative impacts. CDFW also provided recommendations to comply with federal and state regulations that protect nesting birds.

3.4.1 Introduction

3.4.1.1 Regional Setting

The Project area is in the northwestern part of the Mojave Desert region of California, just north of State Route (SR) 58 and to the west of U.S. Highway 395 (U.S. 395). The Project elements would be implemented on federal lands managed by the U.S. Bureau of Land Management (BLM) and the U.S. Department of Defense at Edwards Air Force Base; state lands managed by

CDFW and the California Department of Transportation; county and city lands managed by Kern County, San Bernardino County, or the City of California City; private lands; and lands owned and managed by SCE. The various elements of the Project are described in Chapter 2, *Project Description*.

3.4.1.2 Biological Study Area

The biological study area (study area) analyzed in the Biological Resources Technical Report (SCE 2023a) (Appendix G to this Draft EIR) includes all Project disturbance areas plus buffers, as follows. A 100- to 200-foot buffer was applied for the aquatic resources delineation and a minimum 250-foot buffer was used for the habitat assessment, vegetation community mapping, and rare-plant surveys. The buffer areas extend away from the substation sites and work areas and out on either side of the proposed 115-kilovolt (kV) subtransmission line alignments, including associated work areas. Where the Project alignment parallels U.S. 395, biological surveys were only performed west of the highway because no activities are proposed that would affect the area east of the highway. The study area totals 5,687 acres.

3.4.2 Environmental Setting

This section describes the existing biological resources in the vicinity of the Project elements, which include the proposed subtransmission lines, substation improvements, and related facilities. The setting information presented herein was compiled from available database searches, scientific literature, and Project-specific survey data as well as survey data collected for previous projects. Specific sources used to describe biological resources and to evaluate biological impacts of the Project include the following:

- California Natural Diversity Database (CNDDB) (CDFW 2025a).
- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2025a).
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (USFWS 2025a).
- USFWS Critical Habitat Portal (USFWS 1994, 2025b).
- *Cal City Substation 115 kV Upgrade Project Biological Resources Technical Report* (SCE 2023a) (Appendix G to this Draft EIR).
- Section 5.4, *Biological Resources*, of the *Cal City Substation 115 kV Upgrade Project Proponent's Environmental Assessment* (SCE 2023b).
- Survey data from previously conducted general biological surveys, habitat assessments, and focused surveys, as described in the Proponent's Environmental Assessment (PEA) and Biological Resources Technical Report, as well as supplemental survey data and reports from focused surveys conducted for SCE in 2023 and 2024. Biological survey efforts are listed in **Table 3.4-1**.

TABLE 3.4-1
BIOLOGICAL SURVEYS CONDUCTED WITHIN THE STUDY AREA

Biological Survey by Project Component	Survey Year[1]	Survey Dates
Vegetation Community Mapping		
Kramer–Cal City 115 kV Subtransmission Line alignment along U.S. 395	2017	April 3–18
Kramer–Cal City 115 kV Subtransmission Line alignment along U.S. 395	2018	April 2–6
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation	2021	September 20–24, October 25–29, December 13–16
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation	2022	September 27–28, October 26–27
Habitat Assessment		
Kramer–Cal City 115 kV Subtransmission Line alignment along U.S. 395	2017	May 13
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation	2021	September 27–30, October 1, October 11–14, October 19
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation	2022	April 11–16, September 27–28, October 26–27
Jurisdictional Delineation		
Kramer–Cal City 115 kV Subtransmission Line alignment along U.S. 395	2017	March 13–31
Kramer–Cal City 115 kV Subtransmission Line alignment along U.S. 395	2018	May (specific features only)
Aquatic Resources Delineation		
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation	2021	September 20–24, October 18–19, December 13–15
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation	2022	September 27–28, October 26–27
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation	2024	January 23–26, January 29–31, February 13–16, February 27–29
Rare-Plant Surveys		
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line	2022	March 24–April 16, September 27–28, October 26–28
Targeted Milkweed Surveys (Monarch Butterfly Host Plant)		
Kramer–Cal City 115 kV Subtransmission Line (U.S. 395 to Cal City Substation)	2025	Summer/fall
Focused Barstow Woolly Sunflower Rare-Plant Survey		
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation, Edwards Substation, Holgate Switchyard, Kramer Substation	2022 (habitat assessment), 2023 (focused surveys)	April 10–20
Desert Tortoise Surveys		
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation, Edwards Substation, Holgate Switchyard, Kramer Substation	2024	April 22–25, April 27–May 5, May 13–17, May 20–24, May 27–June 1

Biological Survey by Project Component	Survey Year[1]	Survey Dates
Burrowing Owl Surveys and Habitat Assessments		
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation, Edwards Substation, Holgate Switchyard, Kramer Substation	2024	March 4–8, March 11–15, March 18–27, April 23–25, April 27, April 29–May 2, June 3–4, July 9–11
Joshua Tree Surveys		
Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer–Cal City 115 kV Subtransmission Line, Cal City Substation, Edwards Substation, Holgate Switchyard, Kramer Substation	2024	March 4–8, March 11–15, March 18–28

NOTES: kV = kilovolt; U.S. 395 = U.S. Highway 395

1. Surveys conducted prior to 2021 on the Kramer–Cal City 115 kV Subtransmission Line alignment near U.S. 395 were for the proposed SCE Ivanpah-Control Project. The findings of regulated biological resources remain relevant to the current analysis.

SOURCES: Artemis Environmental Services 2024a, 2024b, 2024c, 2024d; SCE 2023a, 2023b; SummitWest Environmental 2023.

3.4.2.1 Vegetation Communities and Land Cover Types

Vegetation communities are assemblages of plant species that occur together in the same area and are defined by species composition and relative abundance. Vegetation communities were mapped within the study area based on the systems provided in *A Manual of California Vegetation, Second Edition* (CNPS 2025b). The vegetation communities and land cover types that occur in the study area are listed in **Table 3.4-2**. Only alliances (i.e., broad vegetation classification categories) and CDFW-recognized sensitive natural community associations are included in this EIR.

Mapping the identified plant communities and land cover types at a readable scale requires many pages to show the entire study area along the proposed subtransmission alignments; therefore, such mapping is not included in this EIR section. See the Biological Resources Technical Report, incorporated herein by reference, and which is included as Appendix G to this Draft EIR (SCE 2023a). A map showing the plant communities in the study area is included as Appendix H to the Biological Resources Technical Report. More information regarding the mapped natural communities is presented in the Biological Resources Technical Report (Appendix G) along with detailed descriptions of each vegetation community.

3.4.2.2 Special-Status Species

The term *special-status species* refers to plant and wildlife species that are considered sufficiently rare that they require special consideration and/or protection and should be, or currently are, listed as rare, threatened, or endangered by the federal and/or state governments. Such species are legally protected under the federal Endangered Species Act (FESA) and/or California Endangered Species Act (CESA) or other regulations or are species that are considered sufficiently rare by the regulatory and scientific community to qualify for protection. Special-status species include the following:

- Species listed or proposed for listing as threatened or endangered under FESA (Code of Federal Regulations [CFR] Title 50, Section 17.12 [listed plants] and Section 17.11 [listed animals] and various notices in the *Federal Register* [proposed species]).
- BLM sensitive species, which in addition to the above includes species on BLM lands that require special management consideration to promote BLM conservation and reduce the likelihood of listing under FESA (BLM Manual Section 6840).

TABLE 3.4-2
NATURAL COMMUNITIES AND LAND COVER IN THE BIOLOGICAL STUDY AREA

Alliance	Sensitive?[1]	Approximate Acreage within the Study Area	Percent of Total Land Cover
Natural Communities			
Creosote Bush Scrub Alliance	N	1,693.98	29.8
Creosote Bush–White Bursage Scrub Alliance	N	974.42	17.1
Allscale Scrub Alliance	N	1,066.47	18.8
Cheesebush–Sweetbush Scrub Alliance	N	88.47	1.6
California Buckwheat–Parish's Goldeneye Scrub Alliance	N	85.60	1.5
Fourwing Saltbush Scrub Alliance	N	18.13	0.3
Rubber Rabbitbush Scrub Alliance	N	3.59	<0.1
Spinescale Scrub Alliance	Y	710.90	12.5
White Bursage Scrub Alliance	Y	130.14	2.3
Winterfat Scrubland Alliance	Y (S3)	71.23	1.3
Shadscale Scrub Alliance	N	19.84	0.4
Nevada Joint Fir–Anderson's Boxthorn–Spiny Hop Sage Scrub Alliance	Y (S3, S4)	105.12	1.9
Subtotal	**–**	**4,967.87**	**87.5**
Land Cover Types			
Developed	–	619.86	10.9
Disturbed	–	65.04	1.1
Dry Lake/Mudflats/Playa	–	33.92	0.6
Open Water	–	0.07	<0.1
Streambed	–	0.86	<0.1
Subtotal		**719.75**	**12.6**
TOTAL		***5,687.63***	***100.0***

NOTES: Communities were categorized only to the alliance level when (1) all associations are California Department of Fish and Wildlife (CDFW) sensitive natural communities, (2) the alliance contains no CDFW sensitive natural communities, or (3) all CDFW sensitive natural communities were determined to be absent.

1. Natural communities with ranks of S1–S3 are considered Sensitive Natural Communities to be addressed in the CEQA environmental review process. For alliances with state ranks of S1–S3, all associations within them are considered sensitive. Note that alliances that are not considered sensitive may contain associations that are considered sensitive (CDFW 2024a).

SOURCE: SCE 2023a.

- Species that are designated as candidates for possible future listing as threatened or endangered under FESA (*Federal Register* Volume 61, Number 40, Pages 7419–7421, February 28, 1996).
- Species listed by the State of California as threatened or endangered under CESA, and state candidates for listing (California Code of Regulations Title 14, Section 670.5).
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.).
- Species designated by CDFW as California Species of Special Concern.

- Animals designated as Fully Protected under California Fish and Game Code Sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians).
- Species that meet the definitions of *rare* and *endangered* under CEQA. CEQA Section 15380 provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists (CEQA Guidelines Section 15380).
- Plants considered by CDFW and the CNPS to be "rare, threatened or endangered in California" (California Rare Plant Ranks 1A, 1B, and 2).

Comprehensive lists of special-status plants and wildlife species that could occur in the study area were compiled based on literature reviews, database searches, and field surveys. For each species, the analysis considered the likelihood of the species' occurrence and potential impacts of the Project on the species. **Figure 3.4-1**, *Special-Status Plant and Wildlife Species Observations Overview*, depicts the overall Project area, including the substation locations and subtransmission alignments, and serves as a reference showing how the Project area is divided into six sectional areas that are depicted on the subsequent sets of enlarged special-status species observation figures. **Figures 3.4-2a** through **3.4-2f**, *Special-Status Plant Species Observations*, show locations where special-status plant species were observed during surveys conducted in 2021–2022, as described in the Applicant's PEA, and also show where special-status plants were identified during focused surveys in 2024. **Figures 3.4-3a** through **3.4-3f**, *Special-Status Wildlife Species Observations (2021–2022)*, show where special-status wildlife species were observed during surveys described in the PEA; and **Figures 3.4-4a** through **3.4-4f**, *Special-Status Wildlife Species Observations (2024)*, identify the observed locations of special-status wildlife found during 2024 focused surveys.

Plants

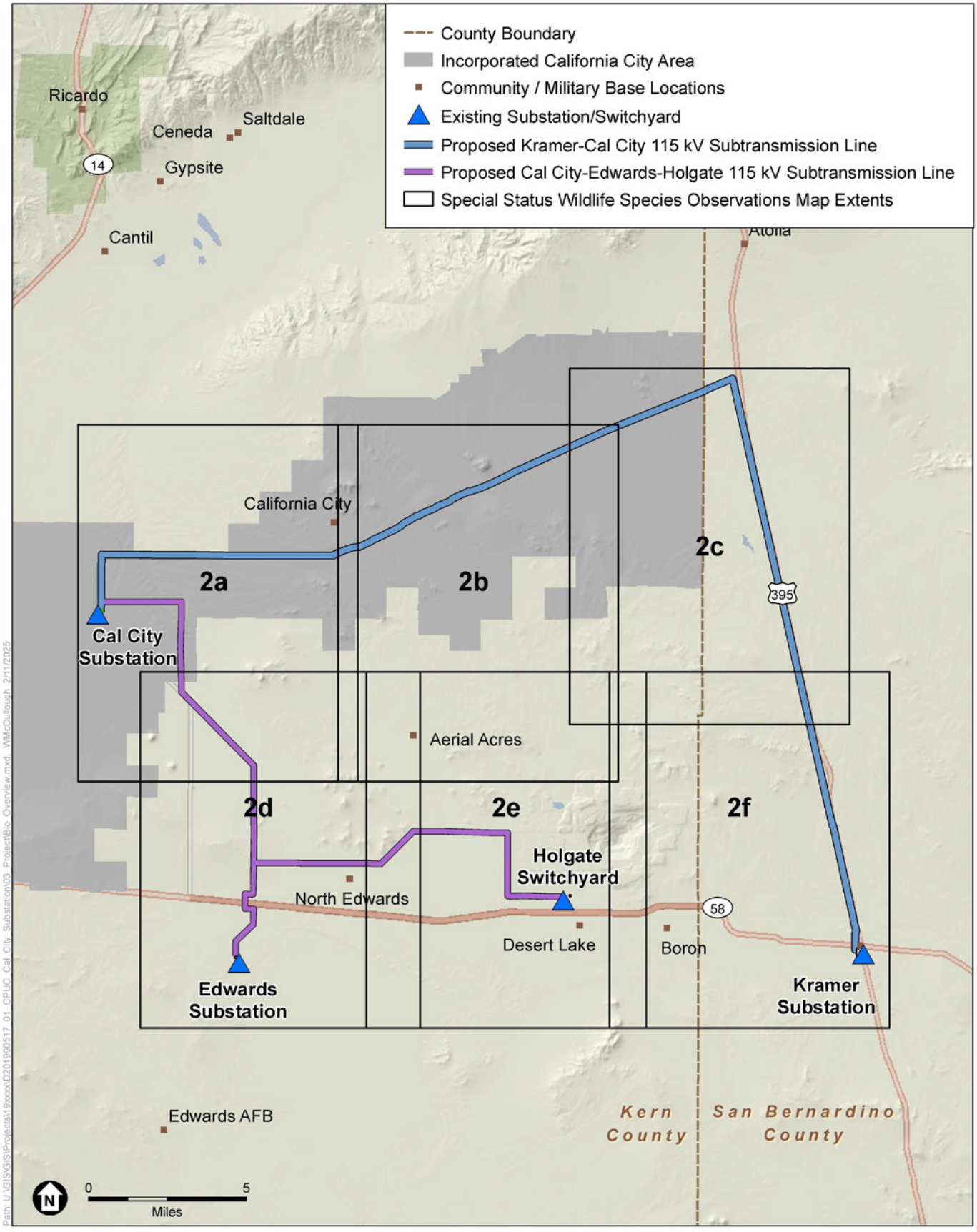
The Biological Resources Technical Report describes those special-status plant species that were evaluated for potential to occur within the study area. The five species present in the study area are listed in **Table 3.4-3**. Locations where these species were observed within the study area during surveys in 2021–2022 or during subsequent surveys conducted specifically for Barstow woolly sunflower (*Eriophyllum mohavense*; 1B.2) in 2023 and western Joshua tree in 2024 are shown in Figures 3.4-2a through 3.4-2f, *Special-Status Plant Species Observations*. The remaining plant species were determined to be absent or not likely to occur in the study area (SCE 2023a).

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES PRESENT WITHIN THE BIOLOGICAL STUDY AREA

Species	Status
pink funnel lily (*Androstephium breviflorum*)	CRPR 2B.2
Mojave spineflower (*Chorizanthe spinosa*)	CRPR 4.2
desert cymopterus (*Cymopterus deserticola*)	CRPR 1B.2, S
Barstow woolly sunflower (*Eriophyllum mohavense*)	1B.2, S
western Joshua tree (*Yucca brevifolia*)	SC, S

STATUS DEFINITIONS: CRPR = California Rare Plant Rank (*Ranks:* CRPR 1B = Plants rare, threatened, or endangered in California and elsewhere; CRPR 2B = Plants rare, threatened, or endangered in California, but common elsewhere; CRPR 4 = Plants of limited distribution, a watch list; *Threat Code extensions* = 0.2 - Moderately threatened in California [20-80 percent occurrences threatened / moderate degree and immediacy of threat]); S = U.S. Bureau of Land Management–designated "Sensitive"; SC = state candidate for listing as threatened

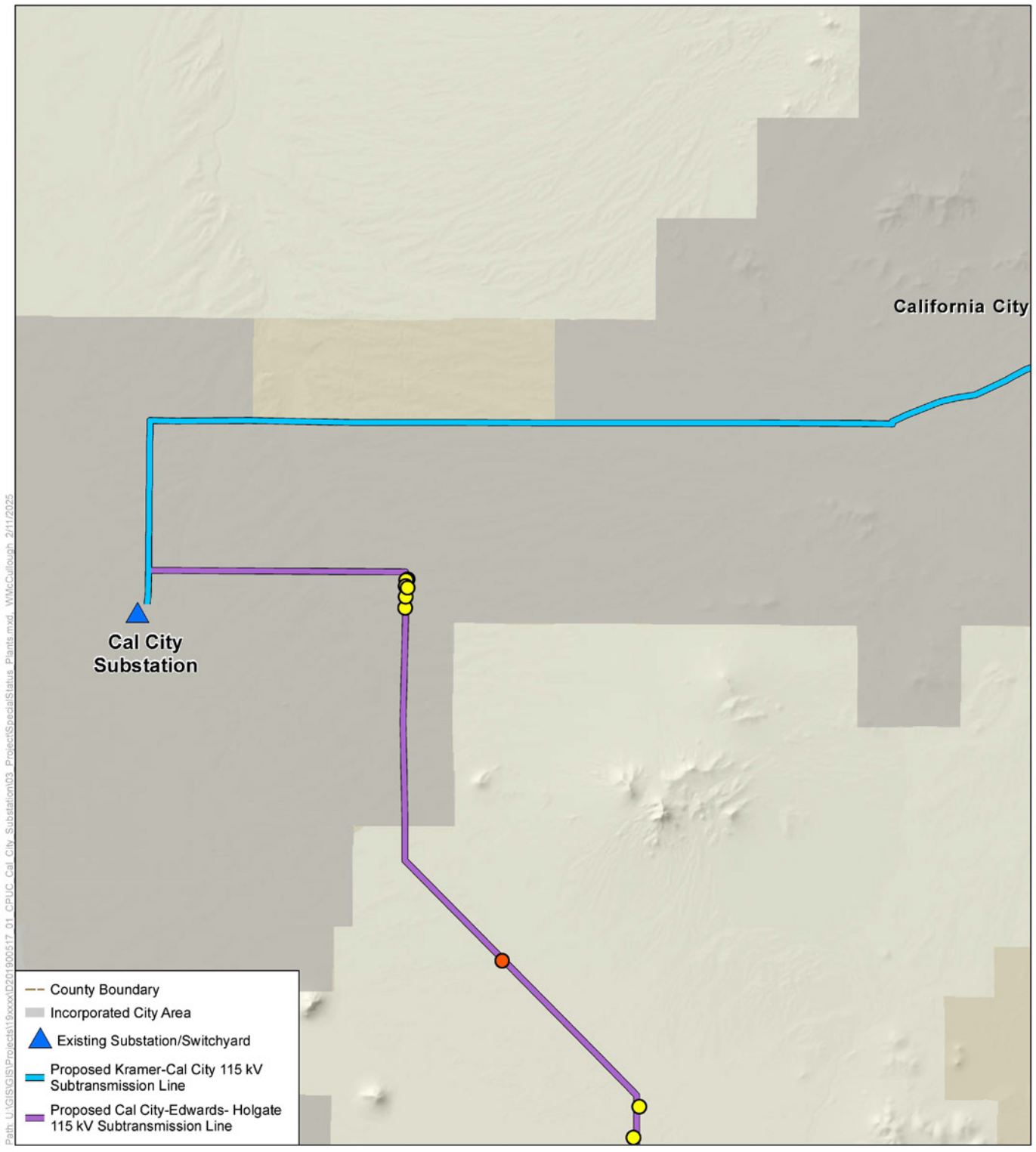
SOURCES: SCE 2023a; CDFW 2025a; CNPS 2025a.



SOURCE: ESA 2023; SCE 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.4-1
Special-Status Plant and Wildlife Species Observations Overview



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

Special Status Plants Observed 2021/2022 Surveys

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Desert Cymopterus *(Cymopterus deserticola)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Pink Funnel Lily *(Androstephium breviflorum)*
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Supplemental 2023 Survey Data

- Barstow Woolly Sunflower *(Eriophyllum mohavense)*
- Barstow Woolly Sunflower *(Eriophyllum mohavense)* Multiple Observations

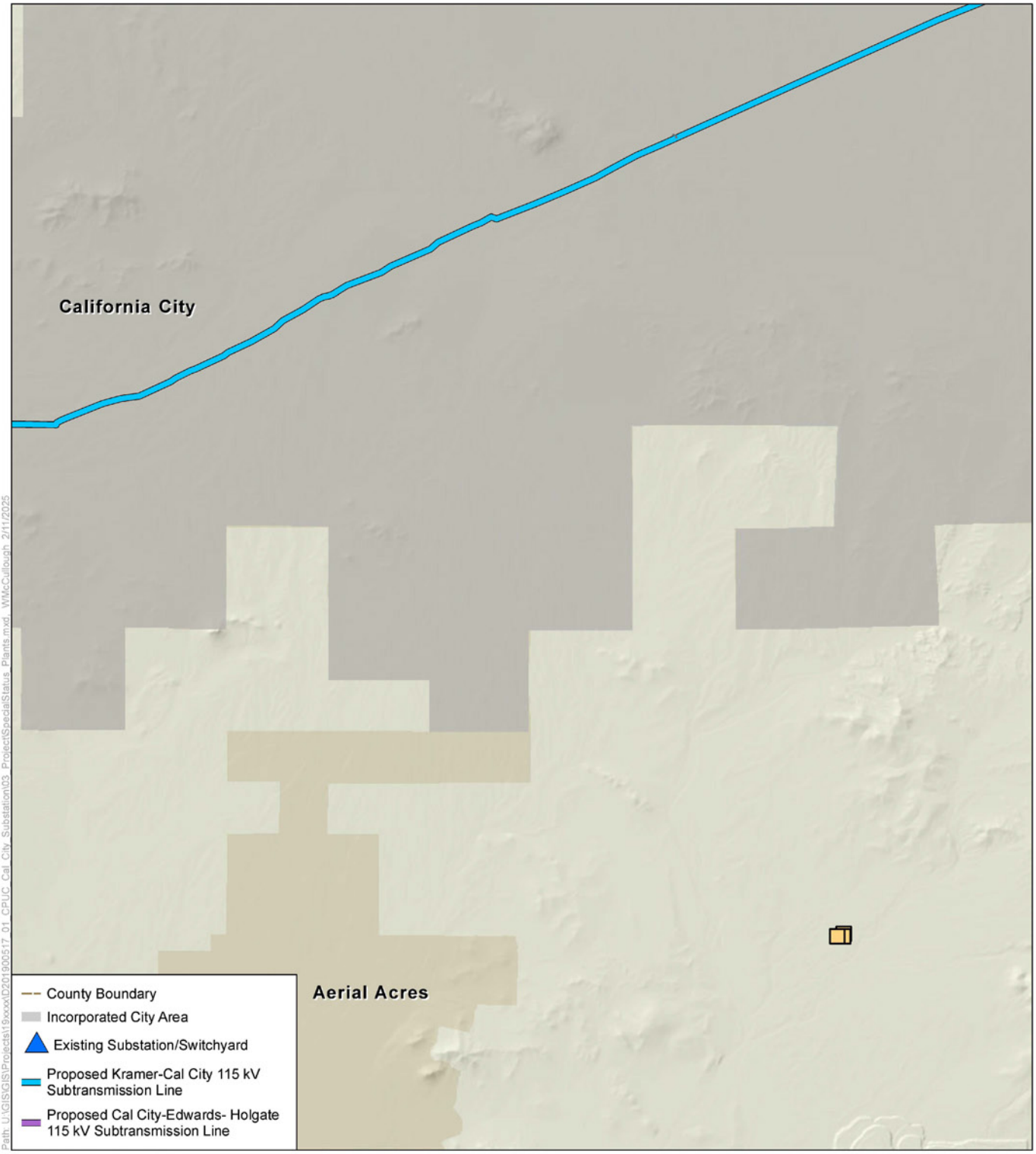
Supplemental 2024 Survey Data

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Crowned Muilla *(Muilla coronata)*
- Golden Cholla *(Cylindropuntia echinocarpa)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Crowned Muilla - *(Muilla coronata)* Multiple Observations
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Figure 3.4-2a
Special-Status Plant Species Observations

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

Special Status Plants Observed 2021/2022 Surveys

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Desert Cymopterus *(Cymopterus deserticola)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Pink Funnel Lily *(Androstephium breviflorum)*
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Supplemental 2023 Survey Data

- Barstow Woolly Sunflower *(Eriophyllum mohavense)*
- Barstow Woolly Sunflower *(Eriophyllum mohavense)* Multiple Observations

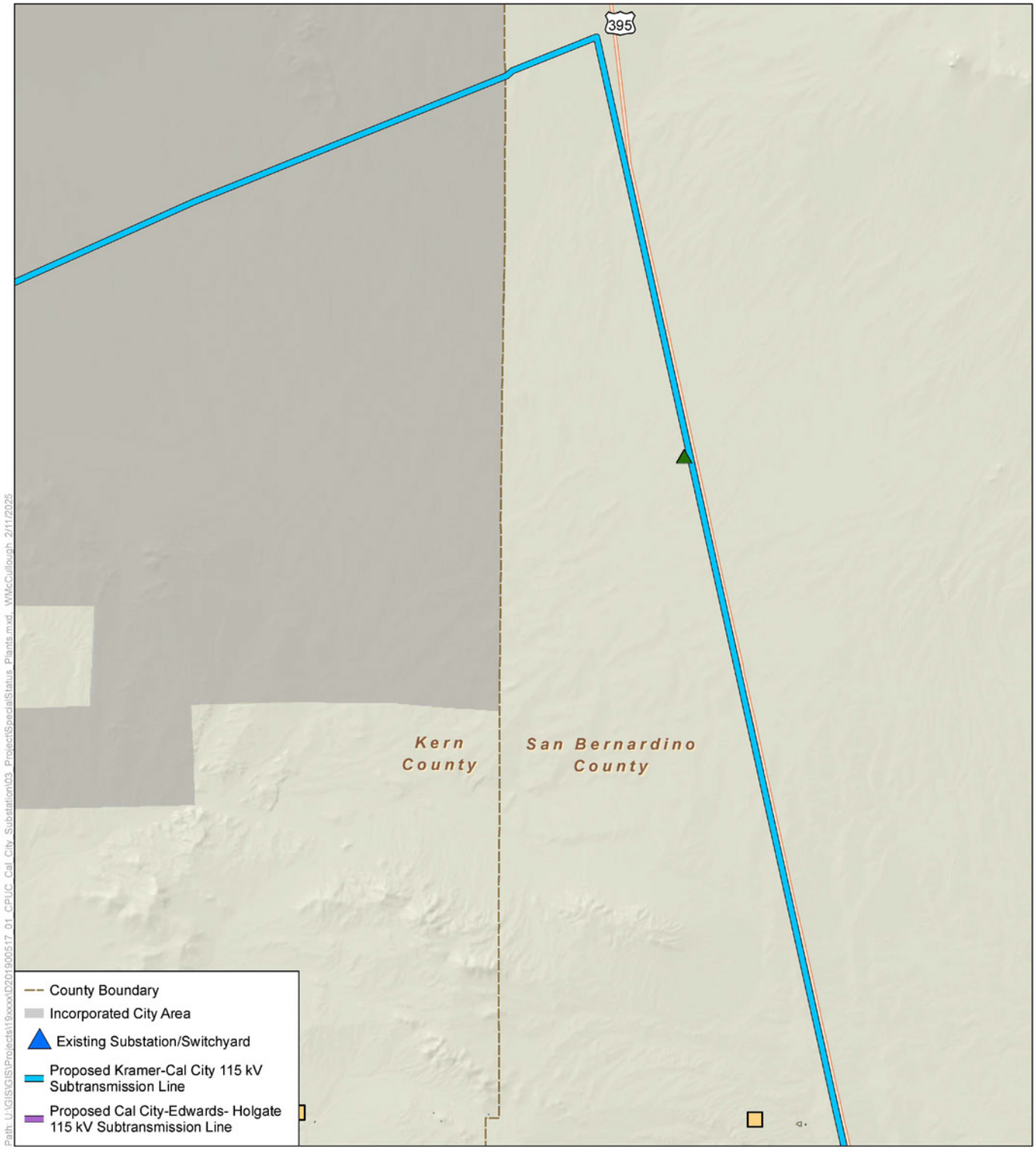
Supplemental 2024 Survey Data

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Crowned Muilla *(Muilla coronata)*
- Golden Cholla *(Cylindropuntia echinocarpa)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Crowned Muilla - *(Muilla coronata)* Multiple Observations
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Figure 3.4-2b
Special-Status Plant Species Observations

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

Special Status Plants Observed 2021/2022 Surveys

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Desert Cymopterus *(Cymopterus deserticola)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Pink Funnel Lily *(Androstephium breviflorum)*
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Supplemental 2023 Survey Data

- Barstow Woolly Sunflower *(Eriophyllum mohavense)*
- Barstow Woolly Sunflower *(Eriophyllum mohavense)* Multiple Observations

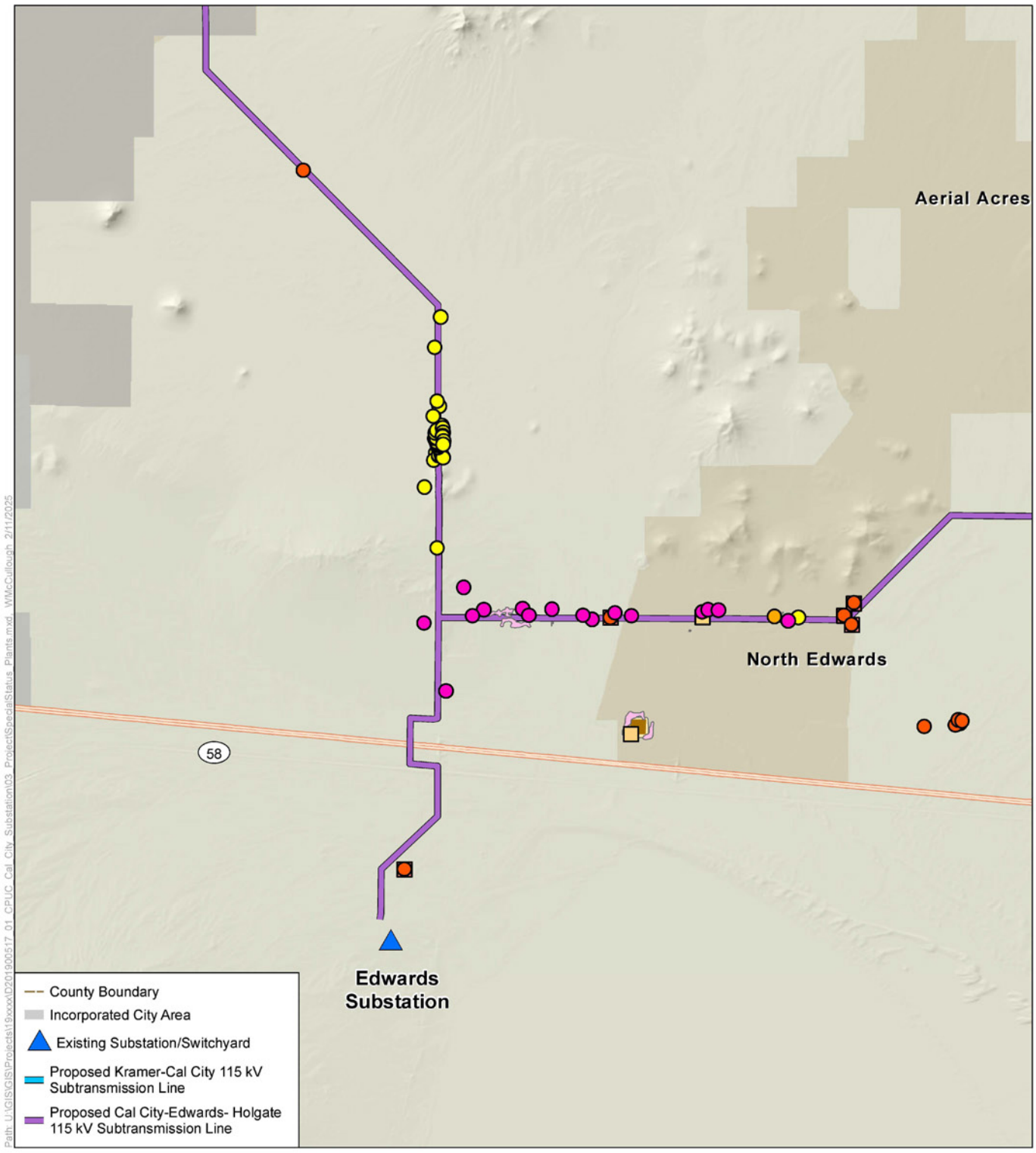
Supplemental 2024 Survey Data

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Crowned Muilla *(Muilla coronata)*
- Golden Cholla *(Cylindropuntia echinocarpa)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Crowned Muilla - *(Muilla coronata)* Multiple Observations
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Figure 3.4-2c
Special-Status Plant Species Observations

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

Special Status Plants Observed 2021/2022 Surveys

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Desert Cymopterus *(Cymopterus deserticola)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Pink Funnel Lily *(Androstephium breviflorum)*
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Supplemental 2023 Survey Data

- Barstow Woolly Sunflower *(Eriophyllum mohavense)*
- Barstow Woolly Sunflower *(Eriophyllum mohavense)* Multiple Observations

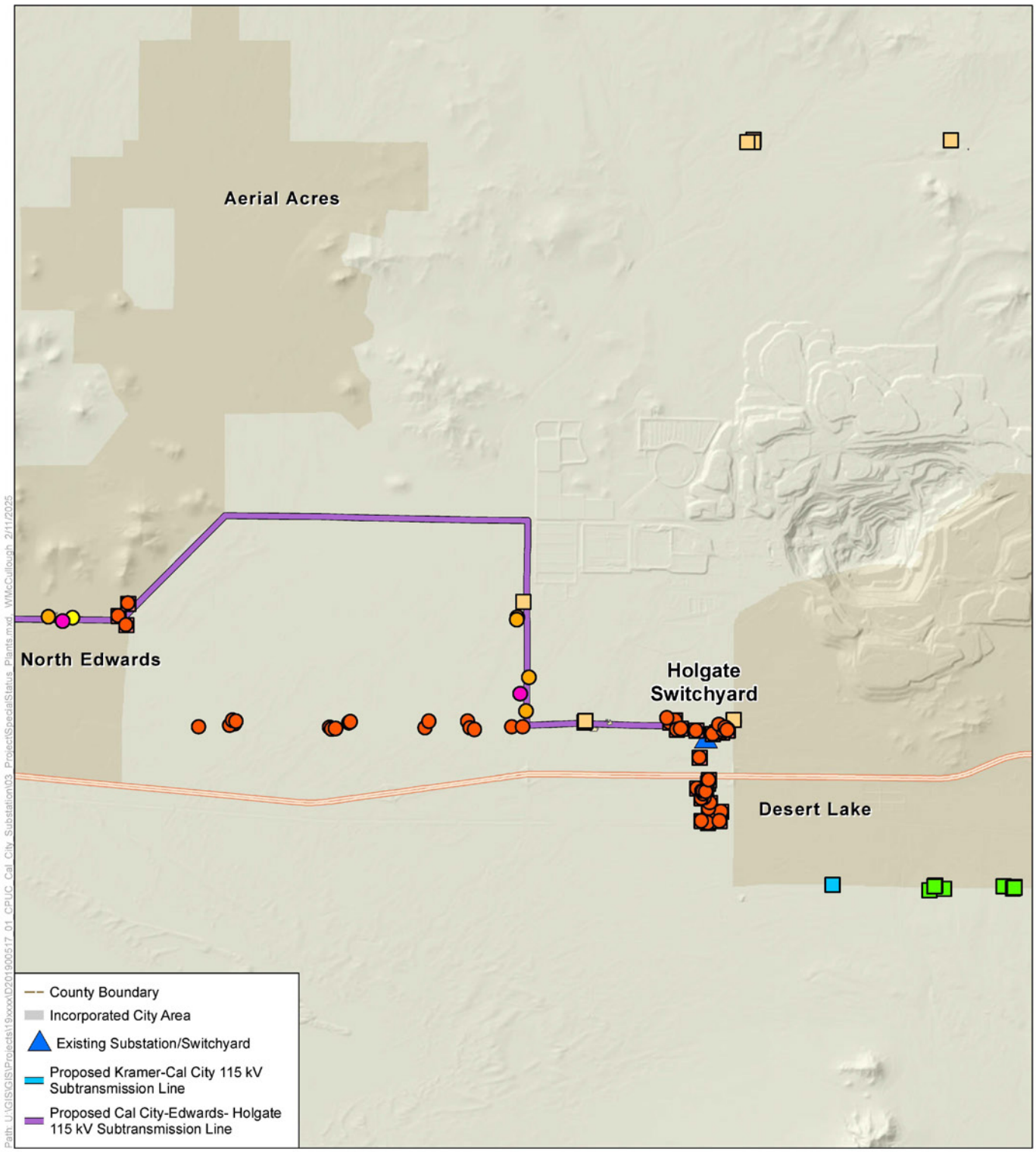
Supplemental 2024 Survey Data

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Crowned Muilla *(Muilla coronata)*
- Golden Cholla *(Cylindropuntia echinocarpa)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Crowned Muilla - *(Muilla coronata)* Multiple Observations
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Figure 3.4-2d
Special-Status Plant Species Observations

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

Special Status Plants Observed 2021/2022 Surveys

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Desert Cymopterus *(Cymopterus deserticola)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Pink Funnel Lily *(Androstephium breviflorum)*
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Supplemental 2023 Survey Data

- Barstow Woolly Sunflower *(Eriophyllum mohavense)*
- Barstow Woolly Sunflower *(Eriophyllum mohavense)* Multiple Observations

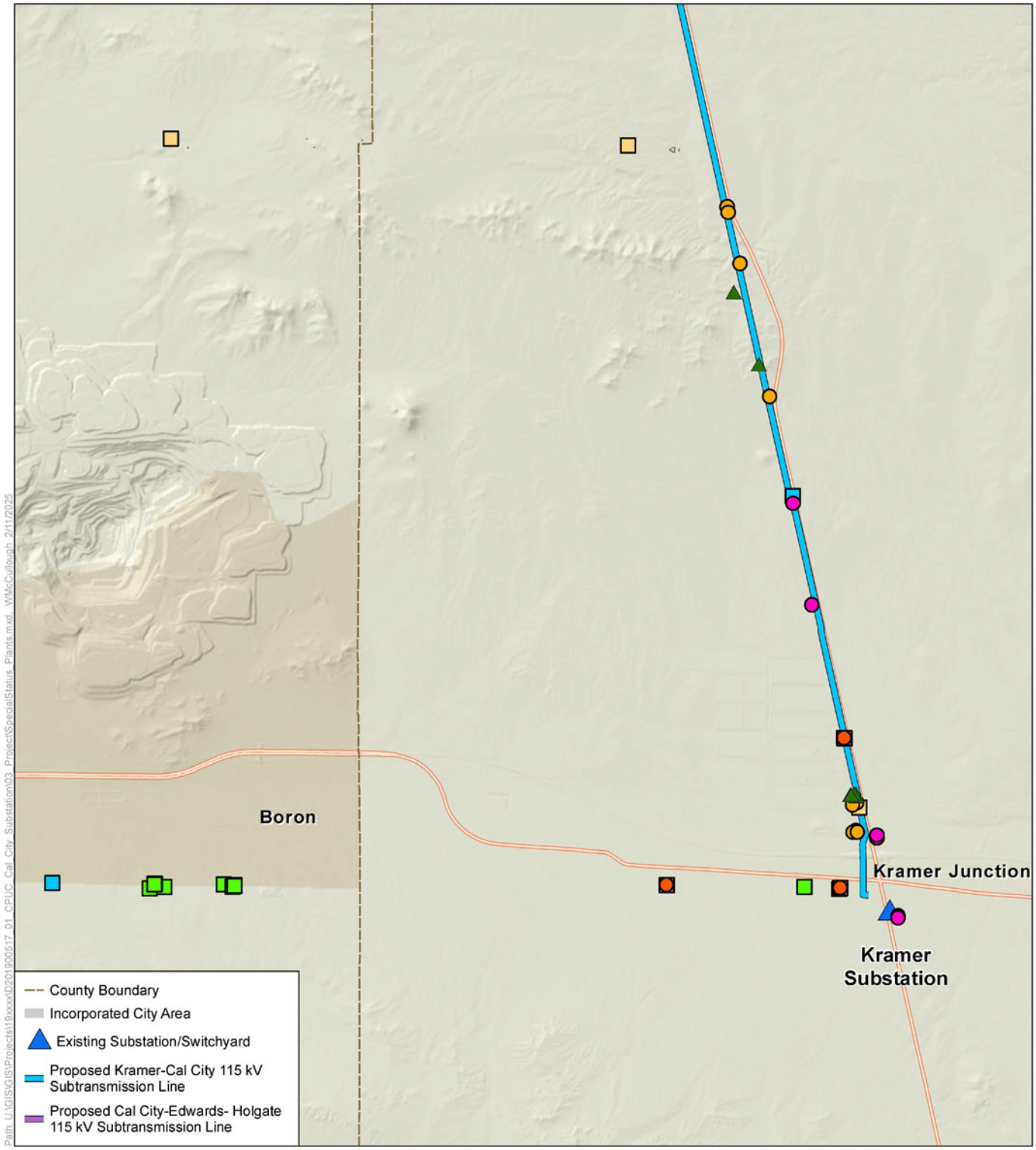
Supplemental 2024 Survey Data

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Crowned Muilla *(Muilla coronata)*
- Golden Cholla *(Cylindropuntia echinocarpa)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Crowned Muilla - *(Muilla coronata)* Multiple Observations
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Figure 3.4-2e
Special-Status Plant Species Observations

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

Special Status Plants Observed 2021/2022 Surveys

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Desert Cymopterus *(Cymopterus deserticola)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Pink Funnel Lily *(Androstephium breviflorum)*
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Supplemental 2023 Survey Data

- Barstow Woolly Sunflower *(Eriophyllum mohavense)*
- Barstow Woolly Sunflower *(Eriophyllum mohavense)* Multiple Observations

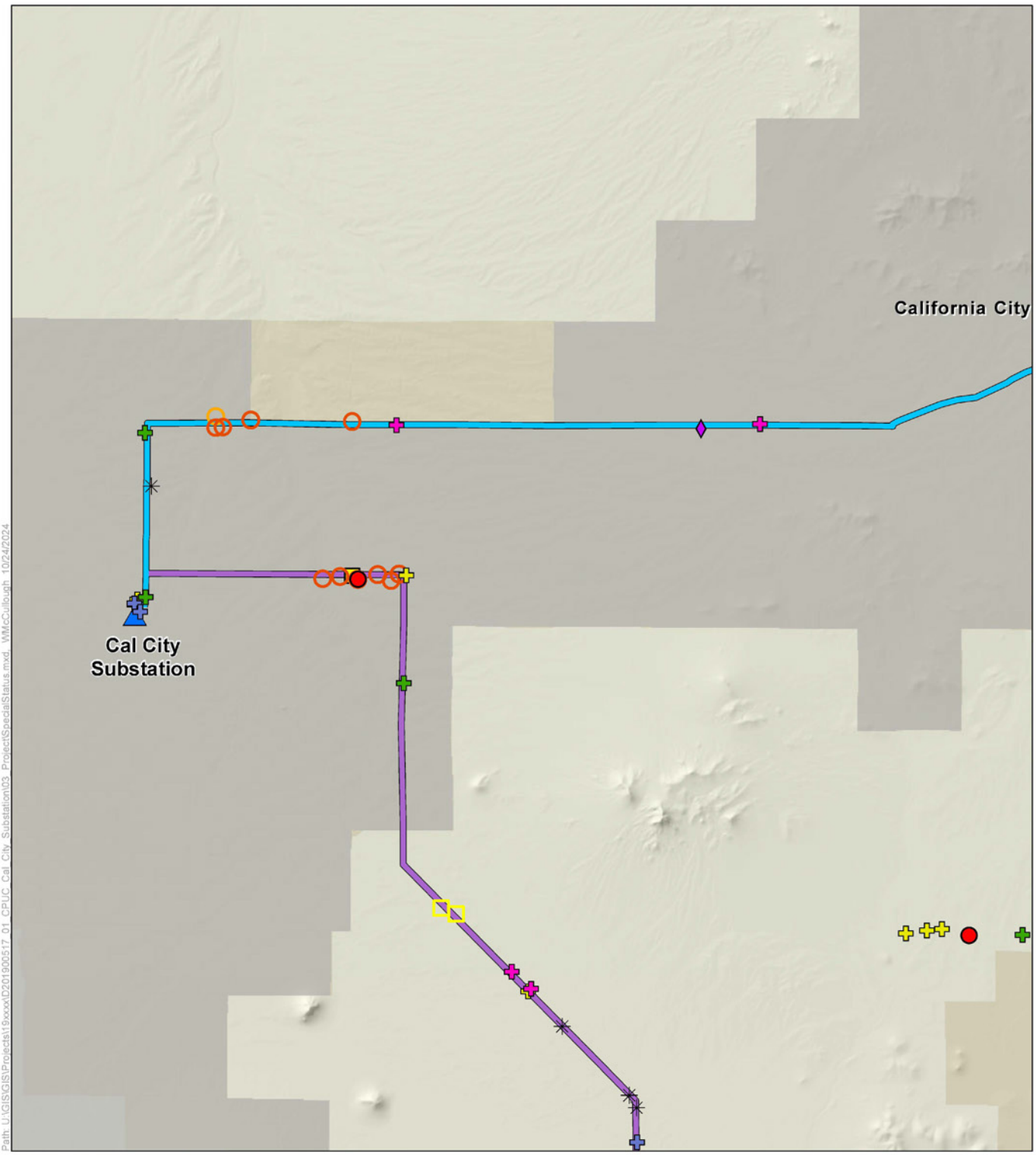
Supplemental 2024 Survey Data

- Western Joshua Tree *(Yucca brevifolia var. brevifolia)*
- Crowned Muilla *(Muilla coronata)*
- Golden Cholla *(Cylindropuntia echinocarpa)*
- Mojave Spineflower *(Chorizanthe spinosa)*
- Crowned Muilla - *(Muilla coronata)* Multiple Observations
- Mojave Spineflower - *(Chorizanthe spinosa)* Multiple Observations

Figure 3.4-2f
Special-Status Plant Species Observations

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species - 2021/2022 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

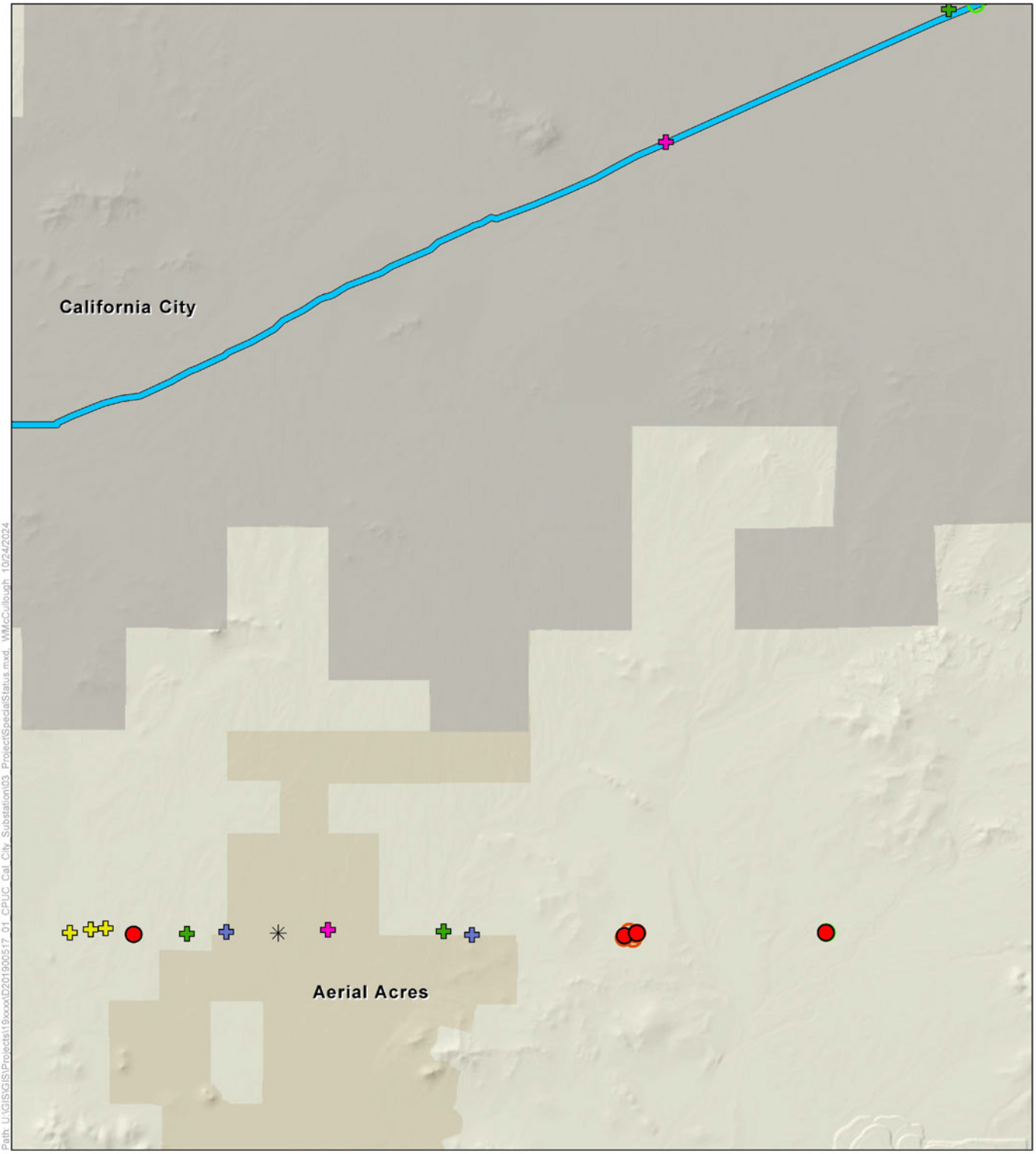
Burrowing Owl
- Live Specimen
- Active Burrow

Non-Listed Species - 2021/2022 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Prairie Falcon
- Desert Kit Fox (Active Den)
- Bird Nest (Unknown Raptor/Raven)

Figure 3.4-3a
Special Status Wildlife Species Observations 2021/2022 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species - 2021/2022 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

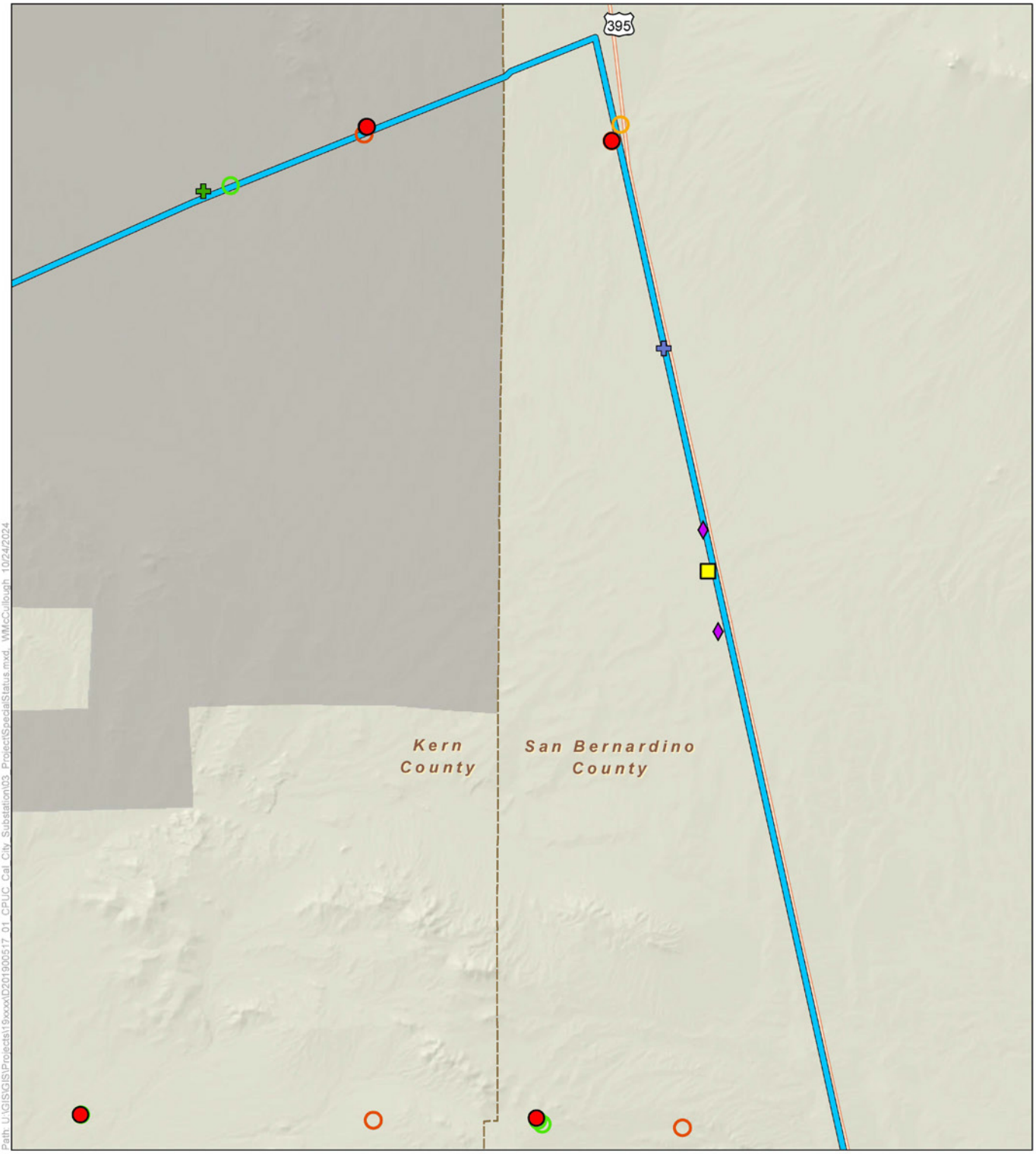
Burrowing Owl
- Live Specimen
- Active Burrow

Non-Listed Species - 2021/2022 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Prairie Falcon
- Desert Kit Fox (Active Den)
- Bird Nest (Unknown Raptor/Raven)

Figure 3.4-3b
Special Status Wildlife Species Observations 2021/2022 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species - 2021/2022 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

Burrowing Owl
- Live Specimen
- Active Burrow

Non-Listed Species - 2021/2022 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Prairie Falcon
- Desert Kit Fox (Active Den)
- Bird Nest (Unknown Raptor/Raven)

Figure 3.4-3c
Special Status Wildlife Species Observations 2021/2022 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species - 2021/2022 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

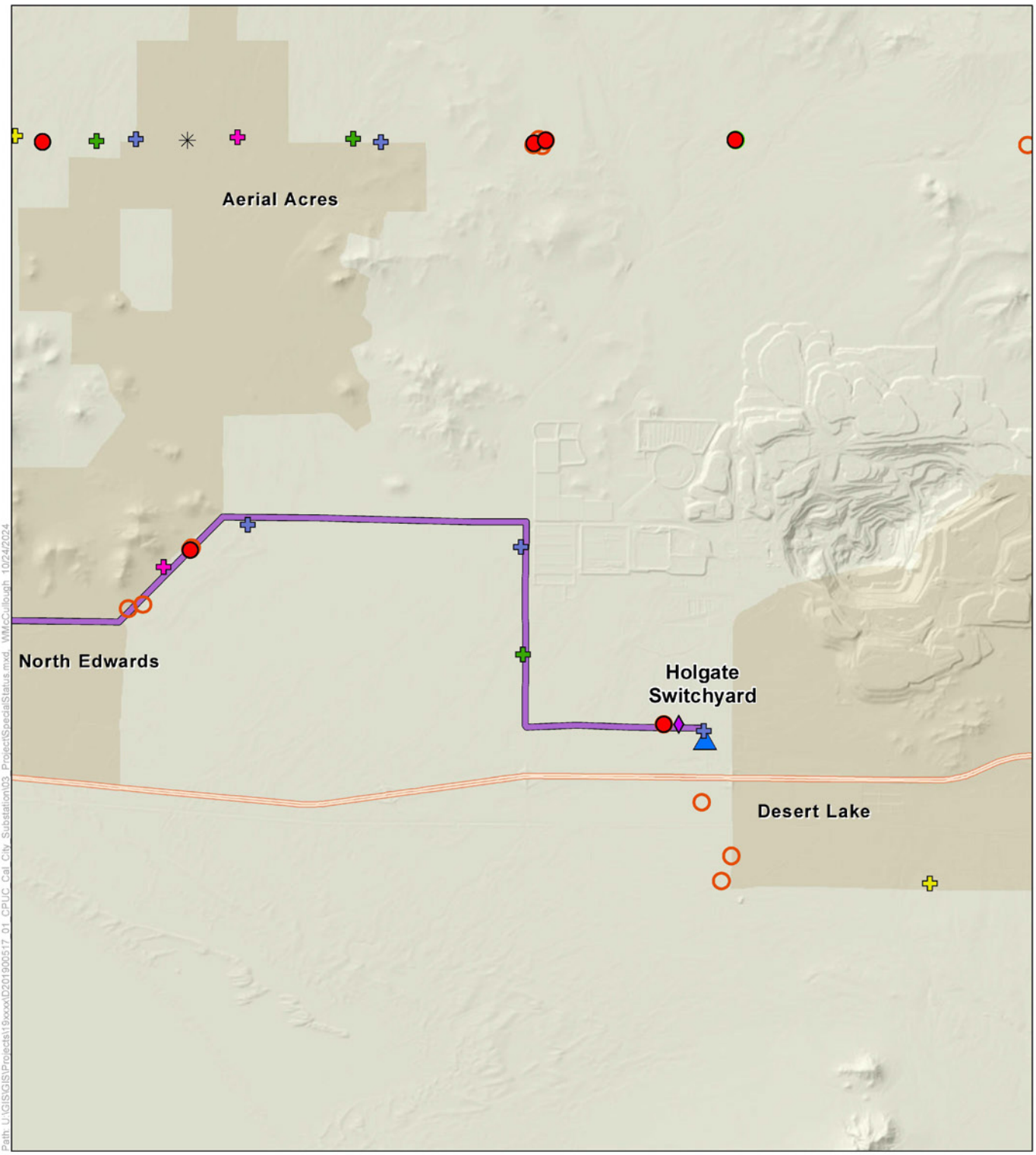
Burrowing Owl
- Live Specimen
- Active Burrow

Non-Listed Species - 2021/2022 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Prairie Falcon
- Desert Kit Fox (Active Den)
- Bird Nest (Unknown Raptor/Raven)

Figure 3.4-3d
Special Status Wildlife Species Observations
2021/2022 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species - 2021/2022 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

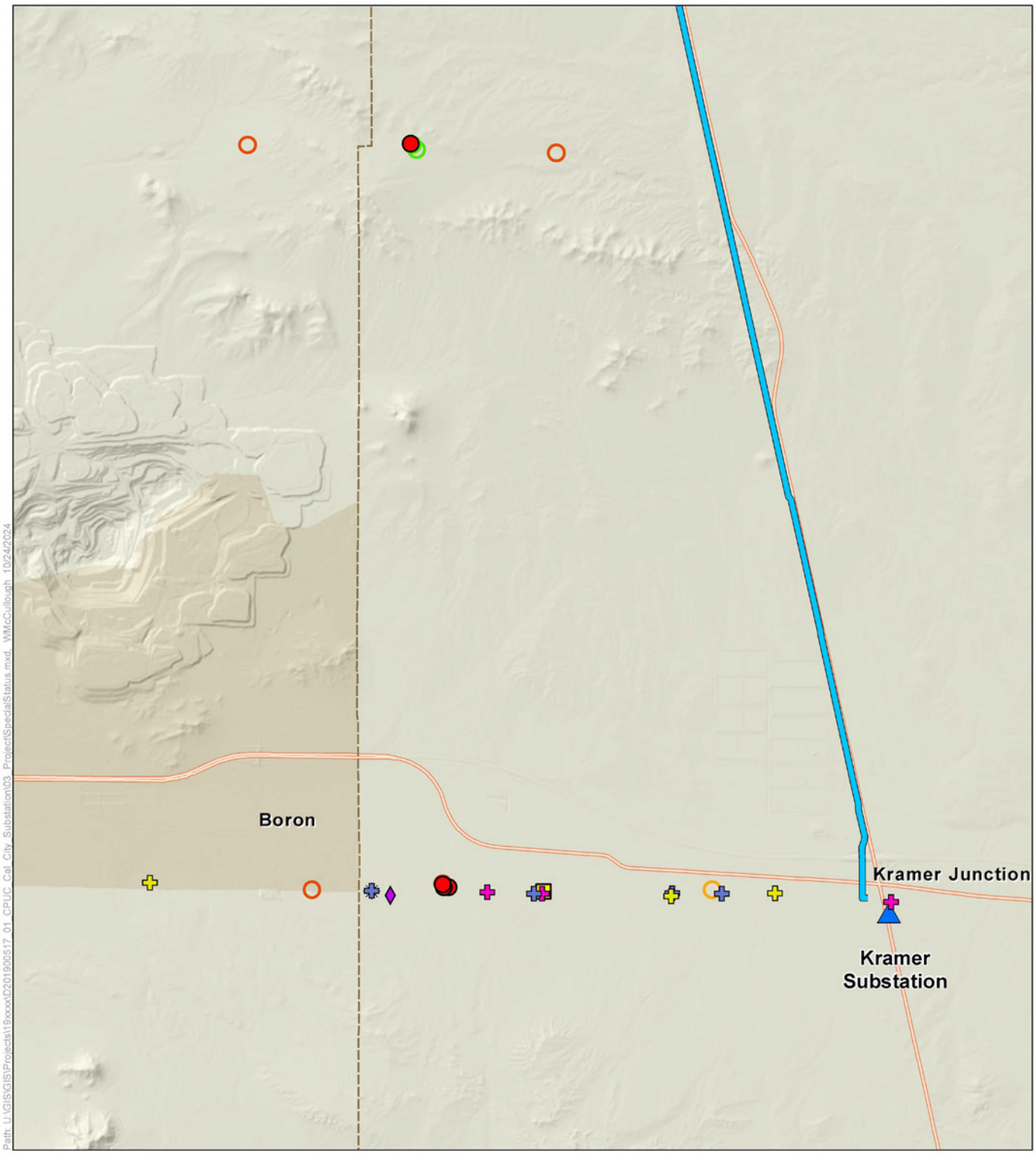
Burrowing Owl
- Live Specimen
- Active Burrow

Non-Listed Species - 2021/2022 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Prairie Falcon
- Desert Kit Fox (Active Den)
- Bird Nest (Unknown Raptor/Raven)

Figure 3.4-3e
Special Status Wildlife Species Observations 2021/2022 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species - 2021/2022 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

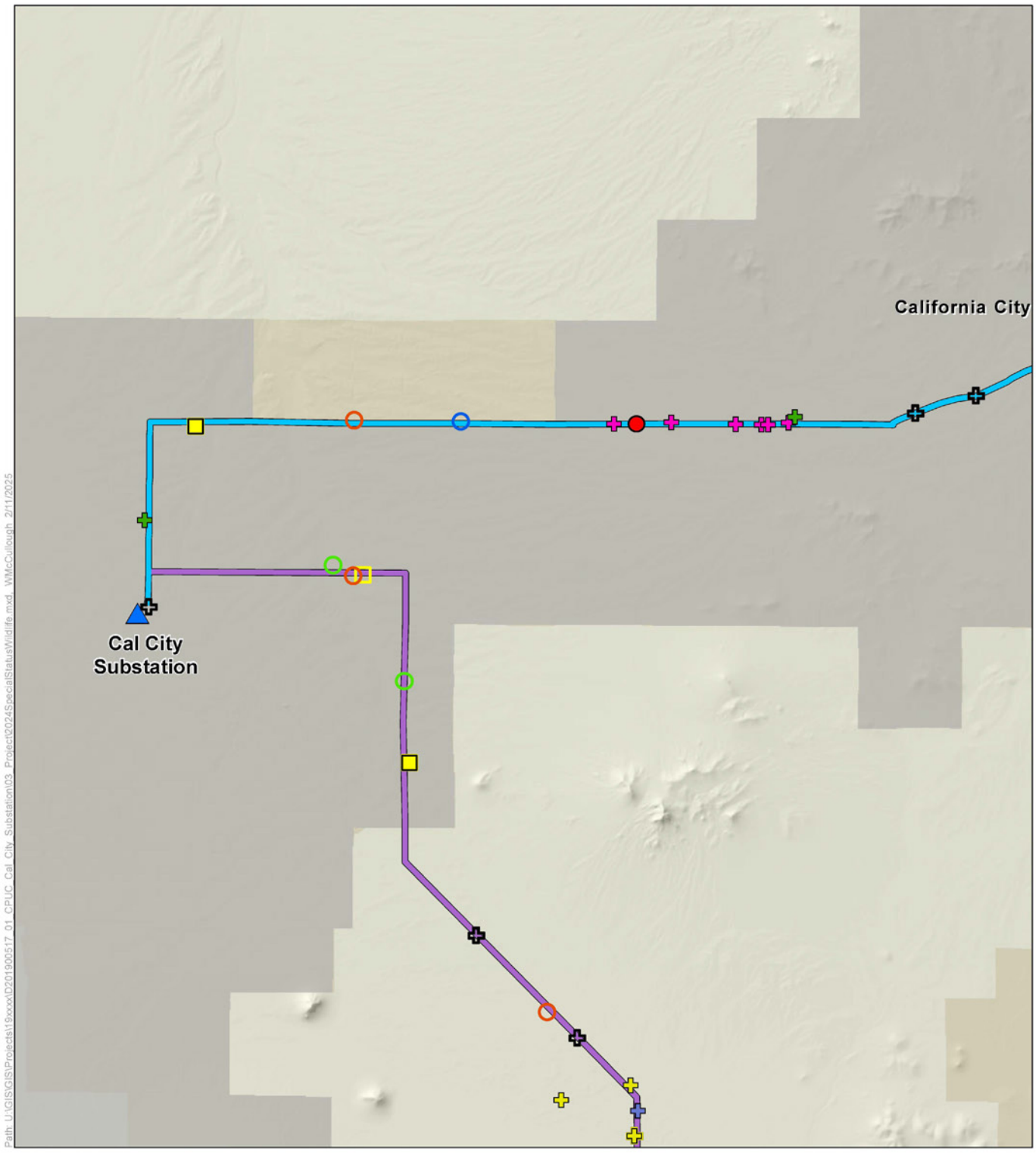
Burrowing Owl
- Live Specimen
- Active Burrow

Non-Listed Species - 2021/2022 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Prairie Falcon
- Desert Kit Fox (Active Den)
- Bird Nest (Unknown Raptor/Raven)

Figure 3.4-3f
Special Status Wildlife Species Observations 2021/2022 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species 2024 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

Burrowing Owl
- Live Specimen
- Active Burrow

Non-Listed Species 2024 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Bell's Sparrow
- Prairie Falcon
- American Badger

Bird Nests
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- American Kestrel
- Red-Tailed Hawk
- Common Raven

Figure 3.4-4a
Special Status Wildlife Species Observations 2024 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species 2024 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

Burrowing Owl
- Live Specimen
- Active Burrow

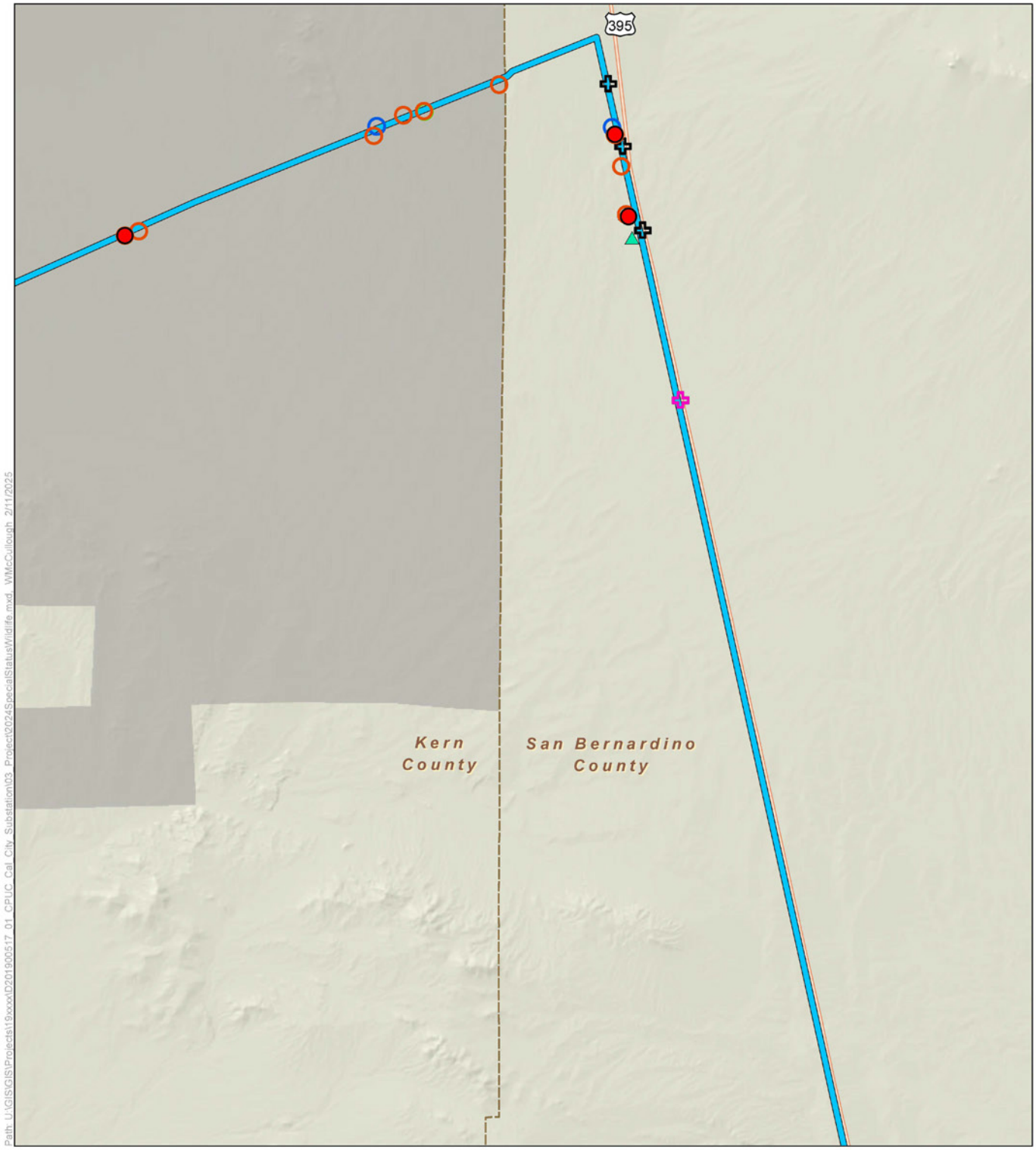
Non-Listed Species 2024 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Bell's Sparrow
- Prairie Falcon
- American Badger

Bird Nests
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- American Kestrel
- Red-Tailed Hawk
- Common Raven

Figure 3.4-4b
Special Status Wildlife Species Observations 2024 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species 2024 Surveys

Mojave Desert Tortoise Observation

- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

Burrowing Owl

- Live Specimen
- Active Burrow

Non-Listed Species 2024 Surveys

- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Bell's Sparrow
- Prairie Falcon
- American Badger

Bird Nests

- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- American Kestrel
- Red-Tailed Hawk
- Common Raven

Figure 3.4-4c
Special Status Wildlife Species Observations 2024 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species 2024 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

Burrowing Owl
- Live Specimen
- Active Burrow

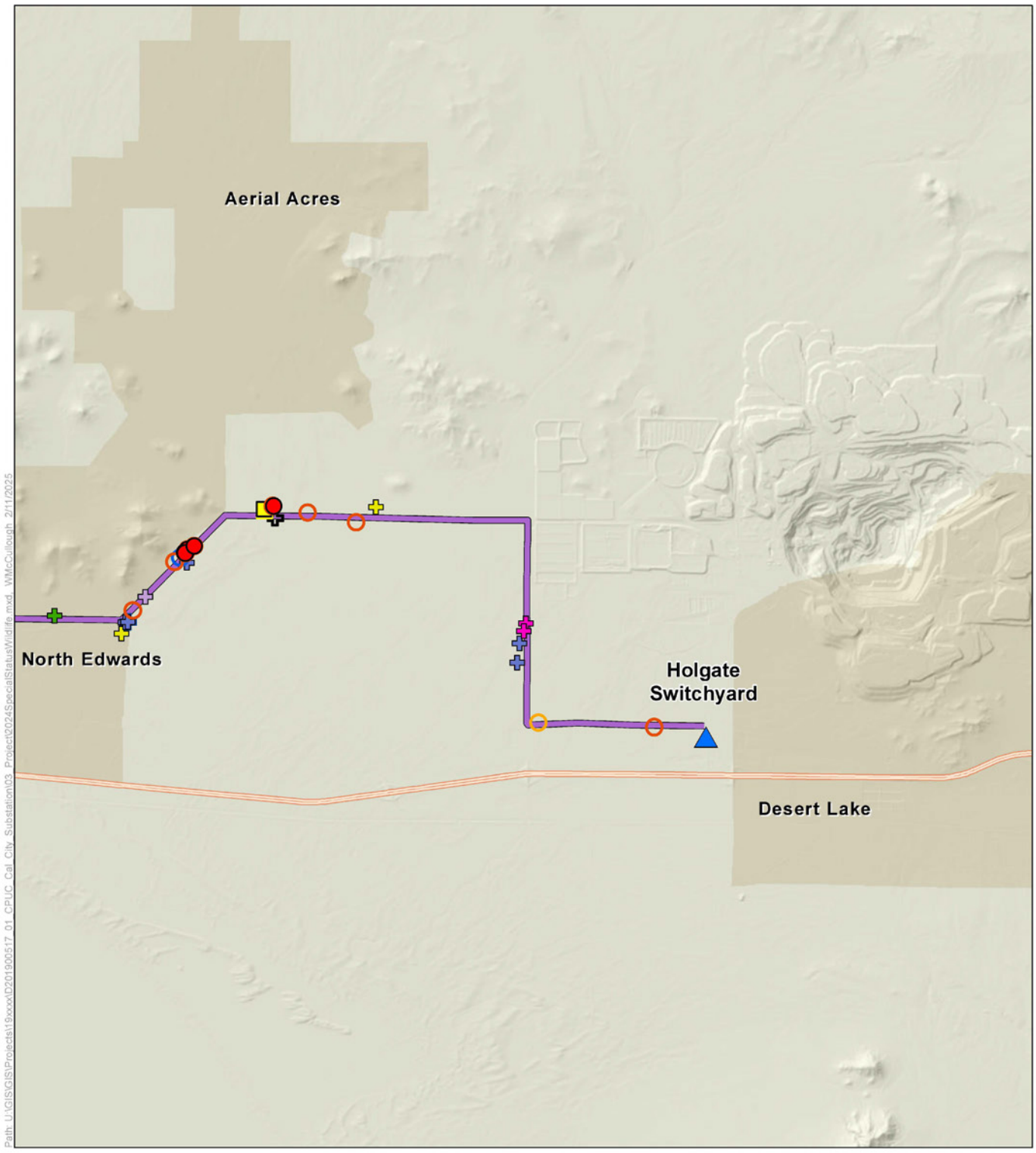
Non-Listed Species 2024 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Bell's Sparrow
- Prairie Falcon
- American Badger

Bird Nests
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- American Kestrel
- Red-Tailed Hawk
- Common Raven

Figure 3.4-4d
Special Status Wildlife Species Observations 2024 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species 2024 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

Burrowing Owl
- Live Specimen
- Active Burrow

Non-Listed Species 2024 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Bell's Sparrow
- Prairie Falcon
- American Badger

Bird Nests
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- American Kestrel
- Red-Tailed Hawk
- Common Raven

Figure 3.4-4e
Special Status Wildlife Species Observations 2024 Survey Data

N

0 1
Miles



SOURCES: ESA, 2023; SCE, 2023, 2024

Cal City Substation 115 kV Upgrade Project

- County Boundary
- Incorporated City Area
- Existing Substation/Switchyard
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Proposed Cal City-Edwards- Holgate 115 kV Subtransmission Line

Listed/Candidate Species 2024 Surveys

Mojave Desert Tortoise Observation
- Live Specimen
- Burrow
- Carcass
- Pallet
- Scat

Burrowing Owl
- Live Specimen
- Active Burrow

Non-Listed Species 2024 Surveys
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- Bell's Sparrow
- Prairie Falcon
- American Badger

Bird Nests
- California Horned Lark
- LeConte's Thrasher
- Loggerhead Shrike
- American Kestrel
- Red-Tailed Hawk
- Common Raven

Figure 3.4-4f
Special Status Wildlife Species Observations 2024 Survey Data

N

0 1
Miles

Wildlife

Table 3.4-4 identifies special-status wildlife species that have been determined to be present or likely to occur within the study area. Locations where special-status species were observed in the study area during surveys performed in 2021 and 2022 are depicted in Figures 3.4-3a through 3.4-3f, *Special-Status Wildlife Species Observations (2021–2022)*. Additional locations where focused surveys for desert tortoise and burrowing owl identified these and other special-status wildlife during surveys performed in 2024 are shown on Figures 3.4-4a through 3.4-4f, *Special-Status Wildlife Species Observations (2024) Survey Data*. Other special-status wildlife species were determined to be absent or not likely to occur within the study area (SCE 2023a). The state-listed threatened Swainson's hawk is known to occur and nest occasionally in the western Mojave Desert region. However, this species was not observed during studies and nesting occurrences are not reported within 20 miles of the study area. It is therefore considered unlikely to occur other than occasionally while foraging or migrating through the Project area.

TABLE 3.4-4
SPECIAL-STATUS WILDLIFE SPECIES PRESENT OR LIKELY TO OCCUR WITHIN THE BIOLOGICAL STUDY AREA

Species	Status	Presence/Potential to Occur
Crotch's bumble bee (*Bombus crotchii*)	SCE	High
Mojave desert tortoise (*Gopherus agassizii*)	FT, ST	Present
Cooper's hawk (*Accipiter cooperii*)	WL	Present
western burrowing owl (*Athene cunicularia hypugaea*)	SCE, SSC, S, BCC	Present
golden eagle (*Aquila chrysaetos*)	S, FP, WL	High
California horned lark (*Eremophila alpestris actia*)	WL	Present
prairie falcon (*Falco mexicanus*)	WL	Present
loggerhead shrike (*Lanius ludovicianus*)	SSC	Present
LeConte's thrasher (*Toxostoma lecontei*)	S, SSC, BCC	Present
American badger (*Taxidea taxus*)	SSC	Moderate
Mohave ground squirrel (*Xerospermophilus mohavensis*)	ST, S	High
desert kit fox (*Vulpes macrotis arsipus*)	**	Present

NOTES: FE = federally listed as endangered; FT = federally listed as threatened; FPT = federal proposed threatened; ST = state threatened; SCE = state candidate endangered; S = U.S. Bureau of Land Management (BLM) Sensitive; FP = California Department of Fish and Wildlife (CDFW) Fully Protected; ** = California Fish and Game Code Section 460–Protected; SSC = CDFW Species of Special Concern; WL = CDFW Watch List; BCC = U.S. Fish and Wildlife Service Birds of Conservation Concern.

Note that larval host plants for the monarch butterfly (*Danaus plexippus*; federal proposed threatened), specifically milkweed species, were not identified in the Project area during focused botanical surveys, focused milkweed surveys in the Cal City Substation to U.S. Highway 395 corridor, or reconnaissance-level wildlife surveys. Additionally, adult monarchs were not recorded during database searches or during Project scoping. Therefore, this species is not included in the current analysis. It is anticipated that BLM will require additional focused surveys and protective measures for milkweed species and monarch butterflies on lands under its management.

The CDFW Notice of Preparation comment letter stated that several additional species could be affected by the Project, including three special-status bat species: pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and spotted bat (*Euderma maculatum*), as well as the gray vireo (*Vireo vicinior*)(see Appendix B, *Scoping Report*). As discussed in Appendix G, *Cal City Substation 115 kV Upgrade Project Biological Resources Technical Report*, suitable roosting habitat for these bat species is absent from the Project area, and there are no records of their occurrence within 5 miles. Additionally, the Project lies outside the documented range of the gray vireo. Appendix G considers these and other rare plant and wildlife species that are unlikely to occur in the Project area for various reasons. Species that are unlikely to occur in the Project area are not discussed in this section.

SOURCES: SCE 2023a; CDFW 2025a

3.4.2.3 Critical Habitat

USFWS can designate critical habitat for species that have been listed as threatened or endangered. *Critical habitat* is defined in FESA Section 3(5)(A) as those lands (or waters) within a listed species' current range that contain the physical or biological features that are considered essential to its conservation. The Fremont–Kramer Critical Habitat Unit for Mojave desert tortoise borders the east side of U.S. 395, opposite the eastern edge of the study area. In two small areas, the study area overlaps small areas of designated critical habitat—at the intersection of U.S. 395 and Twenty Mule Team Parkway in the northeast corner and also near Kramer Junction in the southeast corner of the study area, as shown in **Figure 3.4-5**, *Designated Conservation Areas*. The study area contains approximately 322.4 acres of critical habitat in the Fremont–Kramer Critical Habitat Unit (USFWS 2025b; SCE 2023a).

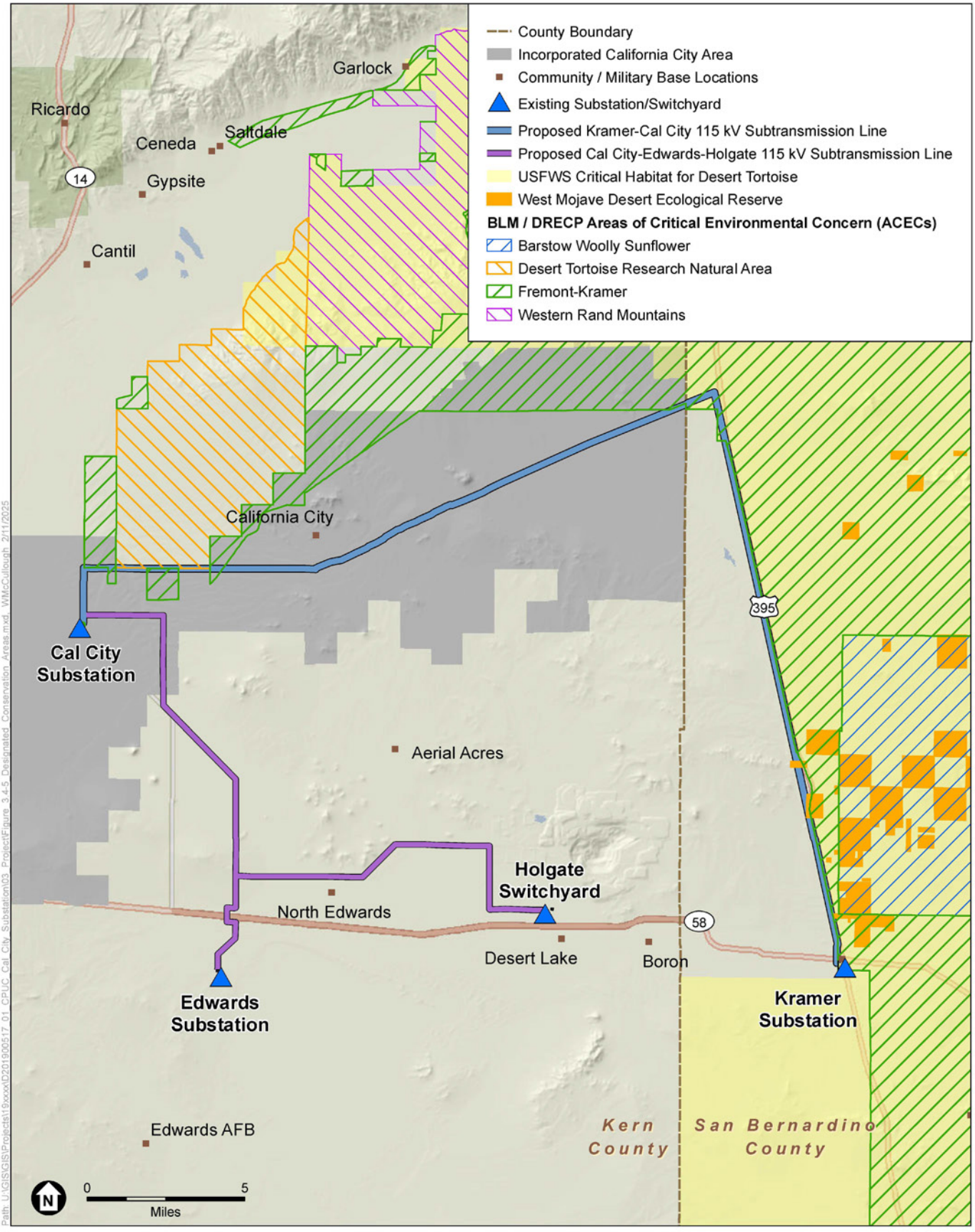
Designated critical habitat is based on the presence of primary constituent elements. In determining areas to designate as critical habitat, USFWS considers those physical and biological attributes that are essential to a species' conservation. In addition, FESA stipulates that the areas containing these elements may require special management considerations or protection. The following are the primary constituent elements for the Mojave desert tortoise:

- Space for individual and population growth, and for normal behavior.
- Food, water, or other nutritional or physiological requirements.
- Cover or shelter.
- Sites for breeding, reproduction, and rearing of offspring.
- Generally, habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

3.4.2.4 Aquatic Resources

An aquatic resources delineation was conducted for the study area in February 2024, and a draft aquatic resources delineation report was prepared by SCE in August 2024 (Artemis Environmental Services 2024d). During the aquatic resources delineation, the study area was assessed for its potential to support aquatic resources that are subject to U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA); CDFW jurisdiction pursuant to Section 1600 of the California Fish and Game Code; and Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Section 401 of the CWA.

The study area supports potential aquatic features that may be regulated by the RWQCB and CDFW. Additionally, several non-jurisdictional features (e.g., erosional features, roadside swales) were observed in the study area. **Table 3.4-5** presents a summary of observed aquatic features within the study area that appeared jurisdictional or potentially jurisdictional.



ESA 2023; SCE 2023; BLM, 2024; USFWS, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.4-5
Designated Conservation Areas

TABLE 3.4-5
AQUATIC RESOURCES WITHIN THE BIOLOGICAL STUDY AREA

Jurisdictional Water Type	Approximate Area (acres)[1]
USACE Jurisdiction	
Non-wetland Waters of the United States	0.00
Culverted Non-wetland Waters of the United States	0.00
Wetland Waters of the United States	0.00
Total Waters of the United States	***0.00***
RWQCB Jurisdiction	
Non-wetland Waters of the State[2]	24.83
Culverted Non-wetland Waters of the State	0.20
Wetland Waters of the State	0.00
Total Waters of the State	***25.03***
CDFW Jurisdiction	
CDFW Jurisdictional Streambed[3]	38.79

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

1. Acres estimated using Geographic Information System (GIS).
2. Playa features were mapped as non-wetland waters of the state (13.96 acres) due to the presence of an ordinary high-water mark and the absence of hydric soil indicators.
3. Includes approximately 17.79 acres of playa, 0.28 acre of basin, 20.40 acres of streambed and bank (vegetated and unvegetated), and 0.31 acre of ditch/canal.

SOURCE: Artemis Environmental Services 2024d

3.4.2.5 Wildlife Movement

Habitat linkages are contiguous areas of open space that connect between larger habitat areas. Linkages allow for both diffusion and dispersal of a variety of species within the landscape. Wildlife "corridors" facilitate movement and dispersal but may not include habitat capable of supporting all life history requirements of a species.

Wildlife movement corridors may provide terrestrial animals with access to water, food, and cover. In addition, landscape linkages enable genetic exchange between wildlife populations in otherwise separated natural areas, thereby improving genetic variability within species, which also enhances a species' ability to respond to changing environmental conditions. This is especially critical for small populations that are subject to loss of variability from genetic drift and the effects of inbreeding. Wildlife corridor usage and wildlife movement patterns vary greatly between species.

A network of wildlife linkages that have been identified in the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) are adjacent to the Project's Kramer–Cal City 115 kV Subtransmission Line alignment. BLM has established Areas of Critical Environmental Concern (ACECs) to protect wildlife linkages and other wilderness areas. The Desert Tortoise Research Natural Area ACEC overlaps a small portion of the northwestern corner of the study area near the proposed Kramer–Cal City 115 kV Subtransmission Line alignment; the northwestern and eastern extents of the study area overlap a small portion of the Fremont–

Kramer ACEC; and the Western Rand Mountains ACEC is located northwest of the study area (BLM 2016a).

The study area also contains potential habitat corridors that could link Mohave ground squirrel core areas and known populations (Leitner 2008, 2009). The areas extend northwest from roughly northeast of the community of North Edwards to east of the city of California City, and from Edwards Air Force Base south of Boron north along U.S. 395 to the El Paso Mountains more than 15 miles northwest of the study area.

3.4.2.6 Nursery Sites

No regional or local native wildlife nursery sites were identified or are known to exist within 5 miles of the study area (SCE 2023b).

3.4.3 Regulatory Setting

Biological resources in the study area are protected and regulated by a variety of laws and policies administered by federal, state, and local agencies. This section summarizes the biological resource–related agencies, regulations, and policies relevant to the Project.

3.4.3.1 Federal

U.S. Fish and Wildlife Service

USFWS administers FESA (United States Code Title 16, Section 153 et seq. [16 USC 153 et seq.]), the Migratory Bird Treaty Act (16 USC Sections 703–711), and the Bald and Golden Eagle Protection Act (16 USC 668).

Federal Endangered Species Act

Under FESA, the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 USC 1533[c]). Two federal agencies oversee FESA: USFWS has jurisdiction over plants, wildlife, and resident fish, while the National Marine Fisheries Service has jurisdiction over anadromous fish and marine fish and mammals. FESA Section 7 mandates that all federal agencies consult with USFWS and the National Marine Fisheries Service to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. FESA prohibits the "take"[1] of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

FESA Section 10 requires the issuance of an "incidental take" permit before any non-federal public or private action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an endangered or threatened species. The permit requires the preparation and implementation of a habitat conservation plan (HCP) that

[1] FESA defines the term *take* as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

would offset the take of individuals that may occur, incidental to implementation of a project, by providing for the overall preservation of the affected species through specific mitigation measures.

Critical Habitat

USFWS designates critical habitat for listed species under FESA. *Critical habitat designations* are specific areas within a geographic region that are occupied by a species and determined to be critical to its survival in accordance with FESA. Agencies that propose, fund, or issue a permit for a project that may affect a federally listed species or critical habitat must prepare an HCP as part of an application for a permit from USFWS.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act prohibits the killing, possessing, or trading of migratory birds, bird parts, eggs, and/or nests, except in accordance with regulations prescribed by the Secretary of the Interior. Bird species protected under the Migratory Bird Treaty Act are listed in the Code of Federal Regulations (50 CFR 10.13).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668) protects bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species, and establishes civil penalties for violation of the law.

U.S. Army Corps of Engineers

Clean Water Act

The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the law was significantly reorganized and expanded in 1972. “Clean Water Act” became the law’s common name when amendments were made in 1972.

Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and mining projects. Section 404 requires that a permit be issued before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from regulation under Section 404 (e.g., certain farming and forestry activities).

Since its inception, the definition of waters of the United States has been subject to various interpretations. Most recently, the U.S. Supreme Court, ruling in *Sackett v. Environmental Protection Agency*, sharply limited the scope of the federal CWA’s protection for the nation’s waters. As a result of this decision, the U.S. Environmental Protection Agency and USACE issued a final rule that amends the “Revised Definition of ‘Waters of the United States’” to conform key aspects of the regulatory text to the U.S. Supreme Court’s decision (*Federal Register* Volume 88, Number 173, Pages 61964–61969, September 8, 2023) (USACE and USEPA 2023).

Under the "Revised Definition of 'Waters of the United States'; Conforming" rule, the term *waters of the United States* is defined as follows (33 CFR 328.3[a]):

> *(1) Waters which are:*
>
> *(i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
>
> *(ii) The territorial seas; or*
>
> *(iii) Interstate waters;*
>
> *(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;*
>
> [Note: To meet this category, one must be able to demonstrate that the current impoundment would have met the criteria of a water of the United States at the time of impoundment. This means that before the impoundment, the feature would have met definitions a(1), a(3), a(4), or a(5). This demonstration usually requires using historic aerial photos/maps or historic topographic maps.]
>
> *(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;*
>
> *(4) Wetlands adjacent to the following waters:*
>
> *(i) Waters identified in paragraph (a)(1) of this section; or*
>
> *(ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;*
>
> *(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.*

Wetlands are defined by USACE 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" (33 CFR 328.3[c][1]; 40 CFR 120.2[c][1]). Indicators of three wetland parameters—hydric soils, hydrophytic vegetation, and wetlands hydrology—as determined by a site investigation must be present at a site for USACE to classify the site as a wetland (Environmental Laboratory 1987).

U.S. Bureau of Land Management

U.S. Bureau of Land Management Special-Status Species Management Manual

BLM's Special-Status Species Management Manual 6840 (BLM 2008) identifies *special-status species* as species listed or proposed for listing under FESA and species recognized as requiring special management consideration to lessen the likelihood for future listing. According to Manual 6840, they shall retain in federal ownership habitats that are essential for the conservation of any listed species, particularly those that are part of a broader, logical public land ownership

management unit. If a BLM special-status species (i.e., designated as a BLM Sensitive species) or any federal candidate species or proposed species is delisted, it will be monitored for the 5 years after its delisting as a BLM Sensitive species.

Desert Renewable Energy Conservation Plan

The DRECP is a collaborative effort between the California Energy Commission, CDFW, BLM, and USFWS to help provide effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects (BLM 2016a). The DRECP is focused on 22.5 million acres on public and private lands across Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties. The DRECP amends the 1980 California Desert Conservation Area Plan and serves as an HCP and as a natural community conservation plan (NCCP). The Project lies entirely within the DRECP area.

As part of the DRECP effort, BLM prepared a Land Use Plan Amendment, or LUPA, that amends the California Desert Conservation Area Plan applicable to BLM-managed public lands (BLM 2016a). This LUPA identified and mapped areas for renewable energy development and areas for long-term natural resource conservation, consistent with the Federal Land Policy and Management Act's multiple-use and sustained yield requirements. Conservation areas within BLM land under the DRECP LUPA include existing, modified, and new ACECs. Portions of the Project area fall within the Fremont–Kramer ACEC and the Desert Tortoise Research Natural Area ACEC.

The DRECP LUPA includes goals, objectives, and conservation and management actions related to biological resources. The primary biological resources goals are landscape and habitat connectivity, ecosystem and ecological function, and species conservation. The following goals and objectives of the DRECP LUPA are applicable to the Project:

> **Goal 1:** As part of a desert-wide landscape design, on BLM land provide a mosaic of vegetative types with habitat linkages that is adaptive to changing conditions and includes temperature and precipitation gradients, elevation gradients, and a diversity of geological facets that provide for movement and gene flow and accommodate range shifts and expansions in response to climate change.
>
> > ***Objective 1.1:*** Conserve focus and BLM Special Status Species habitat, vegetation types, and ecological processes of the Mojave and Sonoran deserts in each ecoregional subarea in the BLM LUPA Decision Area.
> >
> > ***Objective 1.3:*** Protect and maintain the permeability of landscape connections between neighboring mountain ranges to allow passage of resident wildlife by protecting key movement corridors or reducing barriers to movement within intermountain connections.
> >
> > ***Objective 1.4:*** Conserve unique landscape features, important landforms, and rare or unique vegetation types identified within the BLM Decision Area, including:
> >
> > - Desert riparian and wetland resources in the planning area, including riparian habitat (including microphyll woodlands), desert playas, and seeps/springs;
> > - Areas of dense Joshua Tree woodland;
> > - Areas with unique geological activity and/or paleontological interest; and
> > - Rare vegetation type alliances

Goal 2: Promote ecological processes in the BLM Decision Area that sustain vegetation types and focus and BLM Special Status Species and their habitat.

Objective 2.1: Maintain natural surface- and ground-water processes in the planning area, including runoff regimes, percolation, storage, and recharge that serve to maintain vegetation types and focus and BLM Special Status Species habitat, including riparian, playa, seeps/springs, and desert wash resource elements.

Objective 2.2: Maintain hydrogeomorphic processes that create habitat diversity, channel bank habitat and regeneration sites (through sediment transport, incision, and sand/silt deposition) for plants and wildlife, including single-thread channels, compound channels, and distributary networks located on alluvial fans.

- Protect streams and washes, wetlands, and seasonal wetlands in all watersheds in the planning area.
- Restore natural flow stream morphology at modified sites that are not in proper functioning condition.

Objective 2.4: Conserve undeveloped and natural areas within the watersheds of important riverine and drainage systems.

Objective 2.6: Minimize or prevent new infestations and, where feasible in target areas, decrease from existing conditions invasive plant species that negatively affect vegetation types and focus and BLM Special Status Species. Target invasive plant species include tamarisk (*Tamarix* spp.), Sahara mustard (*Brassica tournefortii*), African mustard (*Malcolmia africana*), arundo or giant reed (*Arundo donax*), Russian thistle (*Salsola* spp.), and non-native grasses.

Goal 3: Desert Tortoise Conservation Areas. Within each desert tortoise recovery unit (USFWS 2011), on BLM land within the LUPA Decision Area, maintain well-distributed populations through a network of conservation lands that provide sufficient contiguous size and configuration to provide long-term population viability, connectivity, growth in recovery unit population size, and increases in recovery unit population distribution.

Objective 3.1: Maintain no net loss in the quantity of conserved desert tortoise habitat, on BLM land in the LUPA Decision Area, within each Tortoise Conservation Area in support of long-term desert tortoise population viability (Recovery Criterion 3 in the Desert Tortoise 2011 Recovery Plan).

Objective 3.2: Tortoise Conservation Areas Contribute to increasing rates of population change for desert tortoises over at least 25 years (a single tortoise generation).

Objective 3.3: Increase in the distribution of desert tortoises throughout each Tortoise Conservation Area, on BLM land within the LUPA Decision Area over at least 25 years (Recovery Criterion 2 in the Desert Tortoise 2011 Recovery Plan (USFWS 2011)).

3.4.3.2 State

California Environmental Quality Act Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed under FESA or CESA may be considered rare or endangered if it can be shown to meet certain criteria for rarity. These

criteria have been modeled after the definition of FESA and the section of the California Fish and Game Code that discusses rare or endangered plants or animals. This section was included in the CEQA Guidelines primarily for situations in which a public agency is reviewing a project that may have a significant effect on a species that meets the CEQA criteria but has not been listed by CDFW or USFWS. CEQA provides the ability to protect species from potential project impacts until the respective agencies have the opportunity to designate the species' protection.

The CEQA Guidelines also identify other locally or regionally significant resources, including natural communities or habitats, as sensitive resources. CEQA requires an assessment of such communities and potential project impacts. Natural communities identified by CDFW as sensitive are considered to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general and area plans often identify natural communities.

California Department of Fish and Wildlife

CDFW administers a number of laws and programs designed to protect fish and wildlife resources under the California Fish and Game Code, such as CESA (Fish and Game Code Section 2050 et seq.), Fully Protected Species (Sections 3511, 4700, 5050, and 5515), the Native Plant Protection Act (Sections 1900–1913), and the Lake and Streambed Alteration Agreement Program (Fish and Game Code Sections 1600–1616). CDFW also manages the California Species of Special Concern list.

California Endangered Species Act

In 1984, California implemented CESA, which prohibits the take of state-listed endangered and threatened species. Habitat destruction is not included in the state's definition of take. Section 2090 requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. CDFW administers the law and authorizes take through California Fish and Game Code Section 2081 agreements (except for designated "Fully Protected Species"). Unlike federal protections under FESA, CESA protections apply to candidate species that have been petitioned for listing.

The California Native Plant Protection Act (see below) directs CDFW's plant listing actions under CESA.

Native Plant Protection Act

The intent of California Fish and Game Code Sections 1900–1913, also known as the Native Plant Protection Act, is to preserve, protect, and enhance endangered or rare native plants in California. This law directs CDFW to establish criteria for determining what native plants are rare or endangered. Under Section 1901, a species is considered endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is considered rare when, though not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. The Native Plant Protection Act also directs the California Fish and Game Commission to adopt regulations governing the taking, possessing, propagation, or sale of any endangered or rare native plant.

Fully Protected Species—Fish and Game Code Sections 3511, 4700, 5050, 5515

Fully Protected Species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. The designation of Fully Protected status was the state's initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. In 2011, the Natural Community Conservation Planning Act was amended to allow CDFW to authorize incidental take of fully protected species as part of an approved NCCP.

Western Joshua Tree Conservation Act

The Western Joshua Tree Conservation Act (California Fish and Game Code Section 1927.7) prohibits the importation, export, take, possession, purchase, or sale of any western Joshua tree in California unless authorized by CDFW. This law creates a streamlined framework for permitting certain development activities that have the potential to result in incidental take of western Joshua tree while conserving the species at a landscape scale by collecting mitigation fees or requiring mitigation activities. Collected mitigation fees are used for the acquisition and conservation of western Joshua tree habitat and other actions.

Riparian Communities in California

Riparian communities have a variety of functions, including providing high-quality habitat for resident and migrant wildlife, streambank stabilization, and runoff water filtration. Throughout the U.S., riparian habitats have declined substantially in extent and quality compared with their historical distribution and condition. These declines have increased concerns about dependent plant and wildlife species, leading federal agencies to adopt policies to arrest further loss.

Lake and Streambed Alteration Program

CDFW regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. California Fish and Game Code Section 1602 requires that CDFW be notified of lake or stream alteration activities. If after notification is complete, CDFW determines that the activity may substantially affect an existing fish and wildlife resource, CDFW has the authority to issue a Lake and Streambed Alteration Agreement under Section 1603 of the Fish and Game Code. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. These requirements may include avoidance or minimization of heavy-equipment use within stream zones, limitations on work periods to avoid impacts on wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses.

Species of Special Concern

CDFW maintains lists of candidate-endangered species and candidate-threatened species. California candidate species are afforded the same level of protection as listed species. California also designates Species of Special Concern, which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species or Fully Protected Species but may be added to official lists in the future. CDFW intends the Species of Special Concern list to be a management tool for consideration in future land use decisions.

California Code of Regulations, Chapter 5, Section 460

Chapter 5, Section 460 of the California Code of Regulations, regarding certain fur-bearing mammals, stipulates that fisher, marten, river otter, desert kit fox, and red fox may not be taken at any time. Therefore, the incidental take of these species is prohibited and CDFW must be consulted before the start of any activities that may result in their take.

Fish and Game Code, Sections 3503 and 3503.5

California Fish and Game Code Section 3503 provides that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 provides that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey), or the nest or eggs of any such bird, except as otherwise provided by state code or any regulation adopted pursuant thereto. Construction activities that result in the incidental loss of fertile eggs or nestlings, or that otherwise lead to nest abandonment and/or reproductive failure, are prohibited under this statute.

West Mojave Desert Ecological Reserve

The West Mojave Desert Ecological Reserve is an approximately 18,000-acre property that was obtained to preserve a representative portion of the western Mojave Desert and to protect it from the damaging influences of off-road vehicle use and sheep grazing. The property was designated as an ecological reserve by the California Fish and Game Commission in 1988. The West Mojave Desert Ecological Reserve supports both Mohave ground squirrel and desert tortoise and is managed by CDFW for the protection of these and many other special-status species. Approximately 0.6 mile of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment is located on two properties within the West Mojave Desert Ecological Reserve.

State Water Resources Control Board

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board regulates the protection of waters of the state through Section 13050[e] of the California Water Code. *Waters of the state* are broadly defined by the Porter-Cologne Water Quality Control Act to mean any surface water or groundwater, including saline waters within the boundaries of the state. Under this definition, isolated wetlands that may not be subject to regulations under federal law are considered waters of the state and regulated accordingly. The California Water Boards are in the process of updating the state Wetland Area Protection Policy, which includes a proposed wetland definition.

NPDES General Permit for Discharges of Stormwater Associated with Construction Activities (Order 2022-0057-DWQ)

The National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2022-0057-DWQ; NPDES Permit CAS000002), commonly referred to as the “Construction General Permit,” is required for projects that would disturb 1 acre or more of soil during construction. The Construction General Permit requires dischargers to design, install, and maintain effective erosion and sediment controls to minimize the discharge of pollutants through the development and implementation of a site-specific stormwater pollution prevention plan (SWPPP) that includes

specific best management practices (BMPs). For additional information about SWPPP requirements, see Section 3.10.2.2, *State*, in Section 3.10, *Hydrology and Water Quality*.

3.4.3.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Project components; therefore, the Project is not subject to local discretionary regulations. Pursuant to CPUC General Order 131-D, Section XI.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Therefore, the local regulations below are provided only for informational purposes.

Kern County

Kern County General Plan

The Kern County General Plan is a policy document designed to give long-range guidance to decision-makers affecting the growth and resources of the unincorporated Kern County jurisdiction. The Land Use, Open Space, and Conservation Element of the Kern County General Plan provides for a variety of land uses for future economic growth while also assuring the conservation of Kern County's agricultural, natural, and resource attributes through goals, policies, and implementation measures that apply to all discretionary projects. In addition, the Energy Element is a comprehensive document that defines critical energy-related issues facing the county and sets forth goals, policies, and implementation measures to "protect the County's energy resources and encourage orderly energy development while affording the maximum protection for the public's health, safety, and the environment" (Kern County 2009).

The following policies and implementation measures are related to biological resources.

> ***Policy 7:*** The processing of all discretionary energy project proposals shall comply with California Environmental Quality Act (CEQA) Guidelines directing that the environmental effects of a project must be taken into account as a part of project consideration.
>
> ***Policy 8:*** The County should work closely with local, State, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.
>
> ***Policy 9:*** The County should develop and implement measures which result in long-term compensation for wildlife habitat, which is unavoidably damaged by energy exploration and development activities.
>
> ***Policy 27:*** Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.
>
> ***Policy 28:*** County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.
>
> ***Policy 29:*** The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through

the use of conservation plans and other methods promoting management and conservation of habitat lands.

Policy 30: The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, State, and federal programs concerning endangered species conservation issues.

Policy 31: Under the provisions of the California Environmental Quality Act (CEQA), the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.

Policy 32: Riparian areas will be managed in accordance with United States Army Corps of Engineers, and the California Department of Fish and Game rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measure Q: Discretionary projects shall consider effects to biological resources as required by the California Environmental Quality Act.

Implementation Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to the California Environmental Quality Act.

Implementation Measure S: Pursue the development and implementation of conservation programs with State and federal wildlife agencies for property owners desiring streamlined endangered species mitigation programs.

San Bernardino County

San Bernardino Countywide Plan

The San Bernardino Countywide Plan contains long-term goals and policies to guide San Bernardino County decisions, investments, and improvements. The plan's Natural Resources Element (San Bernardino County 2020) provides management guidance and establishes policies to preserve natural resources. The following policies in the San Bernardino Countywide Plan are related to biological resources:

Policy NR-5.1: Coordinated habitat planning. We participate in landscape-scale habitat conservation planning and coordinate with existing or proposed habitat conservation and natural resource management plans for private and public lands to increase certainty for both the conservation of species, habitats, wildlife corridors, and other important biological resources and functions; and for land development and infrastructure permitting.

Policy NR-5.2: Capacity for resource protection and management. We coordinate with public and nongovernmental agencies to seek funding and other resources to protect, restore, and maintain open space, habitat, and wildlife corridors for threatened, endangered, and other sensitive species.

Policy NR-5.3: Multiple-resource benefits. We prioritize conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character.

Policy NR-5.4: Off-base recovery efforts. We coordinate with military installations to facilitate off-base recovery of threatened and endangered species and landscape-scale conservation.

Policy NR-5.5: Mitigation and future responsibilities. We require that new development satisfy habitat conservation responsibilities without shifting conservation responsibilities onto military property.

Policy NR-5.6: Mitigation banking. We support the proactive assemblage of lands to protect biological resources and facilitate development through private or public mitigation banking. We require public and private conservation lands or mitigation banks to ensure that easement and fee title agreements provide funding methods sufficient to manage the land in perpetuity.

Policy NR-5.7: Development review, entitlement, and mitigation. We comply with state and federal regulations regarding protected species of animals and vegetation through the development review, entitlement, and environmental clearance processes.

Policy NR-5.8: Invasive species. We require the use of non-invasive plant species with new development and encourage the management of existing invasive plant species that degrade ecological function.

San Bernardino County Code of Ordinances Chapter 88.01

Chapter 88.01 of the San Bernardino County Code of Ordinances provides regulations and guidelines for the management of plant resources in unincorporated areas of San Bernardino County to sustain plant life in the county through appropriate management; to conserve native plant life heritage; to regulate removal of native trees and plants; to provide a uniform standard for appropriate removal of native trees and plants; to protect and maintain water productivity and quality; to preserve habitats for rare, endangered, or threatened plants; and to protect animals with limited or specialized habitats.

Chapter 88.01 of the San Bernardino County Code of Ordinances prohibits the removal of the following desert native plants or any part of them except the fruit, except under a tree or plant removal permit:

- The following desert native plants with stems 2 inches or greater in diameter or 6 feet or greater in height:
  - Smoketree (*Dalea spinosa*).
  - All species of mesquite (*Prosopis* sp.).
- All species of the family Agavaceae (century plants, nolinas, yuccas).
- Creosote rings, 10 feet or greater in diameter.
- All Joshua trees.
- Any part of any of the following species, whether living or dead:
  - Desert ironwood (*Olneya tesota*).
  - All species of mesquite.
  - All species of palo verdes (*Cercidium* sp.).

The following trees may only be removed with an approved tree or plant removal permit issued in compliance with Section 88.01.050 of the San Bernardino County Code of Ordinances:

- *Native Trees:* A living, native tree with a 6-inch or greater stem diameter or 19 inches in circumference measured 4.5 feet above natural grade level.
- *Palm Trees:* Three or more palm trees in linear plantings, which are 50 feet or greater in length with established windrows or parkway plantings. These are considered to be heritage trees and are subject to the provisions of Chapter 88.01 regarding native trees.

In addition, the removal of vegetation within 200 feet of the bank of a stream, or in an area indicated as a protected riparian area on an overlay map or Specific Plan, requires the approval of a tree or plant removal permit in compliance with Section 88.01.050.

City of California City General Plan

The City of California City General Plan is a long-range planning document that is meant to guide the creation of a livable, viable, and visually attractive community through efficient and effective continued growth and sustainable development. The Open Space and Conservation Element of the California City General Plan contains goals, policies, and implementation measures that aim to preserve and protect the city's natural resources including water, floodplains, mineral resources, air quality, sensitive biological resources, and historical and cultural resources. The following policies and implementation measures in the Conservation Element are related to biological resources (City of California City 2009):

> ***Policy:*** Develop open-space corridors along utility easements, drainages, slopes, and other natural features, whenever possible.
>
> ***Policy:*** To conserve open space, the Controlled Development land use designation as indicated on the General Plan Land Use Plan will continue to apply to outlying areas where infrastructure and public services are not provided or where there are significant biological resources, drainage areas, or mineral resources.
>
> *Implementation Measure OS-1:* The City shall preserve open space in the portions of the General Plan Planning Area that are proposed for urban development by implementing the following measures:
>
> - Develop open space corridors along utility easements, drainage-ways, slopes, and, whenever feasible, other natural features.
> - Utilize clustering to encourage habitat conservation and the provision of common open space areas, open space corridors, or recreational areas.
> - Where feasible, as part of discretionary project approval, require that adequate pedestrian facilities and bicycle trails be incorporated into new residential and commercial development projects.
> - Encourage commercial development projects to incorporate common spaces, such as squares or plazas.
>
> ***Policy:*** Protect the community's environmental setting from deterioration, compromising the quality of life enjoyed by the existing and future residents.

Policy: Protect sensitive vegetation and wildlife species, in accordance with State and federal laws and regulations, and to provide for maintenance of supportive habitat for such species in balance with the needs of humans.

Policy: Maintain and promote the retention of natural setting and use of native or adaptable vegetation.

Policy: Encourage the preservation of Joshua trees, known wildflower displays, or other biologically sensitive flora determined during biological surveys.

Policy: Continue to require biota studies as a requirement of DRC [Development Review Committee] for all new subdivisions, large apartment complexes, commercial and industrial projects.

Implementation Measure C-13: The City shall require the preservation of biological resources by implementation of the following measures:

- Prior to issuance of a grading or building permit, new development proposals, including on previously disturbed land, shall be required to complete a general biological resources assessment to identify the presence of any sensitive biological resources, including but not limited to sensitive habitat, sensitive plant species, and sensitive wildlife species, jurisdictional drainage features, and wildlife corridors on the project site. Recommendations and/or mitigation measures shall be incorporated into project as conditions of approval.

3.4.4 Applicant Proposed Measures and Best Management Practices

3.4.4.1 Applicant Proposed Measures

SCE has identified the following Applicant proposed measures (APMs) to minimize impacts on biological resources from the Project. The impact analysis assumes that the APMs would be implemented as part of the Project to reduce impacts on biological resources as discussed below.

- **APM BIO-GEN-1: Pre-construction biological clearance surveys and monitoring.** Pre-construction clearance surveys will be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, to avoid or minimize impacts on special-status plants and wildlife species, habitat, nesting birds and other sensitive biological resources in areas with the potential for resources to be present. Sensitive resources identified during the clearance survey will be either:
  - Flagged for avoidance;
  - Moved to outside impact areas;
  - Avoided by implementing procedures to avoid impacts to individuals while impacting habitat (e.g., burrows, dens, etc.);
  - Or documented based on permit authorizations.

  Specific details on the pre-construction survey requirements may be found within measures for each individual species. Where special-status species (e.g., reptiles, birds, mammals, and bat roosts) or unique resources (defined by regulations and local conservation plans) are

known to occur and there is a potential for significant impacts, qualified biologists will monitor construction activities to ensure that impacts to special-status species, sensitive vegetation types, wildlife habitat, and unique resources are avoided and minimized.

- **APM ENV-GEN-1 WEAP: Worker's Environmental Awareness Training Program.** All workers on the Proposed Project site shall be required to attend a Worker's Environmental Awareness Training Program (WEAP). Training shall inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. The WEAP training will include, at a minimum, the following topics so crews will understand their obligations:
  - ESA [Endangered Species Act] boundaries
  - Housekeeping (Trash and equipment cleaning)
  - Safety
  - Work stoppage
  - Communication Protocol
  - Consequences of non-compliance

- **APM BIO-AVI-2: Nesting Bird Management Plan.** SCE shall prepare a Nesting Bird Management Plan (NBMP) in coordination with the CPUC, Bureau of Land Management (BLM), CDFW, and USFWS. The NBMP shall describe methods to minimize potential Proposed Project effects to nesting birds and avoid any potential for unauthorized take. Proposed Project-related disturbance including construction and pre-construction activities shall not proceed within 300 feet of active nests of common bird species or 500 feet of active nests of raptors or special-status bird species (except for golden eagle as described in APM BIO-AVI-4) until approval of the NBMP by the CPUC and BLM in consultation with the CDFW and USFWS.

  NBMP Content. The NBMP shall include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species; (2) a notification procedure for buffer distance reductions should they become necessary; (3) a rigorous monitoring protocol, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any Proposed Project-related effects to nesting birds will be minimized; and (4) a protocol for documenting and reporting any inadvertent contact or effects to birds or nests. The paragraphs below describe the NBMP requirements in further detail.

  Background. The NBMP shall include the following:

  1. A summary of applicable state and federal laws and regulations, including definition of what constitutes a nest or active nest under state and federal law.
  2. A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations.
  3. A list of bird species potentially nesting on or near the ROW or other work areas, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species. This section will also note any species that do not require avoidance measures (e.g., rock pigeons).

4. A list of the types of Proposed Project construction activities that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity.
5. Clearing of any vegetation, site preparation in open or barren areas, or other Proposed Project-related activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible.

Pre-construction nest surveys. Pre-construction nest surveys will be conducted prior to any construction activities scheduled during the breeding period. For the Proposed Project, the breeding period will be defined as January 1 through August 31. The NBMP shall describe the proposed field methods, survey timing, and qualifications of field biologists. Field biologist qualifications will be subject to review by the CPUC and BLM. The avian biologists conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Nest surveys will focus on visual searches for nest locations and observations of bird activities and movement to detect nesting activity (e.g., carrying nest materials or food, territorial displays, courtship behavior). Surveys shall be conducted in accordance with the following guidelines.

1. Surveys shall cover all potential nesting habitat within the ROW or other work areas within 500 feet of these areas for raptors and 300 feet for non-raptors.
2. Pre-construction surveys shall be conducted for each work area, no longer than 10 days prior to the start of construction activity. On the first day of construction at any given site, a qualified Avian Biologist will perform a pre-construction "sweep" to identify any bird nests or other resources that may have appeared since the 10-day survey.
3. SCE shall provide the CPUC and BLM a report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity of the surveyor(s); a list of species observed; and electronic data identifying nest locations and the boundaries of buffer zones. The electronic data set will be updated following each preconstruction nest survey throughout the nesting season. The format and contents of this report will be described in the draft NBMP and will be subject to review and approval by the CPUC and BLM.

Nest Buffers and Acceptable Activities. The NBMP shall specify measures to delineate buffers on the work site, to consist of clearly visible marking and signage. Buffer locations shall be communicated to the construction contractor and shall remain in effect until formally discontinued (when each nest is no longer active). In addition, the NBMP shall specify measures to ensure the buffers are observed, including a direct communication and decision protocol to stop work within buffer areas. In some cases, active nests may be found while work is underway. Therefore, the NBMP shall include a protocol for stopping ongoing work within the buffer area, securing the work site, and removing personnel and equipment from the buffer.

The NBMP shall describe proposed measures to avoid take or adverse effects to nests, such as buffer distances from active nests. These measures shall be based on the specific nature of the bird species and conservation status, and other pertinent factors. The NBMP will identify bird species (or groups of species) that are relatively tolerant or intolerant of human activities and specify smaller or larger buffer distances as appropriate for each species. If no information is available to specify a buffer distance for a species, then the NBMP shall specify 300 feet as a standard buffer distance, and 500 feet for raptors and special-status species. Nest management for listed threatened or endangered species will be prescribed in a USFWS Biological Opinion, CDFW Incidental Take Permit (ITP), or both. All applicable avoidance measures, including

buffer distances, must be continued until nest monitoring (below) confirms that the nestlings have fledged and dispersed, or the nest is no longer active. For each special-status species potentially nesting within or near Proposed Project work areas, the NBMP shall specify applicable buffers and any additional nest protection measures, specialty monitoring, or restrictions on work activities, if needed.

The NBMP shall identify acceptable work activities within nest buffers (e.g., pedestrian access for inspection or BMP repair) including conditions and restrictions, and any monitoring required. The NBMP shall include pictorial representation showing buffer distances for ground buffers, vertical helicopter buffers, and horizontal helicopter buffers for nests near the ground and nests in towers.

Nest Buffer Modification or Reduction. At times, SCE or its contractor may propose buffer distances different from those approved in the NBMP. Buffer adjustments shall be reviewed and recommended by a qualified avian biologist, who has been approved by the CPUC and BLM in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying the CPUC, BLM, CDFW, and USFWS of any planned adjustments to nest buffers. Separate and distinct procedures will be provided for special-status birds. The NBMP will list the information to be included in buffer reduction notifications in a standardized format.

Nest deterrents. The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on Proposed Project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment. It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals. In the event that an active nest is located on Proposed Project facilities, materials or equipment, SCE will avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active.

Communication. The NBMP shall specify the responsibilities of construction monitors in regards to nests and nest issues, and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communicated from nest monitors to construction monitors, so that any needed actions can be taken immediately.

The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also shall describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP will specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval and approval process prior to removal.

Monitoring. SCE shall be responsible for monitoring the implementation, conformance, and efficacy of the avoidance measures (above). The NBMP shall include specific monitoring measures to track any active bird nest within or adjacent to Proposed Project work areas, bird nesting activity, Proposed Project-related disturbance, and outcome of each nest. For nests with reduced buffers, SCE shall monitor each nest until nestlings have fledged and dispersed or until the nest becomes inactive. Nests with default buffers do not require further monitoring

once construction work is completed in the area. New nests discovered after work completion in an area will not require monitoring. In addition, monitoring shall include pre-construction surveys, daily sweeps of work areas and equipment, and any special monitoring requirements for particular activities (tree trimming, vegetation removal, etc.) or particular species (noise monitoring, etc.). Nest monitoring shall continue throughout the breeding season during each year of the Proposed Project's construction activities.

Reporting. Throughout the construction phase of the Proposed Project, nest locations, Proposed Project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to CPUC monitors on a daily basis in the Field Reporting Environmental Database (FRED). All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to CPUC monitors. In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, SCE will submit an annual NBMP report to the CPUC, BLM, CDFW, and USFWS.

Implementation locations*:* Project-wide.

- **APM BIO-AVI-3: Burrowing Owl.**

  Pre-construction survey. A pre-construction, focused burrowing owl survey will be conducted no more than 30 days prior to initial start of construction within habitat to determine if any occupied burrows are present. If occupied burrows are found, adequate buffers shall be established around burrows. Adequate buffers will be determined by a Project Avian Biologist based upon field conditions and resource agency guidelines for wintering burrows and breeding season burrows.

  Prepare Burrowing Owl Management Plan. SCE will develop a Burrowing Owl Management Plan for the Proposed Project. The Plan will include information related to:

  1. Assessment of burrow suitability;
  2. Replacement burrows;
  3. Methods for relocation;
  4. Monitoring and reporting;
  5. Implementation locations.

  Conduct surveys and avoidance for burrowing owl. Burrowing owl surveys shall be conducted in accordance with the most current CDFW guidelines (CDFG, 2012; or updated guidelines as they become available). SCE shall take measures to avoid impacts to any active burrowing owl burrow within or adjacent to a work area. The default buffer for a burrowing owl burrow is 300 feet for ground construction, and 300 feet horizontal and 200 feet vertical for helicopter construction. The Nesting Bird Management Plan will specify a procedure for adjusting this buffer, if needed. Binocular surveys may be substituted for protocol field surveys on private lands adjacent to the Proposed Project site only when SCE has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission.

  If active burrowing owl burrows are located within Proposed Project work areas, SCE may passively relocate the owls, by preparing and implementing a Burrowing Owl Passive Relocation Plan, as described below. SCE shall prepare a draft Burrowing Owl Passive Relocation Plan for review and approval by CPUC and BLM in consultation with CDFW and

USFWS prior to the start of any ground-disturbing activities. No passive relocation of burrowing owls shall be permitted during breeding season, unless a qualified biologist verifies through noninvasive methods that an occupied burrow is not occupied by a mated pair, and only upon authorization by CDFW. The Plan shall include, but not be limited to, the following elements:

Assessment of Suitable Burrow Availability. The Plan shall include an inventory of existing, suitable, and unoccupied burrow sites within 300 feet of the affected Proposed Project work site. Suitable burrows will include inactive desert kit fox, Mohave ground squirrel, or desert tortoise burrows that are deep enough to provide suitable burrowing owl nesting sites, as determined by a qualified biologist. If two or more suitable and unoccupied burrows are present in the area for each burrowing owl that will be passively relocated, then no replacement burrows will need to be built.

Replacement Burrows. For each burrowing owl that will be passively relocated, if fewer than two suitable unoccupied burrows are available within 300 feet of the affected Proposed Project work site, then SCE shall construct at least two replacement burrows within 300 feet of the affected Proposed Project work site, or in suitable locations within ¼ mile when suitable locations within 300 feet are not available. Burrow replacement sites shall be in areas of suitable habitat for burrowing owl nesting, and subject to minimal human disturbance and access. The Plan shall describe measures to ensure that burrow installation or improvements would not affect sensitive species habitat or any burrowing owls already present in the relocation area. The Plan shall provide guidelines for creation or enhancement of at least two natural or artificial burrows for each active burrow within the Proposed Project disturbance area, including a discussion of timing of burrow improvements, specific location of burrow installation, and burrow design. Design of the artificial burrows shall be consistent with CDFW guidelines (CDFG, 2012; or more current guidance as it becomes available) and shall be approved by the CPUC, BLM, CDFW, and USFWS.

Methods. Provide detailed methods and guidance for passive relocation of burrowing owls, outside the breeding season. An occupied burrow may not be disturbed during the nesting season (generally, but not limited to, February 1 to August 31), unless a qualified biologist determines, by non-invasive methods, that it is not occupied by a mated pair. Passive relocation will include installation of one-way doors on burrow entrances that will let owls out of the burrow but will not let them back in. Once owls have been passively relocated, burrows will be carefully excavated by hand and collapsed by, or under the direct supervision, of a qualified biologist.

Monitoring and Reporting. Describe monitoring and management of the replacement burrow site(s), and provide a reporting plan. The objective shall be to manage the relocation area for the benefit of burrowing owls, with the specific goal of maintaining the functionality of the burrows for a minimum of two years. Monitoring reports shall be available to the CPUC and BLM on a weekly basis.

Implementation locations*:* Project-wide

- **APM BIO-HERP-1: Desert Tortoise**

  Pre-construction surveys/Construction monitoring. Prior to initial ground-disturbing activities, a biological monitor under the supervision of a USFWS- or CDFW-approved biologist—with experience monitoring and handling desert tortoise—will conduct a pre-activity survey in all work areas within potential desert tortoise habitat, plus an approximately 100-foot buffer. All desert tortoise burrows within the pre-activity survey area (including

desert tortoise pallets) will be prominently flagged at that time so that they may be avoided during work activities.

An approved biologist will be onsite to monitor vegetation removal and grading and provide regular inspections of all other construction activities within desert tortoise habitat. The approved biologist will have the authority to halt all non-emergency actions (as soon as safely possible) that may result in harm to the desert tortoise and will assist in the overall implementation of APMs for the tortoise.

In the event a desert tortoise is encountered in the work area, all work will cease, and the approved biologist will be contacted. Work will not commence until the animal has voluntarily moved to a safe distance away from the work area. If it does not move on its own within 15 minutes, an authorized biologist may remove and relocate the animal to a safe location if authorized under existing permit conditions. No tortoise will be handled except under authorization from the USFWS and CDFW. Encounters with desert tortoise will be documented and provided to the appropriate wildlife resource agencies. In the event a dead or injured desert tortoise is observed, the approved biologist will be responsible for notifying SCE's Herpetologist and reporting the incident to the wildlife resource agencies.

Avoid and minimize impacts. All Proposed Project activities located within areas identified as desert tortoise habitat shall implement the following avoidance and minimization measures:

1. Under Vehicle Checks. Desert tortoises commonly seek shade during the hottest times of the day. Employees working within the geographic range of this species will be required to check under their equipment or vehicles before they are moved. If desert tortoises are encountered, the vehicle will not be moved until the tortoise has voluntarily moved away from the equipment or vehicle.
2. Disposal of Trash. Trash and food items will be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators, such as common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs (*Canis lupus familiaris*).
3. Pets Prohibited. Employees will not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant.
4. Vehicle Travel. During construction-related activities, motor vehicles will be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Proposed Project footprint. Motor vehicle speeds will not exceed 15 miles per hour on Proposed Project-specific construction routes and temporary work areas within habitat for desert tortoise.
5. Trapped Animal Prevention. All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to desert tortoise will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping animals. At the start and end of each workday, and just before backfilling, all excavations will be inspected for trapped animals. If found, trapped animals will be removed by the qualified biologist and relocated to outside the Proposed Project footprint, as required in all applicable permits or habitat conservation plans.

Coordinate with agencies. SCE will obtain take coverage and consult with the USFWS, CDFW, and/or land management agencies. In addition to obtaining the necessary permits and authorizations, which may include conducting protocol surveys as required by the agencies, the Proposed Project will be included in SCE's programmatic raven management plan upon

completion of construction to minimize the effects of raven predation on desert tortoises as a result of SCE infrastructure.

- **APM BIO-MAM-1: Mohave Ground Squirrel**

  Coordinate with CDFW. SCE intends to apply for a state Incidental Take Permit (ITP) for Mohave ground squirrel through the California Department of Fish and Wildlife (CDFW). In collaboration with CDFW, SCE will develop construction minimization measures and habitat conservation measures during the 2081 (b) ITP consultation.

  Permit conditions that will be implemented include, but are not limited to:

  1. Relocation plan. An MGS [Mohave Ground Squirrel] relocation plan will be developed by SCE and approved by CDFW prior to the beginning of Proposed Project activities in identified MGS habitat. The relocation plan will include, but not be limited to, survey methods, timing, burrow excavation methods and implementation area, release locations, and identification of wildlife rehabilitation or veterinary facilities for injured animals. The designated biologist will be responsible for the capture, handling, and relocation of MGS.
  2. Designated biologist. A qualified MGS biologist authorized by CDFW to handle MGS will be on-site or available for a same day response when Proposed Project activities occur in identified MGS habitat.
  3. Biological monitors. Qualified biological monitors will monitor all construction activities in occupied habitat and areas adjacent to occupied habitat. The qualified biologist will have the authority to stop all activities with the potential to impact MGS. The qualified biologist will immediately contact the designated biologist for guidance in the event MGS are encountered. Work will not resume in that area until appropriate measures have been implemented.
  4. Pre-construction surveys. Prior to initial ground-disturbing activities, a qualified MGS biologist will conduct pre-construction surveys within identified MGS habitat areas. The preconstruction surveys will identify MGS individuals or burrows for avoidance.
  5. Burrow avoidance. A qualified biologist will demarcate [e.g., flagging, signage, fencing, construction maps, etc.] avoidance areas around MGS burrows as needed to prevent impacts.
  6. Exclusion Fencing. Temporary Exclusion Fencing may be used to avoid MGS burrows or exclude MGS from work areas when necessary. The designated biologist will oversee exclusion fencing installation to ensure there are no impacts to MGS. The integrity of the exclusion fencing will be checked regularly and repaired as needed.
  7. Vehicle Travel. During construction-related activities, motor vehicles will be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Proposed Project footprint. Motor vehicle speeds along Proposed Project specific construction routes and temporary work areas within MGS habitat will not exceed 15 miles per hour.
  8. Trapped animal prevention. All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to MGS will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping animals. At the start and end of each workday, and just before backfilling, all excavations will be inspected for trapped animals. Any MGS found will be allowed to escape unimpeded. If

an MGS is trapped and does not leave on its own, the designated biologist will move the animal according to the ITP conditions.

9. Cover Materials. All pipes or other construction materials or supplies shall be covered or capped in storage or laydown areas at the end of each workday to prevent entrapping animals. No pipes or tubing of sizes or inside diameters ranging from 3 to 10 inches shall be left open either temporarily or permanently. All pipes or other construction materials shall be inspected for wildlife prior to moving or installing. If present, MGS will be allowed to leave on their own accord or will be removed by the designated biologist according to the ITP conditions.
10. Trash disposal. Trash and food items will be contained in closed containers and removed daily to reduce attracting predators.
11. Pets Prohibited. Employees will not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant.

- **APM BIO-MAM-2: Desert Kit Fox Preconstruction surveys.** Surveys for desert kit fox shall be conducted within 14 days prior to the start of construction. The survey area shall include the Proposed Project disturbance areas plus a 300-foot buffer during the breeding season (February 1 through April 30) and a 100-foot buffer outside the breeding season. Potentially occupied burrows in Proposed Project disturbance areas and the survey buffer shall be mapped and Qualified Biologist(s) shall utilize tracking stations and/or wildlife cameras to determine whether the burrows are occupied. If a burrow is determined to be occupied by desert kit fox or other special-status mammal species during the breeding season, the burrow shall be demarcated with a 300-foot buffer. If a burrow is determined to be occupied outside the breeding season it shall be demarcated with a 100-foot buffer. Burrows determined to be unoccupied shall be demarcated with a 50-foot buffer. If occupied burrows are found in Proposed Project disturbance areas and cannot be avoided, Qualified Biologist(s) shall passively relocate the occupying animals through the use of one-way doors at burrow entrances that allow the animals to leave on their own. Once vacant, burrows shall be excavated by hand and collapsed. Passive relocation will be avoided from February 1 through April 30 and shall not occur while young are in the burrow and still dependent upon their parents. The CDFW shall be consulted prior to any relocation of desert kit fox during the breeding season. Additionally, the following measure will be implemented to minimize the likelihood of distemper transmission:

  – Any documented kit fox mortality shall be reported to the CDFW within 24 hours of identification. If a dead kit fox is observed, it shall be retained and protected from scavengers until the CDFW determines if the collection of necropsy samples is justified.

- **APM BIO-RES-1: Develop and Implement Habitat Restoration Plan (HRP).** Temporary impacts to regulated species' habitats, plant species, and vegetation communities shall be restored. Regulated species and vegetation communities include all species designated as threatened, endangered or rare, sensitive, or of concern by resource or land agencies. Species and vegetation communities that require restoration will be determined by the resource agencies through the permitting process.

  Temporary impacts to all other categories of land such as private lands or disturbed areas (e.g., agricultural lands, existing roads, OHV [off-highway vehicle] trails, grazing areas, trash/dump site, etc.) shall only be subject to the requirements of the Storm Water Pollution Prevention Plan (SWPPP) and the Invasive Plant Management Plan (IPMP, APM BIO-RES-2).

No additional goals, objectives, or success criteria regarding habitat condition are required for these sites.

SCE shall develop and implement a Habitat Restoration Plan (HRP). SCE will consult with appropriate agencies during development of the HRP and implement the HRP in conjunction with applicable permit conditions and mitigation measures. The HRP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction. Invasive plant management will be performed in conjunction with the HRP per the Invasive Plant Management Plan (BIO-RES-2).

Habitat Restoration Plan. For all restoration sites, the HRP shall include:

1. Restoration goals and objectives based on vegetation type and jurisdictional status of each site.
2. Quantitative restoration success criteria.
3. Implementation details as applicable. Details may include topsoil stockpiling and handling, postconstruction site preparation, soil decompaction and recontouring, planting and seeding palettes to include only native, locally sourced materials with confirmed ability to produce from suppliers, fall or other suitable season-season planting or seeding dates.
4. Maintenance details, which may include weeding, irrigation, or hand-watering schedule and equipment, and erosion control.
5. Monitoring and Reporting, specifying monitoring schedule and data collection methods throughout establishment of vegetation with key indicators of successful or unsuccessful progress, and quantitative criteria values to objectively determine success or failure at the conclusion of the monitoring period.
6. Adaptive management procedures such as reseeding, re-planting, drainage repairs, adjustments to irrigation schedule, and repair or remediation of sites to meet success criteria on schedule.

For species and vegetation communities with permit requirements including wetlands and riparian habitats, the goal of the HRP will be to restore plant species, habitat values, or vegetation communities. For restoration sites, the goals, objectives, and success criteria specified in the HRP will include native species cover and species richness compatible with the specific vegetation and habitat type.

If an unforeseen catastrophic event (e.g., flood, fire, or other event beyond SCE control) damages a restoration site within the monitoring period, SCE will assess adjacent areas to adjust maintenance activities and success standards in coordination with the agencies. In all areas, seed and/or potted nursery stock of locally native species will be used. The list of plants observed during botanical surveys of the Proposed Project area will be used as a guide to site-specific plant selection, additional appropriate species may be included.

Monitoring of the restoration sites will continue annually until HRP success criteria are achieved. SCE will be responsible for implementing adaptive management as needed.

For all restoration areas, SCE will provide annual reports to the CPUC and BLM to verify the total vegetation acreage subject to restoration, areas that have been completed, and areas still outstanding. The annual reports will also include a summary of the restoration and adaptive

management activities for the previous year, success criteria progress and completion, and any adjustments to planned activities, for the upcoming year.

- **APM BIO-RES-2: Develop Invasive Plant Management Plan.** SCE shall prepare and implement an Invasive Plant Management Plan (IPMP). This plan shall include measures designed to avoid the introduction and spread of new nonnative invasive plant species (invasive plants) and minimize the spread of existing invasive plants resulting from Proposed Project activities. The IPMP must meet the BLM's requirements for NEPA [National Environmental Policy Act] disclosure and analysis if herbicide use is proposed for the Proposed Project. The IPMP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction.

  For the purpose of the IPMP, invasive plants shall include plants that (1) are invasive and rated high or moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC, 2006), or (2) aid and promote the spread of wildfires (such as *Bromus tectorum* (cheatgrass), *Brassica tournefortii* (Sahara mustard), and *Bromus madritensis* spp. *rubens* (red brome)) or (3) are identified by the BLM as special concern. The IPMP will be implemented throughout Proposed Project pre-construction, construction, and restoration phases.

  Invasive Plant Management Plan. The IPMP will include the information defined in the following sections:

  Assessment. An assessment of the Proposed Project's potential to cause spread or the introduction of invasive plants into new areas, or to introduce new invasive plants into the ROW. This section will list known and potential invasive plants occurring on the ROW and in the Proposed Project region and identify threat rankings and potential for Proposed Project-related occurrence or spread for each species. This section will identify control goals (e.g., eradication, suppression, or containment) for invasive plants of concern with potential to occur on the ROW.

  Pre-construction invasive plant inventory. SCE shall inventory all invasive plants of concern in areas (both within and outside the ROW) subject to Proposed Project-related vegetation removal/disturbance, "drive and crush," and ground-disturbing activity. The invasive plants inventory area shall also include vehicle and equipment access routes within the ROW and all Proposed Project staging and storage yards. Invasive plants of concern shall be mapped by area of occurrence and percent cover. The map will be updated with new occurrences at least once a year.

  Pre-construction invasive plants treatment. Invasive plant infestations identified in the pre-construction invasive plants inventory shall be evaluated to identify potential for Proposed Project-related spread and potential benefits (if any) of pre-construction treatment. Pre-construction treatment will consider the specific invasive plants, potential seed banks, or other issues. The IPMP will identify any infestations to be controlled or eradicated prior to Proposed Project construction. Control and follow-up monitoring of pre-construction invasive plants treatment sites will follow methods identified in appropriate sections of the IPMP.

  Prevention. The IPMP will specify methods to minimize potential transport of new invasive plant seeds onto the ROW, or from one section of the ROW to another. The ROW may be divided into "weed zones," based on invasive plants of concern in the ROW. The IPMP will specify inspection procedures for construction equipment entering

the Proposed Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified sections of the ROW, and before leaving work sites where invasive plants of concern must be contained locally. Off road construction equipment shall be inspected to ensure it is free of any dirt or mud that could contain invasive plant seeds, roots, or rhizomes, and the tracks, outriggers, tires, and undercarriage will be carefully washed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that will be frequently entering and exiting the site will be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering Proposed Project work areas.

All vehicles will be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations (including air washing) will be set up at specified locations to clean equipment before it enters the work area. Wash stations will be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations will not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily log must be kept stating the location, date and time, types of equipment, methods used, and personnel present. The log shall contain the signature of the responsible crewmember. Written or electronic logs shall be available to the BLM and CPUC monitors on request.

Erosion control materials (e.g., straw bales) must be certified free of invasive plant seed ("weed-free") before they are brought onto the site. The IPMP must prohibit on-site storage or disposal of mulch or green waste that may contain invasive plant material. Mulch or green waste will be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility.

The IPMP will specify guidelines for any soil, gravel, mulch, or fill material to be imported into the Proposed Project area, transported from site to site within the Proposed Project area, or transported from the Proposed Project area to an off-site location, to prevent the introduction or spread of invasive plants to or from the Proposed Project area.

Monitoring. The IPMP shall specify methods to survey for invasive plants of concern during pre-construction, construction, and restoration phases; and shall specify qualifications of specialists responsible for invasive plant monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of new invasive plant infestations to prevent further spread. Surveying and monitoring for invasive plant infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season invasive plants. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control.

Control. The IPMP must specify manual and chemical invasive plant control methods to be employed. The IPMP shall include only invasive plant control measures with a demonstrated record of success for target invasive plants, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any Proposed Project-related invasive plant infestation is located (e.g., located on a Proposed Project disturbance site), to ensure effective and timely invasive plant control. Invasive plant infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, or when appropriate with the goal to prevent further spread. All proposed invasive plant control

methods must minimize disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage to any environmentally sensitive areas (ESAs) identified within or adjacent to the ROW. New infestations by invasive plants of concern will be treated at a minimum of once annually until eradication, suppression, or containment goals are met. Invasive plant occurrences can be considered eradicated when no new seedlings or resprouts are observed for three consecutive years, or a single season where new seedlings or resprouts are observed in reference populations but not at the control site. Invasive plant control efforts may cease when eradication is complete.

Manual control shall specify well-timed removal of invasive plants or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Kern County and San Bernardino County Agricultural Commissioners if such guidelines are available.

The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides will be used, and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants, consistent with BLM's Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007) and National Invasive Species Management Plan (NISC 2008). All herbicide applications will follow U.S. Environmental Protection Agency label instructions and will be in accordance with federal, state, and local laws and regulations. Only state and BLM-approved herbicides may be used. Herbicide treatment will be implemented by a Licensed Qualified Applicator. Herbicides shall be applied in accordance with product labels and applicator licenses. Herbicides shall not be applied during or within 24 hours of high confidence predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied in high wind conditions.

Reporting schedule and contents. The IPMP shall specify reporting schedule and contents of each report.

- **APM BIO-BOT-1: Special-status Herbaceous Plants.** SCE shall avoid, minimize or mitigate impacts to any state or federally listed or California Rare Plant Rank (CRPR) 1 or 2 herbaceous plants that may be located on the Proposed Project disturbance areas or surrounding buffer areas.

  Pre-construction Survey. Pre-construction clearance surveys in areas where special-status plant species potentially occur will be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, to avoid or minimize impacts on special-status plants. Disturbance free buffers for herbaceous species shall be 25-ft from the individual and/or occurrence boundary. These buffers shall be established from the previously conducted focused surveys and preconstruction survey results. If a smaller buffer is required, SCE shall develop and implement site-specific monitoring plan to minimize direct impacts to the species. The plan will be submitted to the CPUC for review and approval.

  In the event of a discovery of previously undescribed species, the boundary of the occurrence (defined by CNDDB as all individuals within a ¼ mile of each other) will be flagged, avoided, and monitored as discussed above and the CPUC, CDFW, and/or USFWS will be notified.

Focused Survey. For construction areas where special-status plant species potentially occur and focused surveys have not occurred, focused surveys will take place prior to construction. Focused surveys will be conducted consistent with methodology described in the Proposed Project Biological Technical Report.

Restoration and Mitigation. SCE will implement the following activities; other conflicting permit conditions will supersede the activities below:

1. Coordinate with Agencies. Agencies shall approve any impacts to special-status plants. Impacts in excess of 10% of any occurrence, or other percentage required by agency regulations on lands under their jurisdiction, shall be restored or mitigated.
2. Habitat Restoration and Revegetation. A Habitat Restoration Plan (HRP) shall address topsoil, plant or propagules salvage, and restoration. A Habitat Mitigation and Management Plan (HMMP) shall address mitigation. Approval of the HRP by appropriate agencies is required before impacts to special-status plant occurrences are allowed. A draft HMMP will be submitted to the appropriate agencies prior to impacts to special-status plants. For more information see APM BIO-RES-1.
3. Salvage. If required by agency regulations on lands under their jurisdiction, SCE shall consult with a qualified restoration ecologist or horticulturist regarding the feasibility and likely success of salvage efforts for each species. If salvage is feasible, based on prior success with similar species, SCE shall include salvage methods in the HRP. For special-status plants, the goal shall be to preserve existing populations or establish new populations. The HRP will include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether a species is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or propagules, to retain intact soil conditions and maximize success; (e) details regarding storage of plants or propagules for each species; (f) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (g) a description of the irrigation, and other maintenance activities, as applicable; (h) success criteria, including specific timeframe for survivorship of each species; and (i) a detailed monitoring program, commensurate with the HRP goals. Invasive plant control for special-status plants will be addressed in the Invasive Plant Management Plant (IPMP, APM BIO-RES-2).
4. Off-site compensation. Where restoration is not feasible, SCE shall provide compensation lands consisting of habitat occupied by the impacted CRPR 1 or 2 ranked plant occurrences at a 1:1 ratio of acreage for any occupied habitat affected by the Proposed Project. Occupied habitat will be calculated on the Proposed Project site and on the compensation lands as including each special-status plant occurrence. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be “nested” or “layered” with compensation for habitat loss.

Agency Coordination. Annual construction monitoring reports shall be submitted to the CPUC and BLM. Reports shall include, but not be limited to, number of plants impacted, details of plants or propagules salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. After construction, salvage status will be described in the HRP annual report.

In the event of an unexpected discovery of a new species or previously undocumented occurrence, the same steps will be used as discussed above. In addition, when there is an unexpected discovery of a new species, the CPUC and CDFW and/or BLM will be notified.

- **APM BIO-BOT-2: Special-status Perennial Plants and Other Species.** SCE shall avoid, minimize or mitigate impacts to western Joshua tree (*Yucca brevifolia* var. *brevifolia*).

  Pre-construction Survey. Pre-construction surveys will be conducted by a qualified specialist to identify any western Joshua trees in the Proposed Project area. Where western Joshua trees are known to occur, all work shall occur outside an appropriate buffer to avoid individual western Joshua trees, seeds, and seedbank as agreed to by CDFW. If impacts that would result in take cannot be avoided, SCE will obtain a Section 2081(b) ITP from CDFW if the species is CESA listed or a candidate for listing, and will implement additional measures pursuant to the ITP. Buffer reductions may occur with the implementation of appropriate ITP measures. A qualified botanist/arborist monitor, with the authority to halt work, shall be present whenever work occurs within reduced buffers for Joshua tree as required by CDFW.

  Compensatory Restoration. If an ITP for western Joshua tree is obtained, then compensation for impacts to western Joshua tree will be addressed through the permit conditions.

- **APM WET-1: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.** The Proposed Project shall avoid and/or minimize impacts to all state jurisdictional waters, wetlands, and riparian habitat that occur within the Proposed Project area where feasible. All grading, fill, staging of equipment, infrastructure construction or removal, and all other construction activities shall be designed, sited, and conducted outside of state and federally jurisdictional waters, wetlands, and riparian habitat.

  The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling within 100 feet of jurisdictional waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands, and riparian areas are avoided or minimized. BMPs are also necessary to reduce the risk of an unintended release of sediment or other material into jurisdictional waters. New and upgraded roadways shall use at-grade type stream crossings unless installation or repair of culverts is required. Stockpiled and bermed sediment will be redistributed or removed from the site so as not to alter flows. New poles shall be sited outside stream channels.

  If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource Agencies (i.e., U.S. Army Corps of Engineers, the State Water Resources Control Board/Regional Water Quality Control Boards, and California Department of Fish and Wildlife). Temporary impacts to jurisdictional waters shall be returned to pre-existing contours upon completion of the work.

3.4.4.2 Best Management Practices

SCE has also proposed the implementation of BMPs that are based on the California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook*. None of the California Stormwater Quality Association's BMPs are directly applicable to biological resources.

3.4.5 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in 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 CDFW or USFWS;

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 CDFW or USFWS;

c) Have a substantial adverse effect on state or federally protected wetlands (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; and

f) Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

The CPUC has identified additional CEQA impact criteria that are specific to the types of projects evaluated by the CPUC to be considered in addition to the criteria identified in Appendix G of the CEQA Guidelines (CPUC 2019). With regard to biological resources, the Project would also result in significant biological resources effects on the environment if it would:

g) Create a substantial collision or electrocution risk for birds or bats.

3.4.6 Direct and Indirect Effects

3.4.6.1 Approach to the Analysis

Potential impacts on biological resources are discussed based on the CEQA significance thresholds included in Appendix G of the CEQA Guidelines as well as the CPUC additional CEQA impact criterion, as listed above. The impact analysis is based on the resources and references listed at the beginning of this section. The analysis considers the potential for direct or indirect impacts to result from construction or operation of the Project, defined as follows:

- **Direct impacts**. Direct impacts are those that would be caused by the Project, occurring at the same time and place (CEQA Guidelines Section 15358). Examples of these types of impacts on biological resources include incidental take during construction and habitat removal.
- **Indirect impacts**. Indirect impacts are those that would be caused by the Project, occurring later in time or farther removed in distance, but still reasonably foreseeable (CEQA Guidelines Section 15358). Examples of these types of impacts on biological resources include the discharge of sediment or chemicals that adversely affect water quality downstream of a Project site, and an increase in human activity during Project operation.

The Project would have the potential for direct and indirect impacts on biological resources. These potential impacts include disturbance of special-status plant and wildlife species and their natural habitats during construction and operation. The impact analysis assumes that protective measures identified by the Applicant would be implemented to avoid or minimize environmental impacts. Where needed, additional mitigation measures are proposed to reduce potential impacts to a less-than-significant level.

3.4.6.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would 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 CDFW or USFWS.

Impact 3.4-1: Project construction would have an adverse effect on special-status plant species. (***Less than Significant with Mitigation***)

Five special-status plant species were found in the study area during focused surveys. Locations of all observed special-status plant species are included in Figures 3.4-2a through 3.4-2f, *Special-Status Plant Species Observations*.

These species include pink funnel lily, Barstow woolly sunflower, Mojave spineflower, desert cymopterus, and western Joshua tree. Two observations of pink funnel lily were recorded, one along the eastern portion of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment and one along the existing Kramer-Holgate 115 kV Subtransmission Line alignment. Five observations of Barstow woolly sunflower were mapped along the eastern portion of the proposed Kramer–Cal City alignment. Multiple observations of Mojave spineflower were recorded along the southern portions of both the proposed Kramer–Cal City alignment and the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment.

Western Joshua tree specimens were mapped along both the proposed Kramer–Cal City alignment and the proposed Cal City–Edwards-Holgate alignment, with most of these observations concentrated along the southern segment of the proposed Cal City–Edwards-Holgate alignment near the existing Holgate Switchyard. SCE reported in the PEA that four Joshua tree specimens could be directly affected in areas subject to temporary construction activities. However, based on review of the mapped areas of Joshua tree woodland and other individual specimens along substantial section of the Cal City–Edwards-Holgate alignment, and in a few other locations, the Project could potentially affect more than four individual specimens indirectly and possibly directly. The 2024 Western Joshua Tree Census Results report (Artemis Environmental Services 2024c) notes four specimens in good health and two more in fair health located within the Project footprint and at least six in good health and one in fair health located within 100 feet of the Project (five of these are within 100 feet of the Holgate Switchyard).

Desert cymopterus was observed along the existing Kramer–Holgate 115 kV Subtransmission Line, south of SR 58. Desert cymopterus was not observed along either of the Project alignments; however, high-quality habitat for this species exists along both the proposed Kramer–Cal City

alignment and the proposed Cal City–Edwards-Holgate alignment of the Project, and it is possible that this species could be present and potentially affected by the Project activities.

Construction activities including grading, vegetation clearing and grubbing, earthmoving, and vehicle and equipment use may result in direct impacts on special-status plants including crushing or burial of individuals. In addition, construction could result in indirect impacts resulting from alteration and/or degradation of existing suitable habitat for these species. In addition, indirect impacts could result from construction-related traffic and earthmoving activities, which may generate dust that could inhibit photosynthesis; and from grading activities that could disturb soils that could contain seeds, bulbs, nutrients, and mycorrhizae that special-status plants require for survival. Furthermore, incidental introduction of non-native weed species during construction could result in indirect impacts such as loss or degradation of suitable habitat for special-status species.

To avoid or minimize impacts, SCE proposes to implement several APMs. With implementation of APM BIO-GEN-1, *Pre-construction Biological Clearance Surveys and Monitoring*, preconstruction surveys would be performed by a qualified biologist and flagging would be used to avoid any sensitive species in the area during construction. Plants that could not be avoided would be moved outside of the impact area. APM ENV-GEN-1 WEAP, *Worker's Environmental Awareness Training Program*, requires all construction personnel to attend training regarding resource protection and avoidance measures and procedures to follow upon the discovery of environmental resources. In addition, to compensate for unavoidable impacts during construction activities, SCE would implement APM BIO-RES-1, *Develop and Implement Habitat Restoration Plan (HRP)*, which would plan for and restore any habitats, special-status plant species populations, and vegetation communities temporarily affected by the Project; and APM BIO-RES-2, *Develop Invasive Plant Management Plan*, which would require SCE to prepare and implement an invasive plant management plan (IPMP) to avoid the introduction and spread of new non-native invasive plant species and to minimize the spread of invasive plant species from Project activities.

Where special-status herbaceous plants or western Joshua trees occur, disturbance-free buffers of a minimum of 25 feet would be established under APM BIO-BOT-1, *Special-Status Herbaceous Plants*. If direct and/or indirect impacts on special-status herbaceous plants or western Joshua tree would not be avoided, restoration would be implemented as required by APM BIO-BOT-1. SCE would obtain a Section 2081(b) ITP from CDFW for take of western Joshua tree as required by APM BIO-BOT-2, *Special-Status Perennial Plants and Other Species*. Note that APM BIO-BOT-1 only requires restoration for or mitigation of impacts on rare plants if more than 10 percent of the population is affected, or if resource agencies require otherwise. The potential loss of up to 10 percent of a rare-plant population would be a significant impact that requires mitigation.

These APMs would reduce impacts on special-status plant species; however, the impacts would remain significant. Specifically, implementation of APM BIO-BOT-1 would avoid and minimize impacts on special-status plants and would provide restoration, presumably in the same location, at a minimum 1:1 ratio. However, the APM acknowledges that restoration may not always be feasible and prescribes a provision that would require the Applicant to "provide compensation lands" that support the same plant species (ranked CRPR 1 or 2) at a 1:1 ratio. These actions would result in a net loss of special-status plants; thus, the impact would still be significant

because conservation would only add a layer of protection over existing population(s) but would not replace affected numbers of specimens. Therefore, to reduce significant impacts to less-than-significant levels, mitigation has been identified that includes more specific requirements for weed management and compensatory obligations for impacts on rare plant species.

Implementation of Mitigation Measures 3.4-1a and 3.4-1b, presented below, is recommended to supplement the requirements of the APMs. Mitigation Measure 3.4-1c, also below, would be implemented to supplement APM BIO-BOT-2 and reduce impacts on western Joshua tree. Implementation of these mitigation measures would reduce construction-related impacts on special-status plant species to **less than significant**.

Mitigation Measure 3.4-1a: Invasive Plant Management Plan.

In addition to the requirements of APM BIO-RES-2, the Invasive Plant Management Plan's chemical control section must indicate where herbicides will be used and which herbicides will be used. The section also must specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants, consistent with BLM's *Vegetation Treatments Using Aminopyralid, Fluoroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States* (BLM 2016b), BLM's *Approval of Seven Herbicide Active Ingredients for Use on Public Lands to Treat Invasive Plants* (BLM 2024), and the National Invasive Species Council's *Management Plan 2016–2018* (NISC 2016), or most recent guidance from BLM and/or the National Invasive Species Council regarding herbicide use.

Mitigation Measure 3.4-1b: Special-Status Herbaceous Plants Compensatory Mitigation and Restoration.

The types of compensation specified in APM BIO-BOT-1—purchase of credit in an established mitigation bank, acquisition of conservation easements, or direct purchase and preservation of compensation lands—may be used to mitigate impacts on special-status plants. However, if on-site restoration is infeasible or unsuccessful, compensation will be required to offset impacts on special-status plants (ranked CRPR 1 or 2). Such compensation will include purchasing credits or acquiring, preserving, and protecting existing populations at a minimum 3:1 ratio, or as otherwise specified by resource agencies, to reduce the potential significant impact on habitat to a less-than-significant level. SCE must coordinate with CDFW (or BLM, depending upon land ownership) and request that the agency review and accept the proposed compensatory mitigation involving off-site conservation.

Requirement for Mitigation. Unless otherwise specified by BLM, CDFW, or other applicable resource agencies, rare-plant restoration or compensatory mitigation shall be provided for any impact on special-status plants under the agencies' jurisdiction, not just impacts in excess of 10 percent of an occurrence or population.

Performance Criteria. The following quantitative restoration success criteria apply to special-status plant restoration areas and temporarily affected sensitive vegetation areas that are restored under the habitat restoration plan described in APM BIO-RES-1.

1. Vegetation Establishment:
    - At least 70 percent of the total vegetative cover shall consist of native species appropriate to the habitat type, or similar to baseline conditions.

- Invasive species shall not exceed 5 percent cover in any monitoring year.
- Supplemental water shall be provided as necessary, depending upon target species' needs.
- Minimum 80 percent survival of planted container stock shall be required after the first year, with replanting/reseeding as needed to maintain at least 70 percent survival after 5 years.

2. Monitoring and Adaptive Management:
    - Minimum of 5 years of post-restoration monitoring shall occur, to ensure that performance standards are tracked and met for a minimum 3-year period, or until pre-Project conditions are restored to equivalent or better condition.
    - Adaptive management: Implement corrective actions if success criteria are not met within the expected time frame.
3. Compliance and Reporting:
    - Annual reporting: Submit annual monitoring reports to CPUC and CDFW for review.
    - A final report shall be prepared, reviewed, and approved by CPUC and/or CDFW that demonstrates all success criteria have been met.

Mitigation Measure 3.4-1c: Western Joshua Tree.

The Western Johsua Tree Conservation Act authorizes CDFW to issue permits for the incidental take of one or more western Joshua trees. If all Joshua trees within and outside of the Project site can be avoided with a minimum 50-foot (15-meter) buffer, then no further action is required. If actions are proposed within this buffer, SCE shall confer with and submit a western Joshua tree CDFW-protocol census survey report to CDFW in accordance with the requirements of the Western Joshua Tree Conservation Act (CDFW 2025b). Although a western Joshua tree census survey (Artemis Environmental Services 2024c) was conducted in 2024, CDFW may require that the census survey be repeated and/or that the census study and report be supplemented to include all the requisite information described below.

The census shall include every western Joshua tree on the Project site and within a 50-foot buffer. The following information shall be provided in the census report:

- Project name and permittee name.
- Project address/assessor's parcel number or location description.
- Datum of the coordinates.
- Project site boundary corners (latitude and longitude).
- Name, business, title, and contact information for the person(s) preparing the census.
- Date(s) on which the census was performed.
- Any other site condition notes.

The following information shall be provided for each tree in the census report:

- Unique identifier corresponding to the census map.

- Global Positioning System (GPS) location for each tree (latitude and longitude).
- Size class for each western Joshua tree, categorized as follows: *Class A*, less than 1 meter in height; *Class B*, 1 meter or greater but less than 5 meters in height; and *Class C*, 5 meters or greater in height.
- Actual height of each tree to the nearest one-tenth of a meter (optional).
- Indication of whether each tree is live or dead.
- Indication of whether each tree is mature (a branched tree is considered mature).
- Indication of whether each tree is currently producing flowers, fruits, or none.
- Indication of how each tree would be affected by the Project (i.e., removal, trim, relocation, other, or none).
- Indication of whether Project activities would take place within 15 meters of the base of the tree.
- Proposed relocation site for each tree (if applicable).

Before any work within 50 feet (15 meters) of a Joshua tree, SCE shall coordinate with CDFW to determine whether a Section 2081(b) incidental take permit is required for direct or indirect impacts on individual trees. SCE shall comply with the mitigation requirements specified by the ITP, including payment of standard mitigation fees and/or other mitigation actions (e.g., relocation of western Joshua trees).

Significance after Mitigation: Less than Significant.

Impact 3.4-2: Project construction would have a substantial adverse effect on special-status wildlife species. (***Less than Significant with Mitigation***)

As described in Section 3.4.2.2, *Special-Status Species*, eight special-status wildlife species have been observed and are present within the study area: desert tortoise, Cooper's hawk, burrowing owl, California horned lark, prairie falcon, loggerhead shrike, LeConte's thrasher, and desert kit fox. Locations of special-status wildlife observations are included in Figures 3.4-3a through 3.4-3f, *Special-Status Wildlife Species Observations (2021–2022)*, and Figures 3.4-4a through 3.4-4f, *Special-Status Wildlife Species Observations (2024)*. In addition, five special-status wildlife species are deemed likely to occur within the study area based on habitat suitability: Crotch's bumble bee, Swainson's hawk, golden eagle (foraging only), American badger, and Mohave ground squirrel. Swainson's hawks are known to occur and nest occasionally in some parts of the western Mojave Desert. However, there are no reports of Swainson's hawks nesting within 20 miles of the Project's study area. No impacts were identified for this species, which could incidentally occur in the Project area in a foraging or migrating capacity.

Invertebrates

One special-status invertebrate, Crotch's bumble bee, has a high potential to occur in the study area. Suitable habitats for this species include desert margin areas such as those supporting Joshua tree and creosote scrub, and semi-urban settings. The Project's construction activities could result in direct injury or mortality of individual bumble bees through vehicle or equipment strikes, or through the destruction of active nests. Construction could also lead to temporary or

permanent degradation of suitable habitat due to ground disturbance and the introduction of non-native invasive plant species.

SCE has proposed to implement APM BIO-GEN-1, which requires general preconstruction biological surveys and monitoring. In addition, with implementation of APM ENV-GEN-1 WEAP, all workers on the Project sites would be required to attend WEAP training that would inform construction personnel of the resource protection and avoidance measures. In accordance with APM BIO-RES-2, SCE would prepare and implement an IPMP to avoid the Project-related introduction and spread of new non-native invasive plant species and minimize the spread of existing invasive species that could lead to conversion of natural habitat suitable for Crotch's bumble bee. After construction, temporarily affected habitats for regulated plant species and vegetation communities would be restored as required by APM BIO-RES-1.

Although implementing the APMs would reduce impacts on special-status invertebrates, such impacts would remain significant without mitigation in the form of additional clarification of requirements for Crotch's bumble bee. Crotch's bumble bee has been designated by CDFW as a candidate for listing under FESA, and any impact on this species requires take authorization from CDFW. Therefore, impacts on this species would be significant. The CPUC would require SCE to implement Mitigation Measure 3.4-2a, *Crotch's Bumble Bee* (set forth below), which requires that a habitat assessment be conducted, that protocol surveys be conducted to determine the presence or absence of Crotch's bumble bee, that minimization and avoidance be implemented, and that consultation with CDFW occur, if this species is present and may be adversely affected by the Project.

With implementation of these mitigation measures, construction-related impacts on special-status invertebrates would be reduced to a **less-than-significant** level.

Reptiles

One special-status reptile species, desert tortoise, is present within the study area. Several desert tortoise live specimens as well as burrows, carcasses, pallets, and scat were observed during the 2021–2022 and 2024 surveys, as indicated in Figures 3.4-3a through 3.4-3f, *Special-Status Wildlife Observations (2021–2022)*, and Figures 3.4-4a through 3.4-4f, *Special-Status Wildlife Observations (2024)*. During the 2021–2022 survey efforts, live specimens were observed in several locations: one along the northwestern portion of the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment; two along the northeastern portion of the proposed Kramer–Cal City alignment; three along the southern portion of the proposed Cal City–Edwards-Holgate alignment; and others along the existing Kramer–Holgate 115 kV Subtransmission Line alignment, south of SR 58.

During the 2024 survey efforts, five live specimens were observed along the proposed Kramer–Cal City 115 kV Subtransmission Line alignment and six were observed along the southern portion of the proposed Cal City–Edwards-Holgate alignment. Suitable low-, medium-, and high-quality habitat for desert tortoise is present on approximately 4,641 acres of the total 4,789 acres located within the proposed Project footprint and a 200-foot buffer (SCE 2024a). Construction activities have the potential to cause direct injury to or mortality of this species and could disturb

or destroy existing tortoise burrows. In addition, increased noise, artificial light, increased human presence, and/or introduction of non-native weed species during construction activities could temporarily or permanently degrade and result in a loss of suitable habitat as invasive vegetation invades disturbed areas.

Indirect impacts on desert tortoise may result from increased human presence in the area during construction. In particular, construction activities on the rural desert lands may increase avian predation pressure on wildlife. The improper handling and disposal of trash and organic waste would encourage predators such as common raven, thereby increasing depredation on juvenile desert tortoises and other wildlife. Micro-litter that may attract ravens includes items such as screws, nuts, bits of plastic or wire, and any trash that stands out because it is colorful or shiny. Increased predation could significantly affect tortoise population levels.

As discussed in Section 3.4.2, above, the USFWS-designated Fremont-Kramer Critical Habitat Recovery Unit for desert tortoise is east of and bounded by U.S. 395. This unit also overlaps limited sections of the alignment of the proposed Kramer–Cal City 115 kV Subtransmission Line in the extreme northeast and southeast corners and western portion of the Project area. Where designated critical habitat intersects the Project alignment and overlaps the Kramer Substation at Kramer Junction, areas developed with industrial uses, parking, and staging areas lack the primary constituent elements necessary to support desert tortoise. However, where critical habitat overlaps the northeast corner of the study area, at Twenty Mule Team Parkway, habitat is moderately suitable and live tortoises were found during surveys in 2022 and 2024. Overall, it is anticipated that the Project would result in 32.66 acres of temporary impacts and 13.64 acres of permanent impacts on critical habitat for desert tortoise. Impacts on desert tortoise critical habitat would be minimal relative to the overall acreage of the Fremont-Kramer Critical Habitat Unit (518,000 acres total); work in these areas would not cause the local population of desert tortoise to become unviable, nor would it preclude movement of the species or substantially reduce available habitat for this species.

SCE has proposed to implement APM BIO-GEN-1, which requires general preconstruction biological surveys and monitoring, as well as APM BIO-HERP-1, *Desert Tortoise*, which requires preconstruction surveys and construction monitoring specific to desert tortoise to avoid and minimize potential impacts on the species. This APM specifically requires SCE to obtain incidental take authorization from the wildlife agencies. Under APM BIO-HERP-1, SCE would implement a raven management plan (RMP) to minimize the effects of raven predation during operation and maintenance.

Furthermore, with implementation of APM ENV-GEN-1 WEAP, all workers on the Project sites would be required to attend WEAP training that would inform construction personnel of the resource protection and avoidance measures. In accordance with APM BIO-RES-2, SCE would prepare and implement an IPMP to avoid the Project-related introduction and spread of new non-native invasive plant species and minimize the spread of existing invasive species that could lead to degradation or displacement of natural habitat suitable for desert tortoise. After construction, temporarily affected habitats for regulated plant species and vegetation communities would be restored as required by APM BIO-RES-1. Indirect impacts on desert tortoise may also remain

significant. Therefore, to supplement the requirements of the APMs, CPUC would require SCE to implement Mitigation Measure 3.4-1a, *Invasive Plant Management Plan*. In addition, Mitigation Measure 3.4-2b, *Raven Management to Protect Desert Tortoise*, clarifies requirements for the RMP proposed in APM BIO-HERP-1 to aid in the protection of desert tortoise. These measures provide specific, implementable requirements for invasive plant and raven management that are absent or unclear in the APMs, such as implementation methods, a schedule for managing noxious plants and ravens, success criteria, and contingency planning if success criteria are not met. With implementation of these mitigation measures, including obtaining take authorization subject to USFWS and CDFW conditions, construction-related impacts on desert tortoise and designated critical habitat would be **less than significant**.

Birds

Six special-status bird species were observed within the study area: Cooper's hawk, burrowing owl, California horned lark, prairie falcon, loggerhead shrike, and LeConte's thrasher. Two other special-status birds, golden eagle and Swainson's hawk, were determined to be likely to incidentally occur—but not to nest—due to the presence of suitable foraging habitat within the study area.

Three live burrowing owl specimens were observed during the 2021–2022 survey efforts: one in the northwestern portion of the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment, one along the eastern portion of the proposed Kramer–Cal City alignment, and one along the existing Kramer–Holgate 115 kV Subtransmission Line alignment, south of SR 58. Two active burrowing owl burrows were observed during the 2021–2022 survey efforts, both along the western portion of the proposed Cal City–Edwards-Holgate alignment. During the 2024 survey effort, five live burrowing owl specimens (including one pair) and 10 active burrows were observed. Live burrowing owl specimens and active burrows were concentrated along the western portion of the proposed Cal City–Edwards-Holgate alignment, with only one live specimen and no active burrows observed along the proposed Kramer–Cal City alignment, as indicated in Figures 3.4-3a through 3.4-3f, *Special-Status Wildlife Observations (2021–2022)*, and Figures 3.4-4a through 3.4-4f, *Special-Status Wildlife Observations (2024) Survey Data*.

California horned lark, prairie falcon, and LeConte's thrasher were mapped in multiple locations along the proposed Cal City–Edwards-Holgate alignment and proposed Kramer–Cal City 115 kV Subtransmission Line alignment during both the 2021–2022 and 2024 survey efforts. Loggerhead shrike was mapped in multiple locations along the proposed Cal City–Edwards-Holgate alignment and the proposed Kramer–Cal City alignment during the 2021–2022 survey efforts; however, during the 2024 survey efforts, only one observation was recorded along the proposed Kramer–Cal City alignment and the remaining 10 observations of this species were located along the proposed Cal City–Edwards-Holgate alignment.

The Project's construction activities could result in direct mortality of special-status birds, disturbance of nesting birds and subsequent nest site abandonment, and/or reproductive failure from increased noise, artificial light, and human presence. Furthermore, construction activities could result in temporary or permanent degradation and loss of suitable habitat through disturbance and/or introduction of non-native weed species.

SCE has proposed to implement APM BIO-GEN-1, which requires general preconstruction biological surveys and monitoring, as well as APM BIO-AVI-2, *Nesting Bird Management Plan*, which requires the preparation and implementation of a nesting bird management plan. Furthermore, with implementation of APM ENV-GEN-1 WEAP, all workers on the Project site would be required to attend WEAP training that would inform construction personnel of all resource protection and avoidance measures. APM BIO-RES-2 requires the implementation of an IPMP to avoid the Project-related introduction and spread of new non-native invasive plant species and minimize the spread of existing invasive plants that could lead to degradation or displacement of natural habitat suitable for special-status bird species. After construction, temporarily affected habitats for regulated plant species and vegetation communities would be restored as required by APM BIO-RES-1. In addition, SCE is required to comply with the Migratory Bird Treaty Act and California Fish and Game Code Section 3503.5, which would further reduce potential impacts on special-status birds.

Although the APMs would reduce impacts on special-status birds, such impacts would remain significant. Mitigation Measure 3.4-2c, *Nesting Bird Management Plan*, supplements the avian survey requirements for nesting birds identified in APM BIO-AVI-2.

For burrowing owl, SCE has proposed to implement APM BIO-AVI-3, *Burrowing Owl*, which requires preconstruction surveys, preparation of a burrowing owl management plan, and implementation of avoidance measures. However, in October 2024, the California Fish and Game Commission published its determination that a petition to list western burrowing owl was warranted under CESA. The same take prohibitions that apply to listed species also protect western burrowing owl as a candidate species for CESA listing (CDFW 2024b). Therefore, an ITP authorization would need to be obtained from CDFW in accordance with Section 2081 of the Fish and Game Code before implementation of any action that could result in species take, including passive relocation. APM BIO-AVI-3 does not address the need for SCE to obtain appropriate take authorization from CDFW. Early consultation with CDFW is recommended to determine whether more stringent protections may be required. Therefore, the Project would have a significant impact on burrowing owl. Implementation of Mitigation Measure 3.4-2d, *Burrowing Owl*, set forth below, would supplement APM BIO-AVI-3. By adding requirements for: 1) CDFW authorization prior to passive owl relocation, 2) larger default burrowing owl buffer distances that are consistent with the CDFW guidance, and 3) compensatory mitigation consistent with CDFW requirements, Mitigation Measure 3.4-2d would reduce the impact to burrowing owl to less than significant.

With implementation of these mitigation measures, construction-related impacts on special-status birds would be reduced to **less than significant**.

Mammals

One protected mammal species and two special-status mammal species occur or are likely to occur within the study area: desert kit fox, American badger, and Mohave ground squirrel. Several active desert kit fox dens were observed during the 2021 and 2022 surveys, as indicated in Figures 3.4-3a through 3.4-3f, *Special-Status Wildlife Observations (2021–2022)*. Active desert kit fox dens were observed in several locations in the Project area: one along the western portion

of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment; two along the northeastern portion of the proposed Cal City–Edwards-Holgate alignment; one near the existing Holgate Switchyard; and one along the existing Kramer–Holgate 115 kV Subtransmission Line alignment, south of SR 58. Construction activities have the potential to cause direct injury to or mortality of this species through vehicle or equipment strikes, construction on or burying of active burrows, or individuals falling into excavation areas. Furthermore, construction activities could result in degradation and/or loss of suitable habitat from increased noise, artificial lighting, human presence, disturbance, and/or introduction of non-native weed species.

SCE proposes to implement APM BIO-GEN-1, which requires general preconstruction surveys and monitoring during construction activities; APM BIO-RES-1, which requires that temporarily affected habitats for regulated plant species and vegetation communities be restored, thereby restoring habitat for rare mammals; and APM BIO-RES-2, which requires the preparation and implementation of an IPMP to avoid the Project-related introduction and spread of new non-native invasive plant species and minimize the spread of existing invasive plants that could lead to degradation or conversion of natural habitats that are suitable for special-status mammal species.

To minimize potential direct impacts on special-status mammals, SCE proposes to implement APM BIO-MAM-1, *Mohave Ground Squirrel*, which would require that SCE develop construction minimization measures and habitat conservation measures during consultation with CDFW during the ITP application process; and APM BIO-MAM-2, *Desert Kit Fox Preconstruction Surveys*, which requires surveys for desert kit fox and avoidance of other special-status mammal species burrows, where feasible, or relocation of individuals. Implementation of APM BIO-MAM-2 would also protect American badger through the avoidance of any badger burrows that may be found. Furthermore, with implementation of APM ENV-GEN-1 WEAP, all workers on the Project site would be required to attend WEAP training that would inform all construction personnel of the resource protection and avoidance measures.

Along with these measures, Mitigation Measure 3.4-2e, *Mohave Ground Squirrel Protection*, has been added to clarify requirements for coordination with CDFW and BLM regarding Mohave ground squirrel. Mitigation Measure 3.4-2f, *American Badger Protection*, has been added to clarify that the desert kit fox protection measures in APM BIO-MAM-2 would also be applied to protect American badger.

With implementation of these mitigation measures, construction-related impacts on special-status wildlife would be reduced to a **less-than-significant** level.

> **Mitigation:** Implement Mitigation Measure 3.4-1a, *Invasive Plant Management Plan* (see Impact 3.4-1), as well as the mitigation measures listed below.
>
> **Mitigation Measure 3.4-2a: Crotch's Bumble Bee.**
>
> A habitat assessment shall be completed by a qualified biologist with demonstrated knowledge of the requirements of Crotch's bumble bee. If no suitable habitat for this species is identified within 300 feet of proposed construction activity areas, no further measures are required. If a qualified biologist has evaluated the property and found suitable foraging or nesting habitat for Crotch's bumble bee within 300 feet of proposed

construction activity areas, SCE shall retain a qualified entomologist to conduct surveys to determine presence or absence in accordance with the most current protocols established by CDFW (currently, the *Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species*).

If Crotch's bumble bee or nests are detected, SCE shall consult with CDFW to develop adequate take avoidance measures, which may include protections for underground overwintering queens. If impacts on this species cannot be avoided, SCE shall obtain the appropriate take authorization from CDFW (pursuant to Fish and Game Code Section 2080 et seq.). Early consultation is required, as modification to the Project and mitigation measures may be required to obtain an incidental take permit.

Mitigation Measure 3.4-2b: Raven Management to Protect Desert Tortoise.

SCE shall develop and implement a raven management plan (RMP) for the Project, subject to review and approval by the CPUC and relevant wildlife agencies, to be deployed during the Project's construction and operation and maintenance phases. The purpose of the RMP is to reduce avian predation on juvenile desert tortoises by employing deterrent strategies that specifically target ravens known to prey on tortoises. The plan will not be designed to broadly eliminate or control raven populations.

The RMP shall follow an adaptive management approach to reduce trash, debris, micro-trash, and organic waste that may attract ravens during construction; and shall remain in place after Project completion. The RMP will be evaluated after 3 years of implementation, or sooner if evidence of avian predation emerges. Key components of the RMP may include (1) monitoring power lines to discourage raven nesting; (2) funding targeted raven control efforts in cooperation with the U.S. Department of Agriculture; and (3) if an issue is identified, using alternative raven control strategies developed in coordination with USFWS and/or CDFW (e.g., egg-addling, nesting habitat removal). The RMP shall include specific measures to limit raven subsidies during Project construction and during post-construction operation. Such measures will include a trash collection and management system that ensures the proper disposal of food and other trash in self-closing, sealable trash containers, and the regular inspection and removal of trash receptacles to avoid attracting tortoise predators; removal of road-killed animals or other carcasses within the Project area during construction activities; raven nest management, removal, and the use of nesting deterrents during and after construction; and post-construction raven nest surveys on SCE facilities, nest monitoring, and removal for a period of 3 years after Project completion.

Mitigation Measure 3.4-2c: Nesting Bird Management Plan.

In addition to the requirements of APM BIO-AVI-2, the nesting bird management plan shall be prepared by a qualified biologist and submitted for CPUC review at least 30 days before the start of construction activities. In addition to the commitments described in APM BIO-AVI-2, the plan shall include the following provisions:

- If a nest is suspected but not confirmed, the qualified biologist shall establish a no-disturbance buffer until additional surveys can be completed or until the location can be inferred based on observations. If a nest is observed but thought to be inactive, the qualified biologist shall monitor the nest for 1 hour (4 hours for raptors during the non-breeding season) before approaching the nest to determine status. The qualified biologist shall use their best professional judgment regarding the monitoring period and whether approaching the nest is appropriate.

- Appropriate buffer distances, as stipulated in the nesting bird management plan, are generally 300 feet for passerine species and 500 feet for listed special-status birds and raptors; however, these recommended buffer distances may be increased or reduced at the discretion of the qualified biologist depending on site-specific factors such as the location of the nest and the species' tolerance to human presence.
- If construction temporarily ceases for a period greater than 7 days and activities resume during the avian nesting season, the Project site and buffer areas shall be resurveyed.

Mitigation Measure 3.4-2d: Burrowing Owl.

SCE shall consult with CDFW to obtain the appropriate take authorization pursuant to Fish and Game Code Section 2081 et seq. before the start of construction activities. Avoidance and minimization measures established under an incidental take permit issued by CDFW may include the following:

- Avoiding construction within buffer areas around active nest sites during the nesting period (February 1–August 31).
- Establishing buffers around nesting sites in accordance with the recommended buffer distances included in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), as shown below:

BURROWING OWL NESTING SITES RECOMMENDED BUFFERS

Time of Year	Level of Disturbance		
	Low	Medium	High
April 1–August 15	200 meters	500 meters	500 meters
August 16–October 15	200 meters	200 meters	500 meters
October 16–March 31	50 meters	100 meters	500 meters

- Periodic monitoring to determine whether burrowing owls have colonized or recolonized the site during construction.
- If allowed by CDFW, to avoid impacts where burrowing owls are detected in or immediately adjacent to construction areas, a burrow exclusion plan may be prepared and implemented by qualified biologists. The burrow exclusion plan shall meet the requirements specified in Appendix E of the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) and shall be approved by CDFW before implementation.
- Conservation of mitigation lands shall offset impacts on burrowing owl, including permanent loss or displacement of habitat and temporary impacts during construction. The conservation of mitigation lands shall be determined through consultation with and approval by CDFW depending on the ownership of the occupied land, which shall be established before the start of construction activities. At minimum, temporary impacts shall be offset at a 1:1 ratio by restoring affected habitat and/or placing equivalent habitat in permanent conservation. Permanent habitat impacts shall be compensated at a minimum 2:1 ratio, or as otherwise required by CDFW. With CDFW concurrence, compensatory mitigation provided for desert tortoise that involves habitat conservation, including restoration or

enhancement of degraded land placed under conservation, may concurrently be used as mitigation for impacts on burrowing owl because both species may benefit.

Mitigation Measure 3.4-2e: Mohave Ground Squirrel Protection.

Within all areas identified as potential Mohave ground squirrel (MGS) habitat (see the *Cal City Substation 115 kV Upgrade Project Biological Resources Technical Report*, Appendix G), SCE shall presume the presence of MGS and implement the protection measures outlined in APM BIO-MAM-1, *Mohave Ground Squirrel*. SCE shall obtain MGS take authorization through a CDFW incidental take permit, which will encompass these and additional mitigation requirements. In accordance with the permit, the following avoidance and minimization measures shall also be implemented:

- *Avoidance of High-Quality Habitat:* High-quality MGS habitat and areas with known species presence shall be avoided and direct impacts minimized to the greatest extent feasible. These areas shall be clearly marked for avoidance using high-visibility flagging, construction fencing, or similar methods, and maintained throughout the duration of nearby construction activities.
- *Revegetation of Temporarily Disturbed Habitat:* To mitigate temporary impacts on MGS habitat, SCE shall revegetate disturbed areas in accordance with Mitigation Measure 3.4-4, *Sensitive Natural Communities*. Restoration efforts shall comply with the restoration requirements, performance standards, and maintenance and monitoring protocols outlined in Mitigation Measure 3.4-1d and the Sensitive Natural Community Mitigation and Monitoring Plan referenced in Mitigation Measure 3.4-4.
- *Compensation for Permanent Habitat Loss:* For permanent losses of MGS habitat, compensatory mitigation shall be provided at a minimum 1:1 impact-to-mitigation ratio (based on acreage) for affected habitat, or as otherwise directed by CDFW or other applicable resource agencies. Where impacts occur within Areas of Critical Environmental Concern designated under the BLM Desert Renewable Energy Conservation Plan Land Use Plan Amendment, and where such impacts exceed applicable ground disturbance caps, a higher mitigation ratio shall be applied. Compensatory mitigation shall be implemented in accordance with the Desert Renewable Energy Conservation Plan Land Use Plan Amendment (as applicable) and the terms of the CDFW incidental take permit. Acceptable compensatory mitigation may include but is not limited to:
  - Purchase of credits from an approved mitigation bank or in-lieu fee program;
  - On-site and/or off-site land acquisition and permanent preservation; and/or
  - On-site and/or off-site restoration and/or enhancement of MGS habitat.

Mitigation Measure 3.4-2f: American Badger Protection.

To ensure that the American badger is adequately protected during Project construction, all survey methods and protective measures established for the desert kit fox under APM BIO-MAM-2 shall also be applied to the American badger. Among other requirements, these include the use of buffers around active dens, relocation procedures, and the requirement to coordinate with CDFW before any relocation of the species.

Significance after Mitigation: Less than Significant.

Impact 3.4-3: Project operation would have a substantial adverse effect on special-status plant and wildlife species. (***Less than Significant with Mitigation***)

As discussed in Chapter 2, *Project Description*, ongoing Project operation and maintenance activities would be necessary to ensure reliable service, as well as the safety of utility workers and the general public, as mandated by CPUC. The existing operation and maintenance programs implemented for the Project's substations and switchyard would not change as a result of the Project. Existing inspection and maintenance programs would be expanded to include the Project's subtransmission lines. Maintenance would occur as needed and could include activities such as washing insulators, trimming trees, controlling brush and weeds, and maintaining access roads.

Most regular operation and maintenance activities for overhead facilities would occur from Project access roads and would not result in surface disturbance. In addition, SCE would perform vegetation management and regular tree pruning along access roads and subtransmission line corridors. Because operation and maintenance actions are expected to remain within access routes and only limited (if any) ground disturbance would occur, no impacts on special-status plants during this Project phase were identified.

Operation and maintenance could result in direct and/or indirect effects on special-status wildlife species such as desert tortoise, American badger, or Mohave ground squirrel, if present. For example, vehicles used for operation and maintenance activities could result in direct crushing of wildlife species, especially in previously undisturbed areas. Tree trimming and weed control could result in bird nest disturbance or destruction. As described previously, indirect impacts on desert tortoise may result from increased human presence in the area during Project operation, the presence of micro-trash that may attract juvenile tortoise predators such as ravens, and the potential creation of new nesting sites on new subtransmission line structures. The potential also exists for the incidental introduction of invasive non-native plant species or contamination from spills resulting from operation and maintenance, which could reduce habitat quality for special-status wildlife species.

Under APM BIO-HERP-1, *Desert Tortoise*, SCE would implement an RMP to minimize the effects of raven predation on desert tortoise during the operation and maintenance phase. As described in Chapter 2, *Project Description*, Section 2.5.1.1, *Subtransmission Structures*, lightweight steel poles and single-circuit tubular steel poles without distribution underbuild would not have horizontal crossarms. This design reduces opportunities for raven use by limiting surfaces where ravens can perch and nest. However, some such sites would be available on poles with crossarms, which include dead-ended lightweight steel poles that would be located approximately every 3,500 feet along alignments, and on H-frames and double-circuit tubular steel poles where Ravens may be encouraged to nest, compounding the risk to tortoise populations. This would be a significant impact.

To further reduce impacts on desert tortoise related to raven predation during Project operation, Mitigation Measure 3.4-2b, *Raven Management to Protect Desert Tortoise*, clarifies the requirements of the raven management plan that SCE would be required to implement. These requirements include removing materials that attract ravens from the Project site, providing biological monitoring to identify and discourage raven nesting, funding raven control efforts, and

coordinating the success of raven management strategies with resource agencies. With the implementation of this measure, impacts on desert tortoise from raven predation would be **less than significant**.

As described in Chapter 2, *Project Description* (Section 2.5.1.1, *Transmission Structures*), new transmission facilities would be designed consistent with the Avian Power Line Interaction Committee (APLIC) *Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006* (APLIC 2006). Facilities would also be evaluated and furnished with potential collision reduction devices in accordance with *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (APLIC 2012). Even with adherence to these standards, the Project would incrementally increase the bird and bat collision risk above existing baseline conditions with the addition of new transmission structures and power lines within the flight path of birds and bats. However, with adherence to the current APLIC design standards, the collision risk associated with new facilities constitutes a **less-than-significant** impact. Regarding electrocution risks, adherence to the APLIC standards would fully reduce the potential for bird and bat electrocutions by using pole designs that would separate conductors and maintain adequate separation between energized parts and grounds. Hence, no bird or bat electrocution impact would occur.

Most APMs identified by SCE were intended to be applied during Project construction but not operation. In the absence of suitable measures to protect special-status wildlife during operation and maintenance, such as staff training on the recognition and avoidance of wildlife, invasive species management, and the avoidance of nesting birds and special-status wildlife during maintenance activities, site access and maintenance activities would result in a significant impact on special-status wildlife.

Implementation of Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities*, within special-status species habitat would require the implementation of select wildlife protection APMs, including worker training and wildlife surveys, during any ground disturbing actions that may occur during the operation and maintenance phase. Through these actions, special-status species would be recognized and avoided during operations activities that could otherwise impact them or their habitat. This measure would reduce this impact on special-status species and their habitats to less than significant.

Mitigation Measure 3.4-3: APMs and Protection Measures Applicable during Operation and Maintenance Activities.

For all operation and maintenance activities within potential habitat for special-status wildlife species, the following APMs shall be applied:

- APM ENV-GEN-1 WEAP, *Worker's Environmental Awareness Training Program.*
- APM BIO-AVI-2, *Nesting Bird Management Plan.*

If ground disturbance is required in areas that provide habitat for special-status wildlife species, the following APMs and mitigation measures shall also be applied:

- APM BIO-GEN-1, *Pre-construction Biological Clearance Surveys and Monitoring*.
- APM BIO-HERP-1, *Desert Tortoise.*

- APM BIO-MAM-1, *Mohave Ground Squirrel*.
- APM BIO-MAM-2, *Desert Kit Fox Preconstruction Surveys*.
- APM BIO-RES-1, *Develop and Implement Habitat Restoration Plan (HRP)*.
- Mitigation Measure 3.4-2a, *Crotch's Bumble Bee*.
- Mitigation Measure 3.4-2b, *Raven Management to Protect Desert Tortoise*.
- Mitigation Measure 3.4-2d, *Burrowing Owl*.
- Mitigation Measure 3.4-2e, *Mohave Ground Squirrel Protection*.
- Mitigation Measure 3.4-2f, *American Badger Protection*.

Significance after Mitigation: Less than Significant.

Criterion b) Whether the Project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS.

Impact 3.4-4: The Project could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS. (***Less than Significant with Mitigation***)

Construction

As discussed in Section 3.4.2, *Environmental Setting*, above, five sensitive natural communities were identified within the study area. Four of these five sensitive natural communities overlap with Project work areas: Nevada Joint Fir–Anderson's Boxthorn Provisional Association (Nevada Joint Fir–Anderson's Boxthorn–Spiny Hop Sage Scrub Shrubland Alliance); Spinescale Scrub Shrubland Alliance; White Bursage Scrub Shrubland Association (White Bursage Scrub Shrubland Alliance); and Winterfat Scrubland Shrubland Alliance. No Nevada Joint Fir–Cooper's Goldenbush Association (Nevada Joint Fir–Anderson's Boxthorn–Spiny Hop Sage Scrub Shrubland Alliance) areas are mapped within the anticipated work areas that would have temporary or permanent impacts.

Construction grading, vegetation clearing and grubbing, earthmoving, and vehicle and equipment use may alter or degrade existing sensitive natural communities. Construction may directly crush vegetation, may generate dust that could inhibit photosynthesis, and may disturb soils and alter topography. Furthermore, the incidental introduction of non-native weed species from construction activities could degrade sensitive natural communities, which would be a significant indirect impact. Therefore, the Project could negatively affect sensitive natural communities in the proposed work areas. **Table 3.4-6** summarizes anticipated temporary and permanent impacts on sensitive natural communities.

SCE proposes to implement APM ENV-GEN-1 WEAP, which requires that all construction personnel attend a training regarding resource protection and avoidance measures and procedures to be followed upon the discovery of environmental resources; APM BIO-RES-1, which would restore temporarily affected habitat for regulated species, rare plants, and sensitive natural communities; and APM BIO-RES-2, which requires SCE to prepare and implement an IPMP that

would include measures to avoid the Project-related introduction and spread of new non-native invasive plant species and to minimize the spread of invasive plant species. With implementation of these APMs, a significant impact would remain because of the lack of specific performance standards that would apply to restoration activities, and because clarification is needed regarding the avoidance of sensitive natural communities and options for mitigation of permanent habitat impacts. The implementation of Mitigation Measure 3.4-1b and Mitigation Measure 3.4-4, *Sensitive Natural Communities*, would reduce construction-related impacts on sensitive natural communities to a **less-than-significant** level.

TABLE 3.4-6
POTENTIAL IMPACTS ON SENSITIVE NATURAL COMMUNITIES

Vegetation Alliance	Area Mapped within Anticipated Work Areas with Temporary Impacts (acres)	Area Mapped within Anticipated Work Areas with Permanent Impacts (acres)
Nevada Joint Fir–Anderson's Boxthorn Provisional Association (Nevada Joint Fir–Anderson's Boxthorn–Spiny Hop Sage Scrub Shrubland Alliance)	3.63	1.20
Spinescale Scrub Shrubland Alliance	66.87	24.45
White Bursage Scrub Shrubland Association (White Bursage Scrub Shrubland Alliance)	10.26	3.49
Winterfat Scrubland Shrubland Alliance	5.92	3.32
Total Acres Sensitive Native Vegetation	***86.68***	***32.46***

SOURCE: SCE 2024b

Mitigation: Implement Mitigation Measure 3.4-1b, *Special-Status Herbaceous Plants Compensatory Mitigation and Restoration* (see Impact 3.4-1), and the mitigation measure listed below.

Mitigation Measure 3.4-4: Sensitive Natural Communities.

Sensitive natural communities shall be avoided and direct impacts minimized whenever possible. Areas identified for avoidance shall be demarcated (e.g., using brightly colored flagging or similar) and avoided during construction of the Project. The marked boundaries shall be maintained for the duration of construction activities in each work area and shall be clearly visible to personnel on foot and by heavy equipment operators. If sensitive natural communities can be avoided, no further mitigation is necessary.

If permanent impacts on sensitive natural communities cannot be avoided, impacts shall be mitigated by providing comparable habitat at a 1:1 impact-to-mitigation ratio based on acreage for any habitat affected by the Project, or as otherwise directed by resource agencies. This may include but is not limited to the following measures:

- The purchase of credits from a mitigation bank or in-lieu fee program.
- On- and/or off-site land acquisition and preservation.
- On- and/or off-site creation, restoration, and/or enhancement of sensitive natural communities.

If compensatory mitigation is to occur on- or off-site (i.e., not a mitigation bank or in-lieu fee program), a Sensitive Natural Community Mitigation and Monitoring Plan shall be

prepared by a qualified biologist/restoration ecologist. The plan shall include details related to implementation requirements (e.g., seeding, planting, and/or staking of sensitive natural community species; salvage/dispersal of duff and seed bank; and/or removal of invasive, non-native species), performance standards as identified in Mitigation Measure 3.4-1d, maintenance requirements, and future monitoring requirements.

Significance after Mitigation: Less than Significant.

Operation

As discussed above, ongoing Project operation and maintenance activities would be necessary to ensure reliable service, as well as the safety of utility workers and the general public, as mandated by CPUC. The existing operation and maintenance programs implemented for the Project's substations and switchyard would not change as a result of the Project. Existing inspection and maintenance programs would be expanded to include the Project's new subtransmission lines. Maintenance would occur as needed and could include activities such as washing insulators, trimming trees, controlling brush and weeds, and maintaining access roads. Most regular operation and maintenance activities for overhead facilities would occur from existing access roads and would not result in surface disturbance. In addition, SCE would perform vegetation management and regular tree pruning along access roads and around electrical lines.

Operation and maintenance could result in indirect effects on sensitive natural communities. Dust generated by road traffic may hinder the photosynthetic processes of plants. The incidental introduction of invasive non-native plant species or contamination from spills resulting from operation and maintenance has the potential to negatively affect sensitive natural communities. These indirect impacts on sensitive natural communities during operation and maintenance would be significant. Therefore, implementation of Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities*, is required to reduce significant impacts on sensitive natural communities to a **less-than-significant** level.

Mitigation: Implement Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities* (see Impact 3.4-3).

Significance after Mitigation: Less than Significant.

Criterion c) Whether the Project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.), other jurisdictional waters, and riparian habitat through direct removal, filling, hydrological interruption, or other means.

Impact 3.4-5a: Project construction could have an adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means. (*Less than Significant with Mitigation*)

An aquatic resources delineation for the Project was conducted in February 2024, and the Draft Aquatic Resources Delineation Report was prepared in August 2024 (Artemis Environmental Services 2024d). As described in Section 3.4.2.4, *Aquatic Resources*, there are no federally

regulated waters or wetlands in the study area and the Project would have no impact on federally protected wetlands or waters. There are also no state-regulated wetlands in the study area; however, there are approximately 25 acres of waters of the state in the study area (Artemis Environmental Services 2024d). As described below, an unknown portion of these jurisdictional waters of the state could be affected directly during construction or indirectly during operation of the Project.

Construction of the Project could result in temporary direct disturbance of waters of the state from such activities as overland travel by vehicles and equipment, equipment staging, material laydown, foot traffic, structure placement, and general construction activities. In addition, permanent impacts on waters could occur within the footprint of the expanded Cal City Substation, along new or improved access roads, at the locations of individual poles or structures installed along subtransmission alignments, and at the locations of permanent operation and maintenance structure pads. This would occur due to the direct fill of or culverting of waters that occur within the Project disturbance footprint.

If CDFW or the RWQCB find that some or all of the features identified in the updated 2024 Draft Aquatic Resources Delineation Report fall within their jurisdictional purview, then temporary or permanent impacts on wetlands or waters of the state that could result from construction must be compensated to result in “no net loss” of wetlands.

To minimize impacts on jurisdictional waters, SCE has identified APM WET-1, *Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats*, which specifies that SCE would obtain authorizations as required from CDFW and the RWQCB before construction, if necessary. This measure also identifies BMPs to limit temporary impacts on waters of the state, such as installing silt fencing, straw wattles, and secondary containment and avoiding fueling within 100 feet of jurisdictional waters. APM WET-1 also stipulates that if permanent impacts on waters and riparian habitats are unavoidable, they shall be offset at a 1:1 ratio or a ratio determined by the applicable resource agency, and that temporarily affected jurisdictional waters be returned to preexisting contours upon the completion of work. Furthermore, the Project would be required to develop and implement one or more Project-specific SWPPPs that would include additional BMPs to prevent erosion and sedimentation into wetlands and streams that could result from construction activities. Indirect impacts on aquatic resources could also result from spillage of hazardous materials used during construction, as well as from erosion and sedimentation.

The SWPPP would require that vehicles be checked daily and maintained in accordance with manufacturer’s specifications to minimize the potential for leaks; refueling and maintenance of vehicles would occur at least 50 feet from the edge of any aquatic feature. Therefore, indirect impacts from the spillage of hazardous materials on aquatic resources would be less than significant. However, the erosion and sedimentation impact on non-wetland waters of the state would remain significant. This impact would be avoided and minimized through implementation of an erosion control plan as required by Mitigation Measure 3.10-1a, *Erosion Control Plan*. Implementation of Mitigation Measure 3.10-1a would reduce impacts on waters of the state to **less than significant**.

> **Mitigation:** Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a in Section 3.10, *Hydrology and Water Quality*).

Significance after Mitigation: Less than Significant.

Impact 3.4-5b: Project operation and maintenance could have an adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means. (***Less than Significant***)

As discussed above, ongoing Project operation and maintenance activities would be necessary to ensure reliable service, as well as the safety of utility workers and the general public, as mandated by CPUC. The existing operation and maintenance programs implemented for the Project's substations and switchyard would not change as a result of the Project. Existing inspection and maintenance programs would be expanded to include the Project's new subtransmission and telecommunications lines. Maintenance would occur as needed and could include activities such as washing insulators, trimming trees, controlling brush and weeds, and maintaining access roads. Regular operation and maintenance activities of overhead facilities would occur from existing access roads and would not result in surface disturbance. SCE would also perform vegetation management and regular tree pruning along access roads, around helipads, and around electrical lines.

These activities would occur within existing and new ROWs and would not affect wetlands or waters of the state. Work areas would be relatively small and would be designed to manage runoff such that it would not substantially degrade jurisdictional features. Therefore, operation of the Project would result in a less-than-significant impact on waters of the state.

Mitigation: None required.

Criterion d) Whether the Project would 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.

Impact 3.4-6: Project construction and operation could interfere with the movement of migratory wildlife species or migratory wildlife corridors or impede the use of native wildlife nursery sites. (***Less than Significant with Mitigation***)

Construction

Wildlife Movement

As discussed in Section 3.4.2.5, *Wildlife Movement*, movement and dispersal corridors (essential connectivity areas) that connect large blocks of habitat are essential to the long-term viability of plant and wildlife populations. The Project would overlap and be located near or adjacent to areas that have been identified by the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) as Areas of Critical Environmental Concern (ACECs) for the protection of wildlife linkages and other wilderness areas. Portions of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment fall within the Fremont–Kramer ACEC and the Desert Tortoise Research Natural Area ACEC. In addition, the study area may overlap movement routes that may connect Mohave ground squirrel core areas and known populations. Construction activities would result in localized, short-term hindrance of movement by resident or migratory wildlife as a result of temporary noise, lighting, dust, and human activities within the work area.

Similarly, helicopter activity in construction areas would temporarily alter the behavior patterns of some local birds and wildlife. Proposed subtransmission line construction activities near the DRECP LUPA ACECs would be limited to several discrete work areas, and construction activities—including the use of helicopters—would be limited to only several weeks at any specific work area; therefore, such activities would have a less-than-significant impact on wildlife behavior. Additionally, focused bird surveys required by Mitigation Measure 3.4-2c, *Nesting Bird Management Plan*, would reduce potential impacts on nesting birds during construction to less than significant.

Although construction activities could result in impacts on vegetation communities that support wildlife movement, SCE would implement APM BIO-RES-1, which requires that temporarily affected habitats for regulated plant species and vegetation communities be restored. Furthermore, the Project would implement APM BIO-RES-2, which would require SCE to prepare and implement an IPMP that would include measures to avoid the Project-related introduction and spread of new non-native invasive plant species and to minimize the spread of invasive plant species. The Project would have a minimal impact on wildlife habitat that supports species movement and would not hinder the use of habitat linkages or wildlife movement corridors. As a result, construction-related impacts on migratory wildlife species or migratory wildlife corridors would be less than significant.

Nursery Sites

Project construction activities such as grading, installation of subtransmission line poles, and the substation expansion could disturb nesting birds and cause nest site abandonment and/or reproductive failure from increased noise, artificial light, human presence, and/or removal of habitat. The Cal City Substation expansion area and subtransmission line alignments are located within mapped habitat types that could support the nesting behavior of a variety of species protected by federal and state regulations. To reduce this impact, SCE would implement APM BIO-GEN-1, which requires general preconstruction biological surveys and monitoring. In addition, APM BIO-AVI-2 requires the preparation and implementation of a nesting bird management plan. Although implementing APM BIO-AVI-2 would reduce the impact on nesting birds, impacts would remain significant. Therefore, Mitigation Measure 3.4-2c supplements the avian survey requirements for nesting birds identified in APM BIO-AVI-2. With implementation of Mitigation Measure 3.4-2c, impacts on nursery sites from construction would be less than significant.

Operation

Operation and maintenance activities would occur at established facility sites on a periodic basis. Maintenance actions are not expected to interfere substantially with the movement of wildlife or impede the use of wildlife nursery sites. As described in Impact 3.4-3, Project operation could cause direct impacts on adult and/or juvenile desert tortoise, if present within the work area, from encounters with maintenance equipment, as well as indirect impacts on juvenile desert tortoise as a result of increased human presence and the potential creation of raven nesting sites on new transmission structures. This would be a significant impact. With implementation of Mitigation Measure 3.4-2b, *Raven Management to Protect Desert Tortoise*, potential raven nesting conflicts would be identified and addressed, should they arise. Additionally, implementation of Mitigation

Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities*, would reduce this impact on desert tortoise. The implementation of these measures would reduce potential impacts of Project operation related to the movement of native resident or migratory wildlife, use of wildlife corridors, or use of native wildlife nursery sites to less than significant.

> **Mitigation:** Implement Mitigation Measure 3.4-2b, *Raven Management to Protect Desert Tortoise* (see Impact 3.4-2); Mitigation Measure 3.4-2c, *Nesting Bird Management Plan*; and Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities* (see Impact 3.4-3).
>
> **Significance after Mitigation:** Less than Significant.

Criterion e) Whether the Project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact 3.4-7a: Project construction would conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (***Less than Significant with Mitigation***)

The CPUC has exclusive jurisdiction over the siting, design, and construction of the Project. As a result, the Project is not subject to local land use or zoning regulations, nor does it require discretionary permits from local agencies. However, local biological resource policies and ordinances were reviewed to ensure that the Project would not conflict with local protections.

Local policies and ordinances that address biological resources include the Kern County General Plan, the San Bernardino Countywide Plan, Chapter 88.01 of the San Bernardino County Code of Ordinances, and the City of California City General Plan. These local plans contain goals and policies related to the protection of biological resources. The Project would secure ministerial permits as necessary, including for compliance with the requirements of Chapter 88.01 of the San Bernardino County Code of Ordinances, which provides regulations and guidelines for the management of desert native plant resources in unincorporated areas of the county. Impacts on Joshua trees would be reduced through implementation of APM BIO-BOT-2, *Special-Status Perennial Plants and Other Species*, but the impact on up to four Joshua trees would remain significant. Therefore, the Project would conflict with Chapter 88.01 of the San Bernardino County Code of Ordinances, which would be a significant impact. The impact would be reduced to less than significant through implementation of Mitigation Measure 3.4-1b, *Special-Status Herbaceous Plants Compensatory Mitigation and Restoration*. With implementation of Mitigation Measure 3.4-1b, potential conflicts with policies identified in applicable general plans and local ordinances during construction would be less than significant.

> **Mitigation:** Implement Mitigation Measure 3.4-1b, *Special-Status Herbaceous Plants Compensatory Mitigation and Restoration*.
>
> **Significance after Mitigation:** Less than Significant.

Impact 3.4-7b: Project operation would not conflict with any local policies or ordinances protecting biological resources. (***Less than Significant***)

As discussed above, ongoing Project operation and maintenance activities would be necessary to ensure reliable service, as well as the safety of utility workers and the general public, as mandated by CPUC. The existing operation and maintenance programs implemented for the Project's substations and switchyard would not change as a result of the Project. Existing inspection and maintenance programs would be expanded to include the Project's new subtransmission and telecommunications lines. Proposed operation and maintenance activities for these facilities are not expected to conflict with local policies or ordinances. Any associated potential impact would be less than significant.

Mitigation: None required.

Criterion f) Whether the Project would conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

The Project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP. *(No Impact)*

The Project is located within the planning areas of the California Desert Conservation Area Plan (CDCA), the West Mojave Plan (BLM 2005), and the Desert Renewable Energy Conservation Plan (DRECP) (BLM 2016), which amend the original CDCA. Although the BLM issued a Record of Decision for the West Mojave Plan in 2006, it remains unadopted. Project activities located on BLM lands within the Desert Renewable Energy Conservation Plan area, which includes approximately 15.5 miles of the Project alignment, are subject to all applicable plan requirements, including goals and objectives focused on the conservation of habitat and vegetation types to promote habitat connectivity, preservation of ecological processes, and conservation of desert tortoise. The DRECP anticipates that transmission development and operation will occur within and outside of designated corridors and other identified areas, both inside and outside of Development Focus Areas. The BLM is conducting a separate review to fulfill their responsibilities under the National Environmental Policy Act. However, the DRECP is a BLM plan amendment and not an HCP, NCCP, or local, regional, or state conservation plan. The Project would not conflict with the DRECP.

In addition, approximately 0.6 mile of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment is located on two properties within the West Mojave Desert Ecological Reserve, which is managed by CDFW. This portion of the proposed Kramer–Cal City alignment includes the proposed locations of Poles 5076-1 through 5080-1 (see Appendix A, pages 82 and 83) and Poles 5100-1 through 5102-1 (see Appendix A, pages 78 and 79). The West Mojave Desert Ecological Reserve is CDFW-managed land and is not subject to an HCP, NCCP, or local, regional, or state conservation plan. No adopted HCPs or NCCPs apply to the Project site; therefore, no impact would occur.

Criterion g) Whether the Project would create a substantial collision or electrocution risk for birds or bats.

Construction of the Project would involve the use of large, highly visible construction equipment that would not present a collision risk for birds or bats in flight. Similarly, birds and bats would not be exposed to electrocution risk during construction. *(No Impact)*

Impact 3.4-8: Project operation would create a collision and/or electrocution risk for birds or bats. (*Less than Significant*)

As discussed in Impact 3.4-3, new subtransmission poles and lines are expected to have a less-than-significant impact on birds and bats as a result of line strikes and collisions with birds and bats during operation of the Project. Additionally, adherence to APLIC standards as identified in Chapter 2, *Project Description* (Section 2.5.1.1, *Subtransmission Structures*) would fully reduce the potential for bird and bat electrocutions through the use of pole designs that maintain separation between energized parts and grounds. Hence, no bird or bat electrocution impact was identified. As stated in Project Description Section 2.5.1.1, *Subtransmission Structures*, all subtransmission facilities constructed as part of the Project would be designed following the APLIC *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006). Design consistency with the APLIC suggested practices would reduce the potential for collisions and/or electrocution of birds and bats during operation of the Project. Therefore, the impact would be **less than significant**.

Mitigation: None required.

3.4.6.3 Cumulative Effects Analysis

This section presents an analysis of the cumulative effects of the Project when considered in combination with other past, present, and reasonably foreseeable future projects that could result in cumulatively considerable impacts on regulated biological resources. Significant cumulative impacts could occur if the incremental impacts of the Project would combine with the incremental impacts of one or more cumulative projects. Section 3.0.3, *Approach to the Cumulative Impacts Analysis*, includes Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, which lists past, present, and reasonably foreseeable future projects within a 5-mile radius of the Project site.

The geographic context for the analysis of cumulative impacts associated with biological resources considered ongoing and future projects within 5 miles of the Project's components and alternatives that would affect similar habitat or biological resources, as described in Section 3.0. This distance represents a commonly-applied cumulative impact assessment range for special-status species that were identified in the Project impact analysis. The temporal scope of the cumulative analysis includes the 24-month duration of construction and the ongoing operation and maintenance phase thereafter.

Criterion a)

Impact C.3.4-1: The Project construction impact related to an adverse effect on special-status plant species would be cumulatively considerable. (***Less than Significant with Mitigation***)

Focused botanical surveys conducted in the biological resources study area (see Appendix G and Impact 3.4-1) identified five special-status plant species: pink funnel lily, Barstow woolly sunflower, Mojave spineflower, desert cymopterus, and western Joshua tree. These species may be subject to direct or indirect impacts during Project construction if avoidance within the Project sites is not feasible. To reduce the potential for construction impacts on special-status plants, SCE proposes to implement the following measures: APM BIO-GEN-1, *Pre-construction Biological Clearance Surveys and Monitoring*; APM ENV-GEN-1 WEAP, *Worker's Environmental Awareness Training Program*; APM BIO-RES-1, *Develop and Implement Habitat Restoration Plan (HRP)*; and APM BIO-RES-2, *Develop Invasive Plant Management Plan*. These APMs would reduce the impact on special-status plants; however, the Project impact would remain significant.

As shown in Table 3.0-1, 16 cumulative projects have been identified within 5 miles of the Project. These include commercial, energy, and industrial developments, which are subject to environmental review by local jurisdictions. These projects are located on a mix of developed, previously disturbed, and undisturbed lands outside the Project site. It is expected that these cumulative projects would comply with applicable federal and state environmental regulations. As part of their respective reviews, they would be required to implement mitigation, avoidance, and minimization measures to reduce impacts on special-status plant species. However, the impact of the Project combined with the impacts of cumulative projects would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable.

Therefore, the following mitigation measures are recommended: Mitigation Measure 3.4-1a, *Invasive Plant Management Plan*; Mitigation Measure 3.4-1b, *Special-Status Herbaceous Plants Compensatory Mitigation and Restoration*; and Mitigation Measure 3.4-1c, *Western Joshua Tree*. Together, these measures would reduce the Project's contribution to the cumulative impact on special-status plants to a **less-than-significant** level.

> **Mitigation:** Implement Mitigation Measure 3.4-1a, *Invasive Plant Management Plan*; Mitigation Measure 3.4-1b, *Special-Status Herbaceous Plants Compensatory Mitigation and Restoration*; and Mitigation Measure 3.4-1c, *Western Joshua Tree* (see Impact 3.4-1a).
>
> **Significance after Mitigation:** Less than Significant.

Impact C.3.4-2: The Project construction impact related to an adverse effect on special-status wildlife species would be cumulatively considerable. (***Less than Significant with Mitigation***)

As detailed in Section and Impact 3.4-2, eight special-status wildlife species have been identified within the Project area: desert tortoise, Cooper's hawk, burrowing owl, California horned lark, prairie falcon, loggerhead shrike, LeConte's thrasher, and desert kit fox. Additionally, five other

species may be present based on suitable habitat conditions: Crotch's bumble bee, golden eagle and Swainson's hawk (foraging only), American badger, and Mohave ground squirrel.

Project construction activities could result in impacts on special-status invertebrates, reptiles, birds, and mammals. To minimize these potential impacts, SCE proposes to implement a series of APMs during construction.

Invertebrates

As discussed in Impact 3.4-2, Crotch's bumble bee has a high potential to occur within the study area. Suitable habitats for this species include desert margins such as Joshua tree and creosote scrub, and semi-urban settings. Construction activities associated with the Project could result in direct injury or mortality to individual bumble bees through vehicle or equipment strikes, or through the destruction of active nests. Additionally, construction could lead to temporary or permanent degradation of suitable habitat due to ground disturbance and the introduction of non-native invasive plant species. The Project impact would be significant.

Upon reviewing the 16 projects within 5 miles of the of the Project (see Table 3.0-1), the possibility exists that at least one cumulative project could also impact Crotch's bumble bee, particularly those that are proposed within similar habitats. However, as noted above, cumulative projects would undergo environmental reviews and measures would be identified to avoid or minimize their impact on special-status invertebrates. Nonetheless, the significant construction impact of the Project on Crotch's bumble bee combined with the impacts of cumulative projects would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable.

To reduce the Project's contribution to cumulative impacts on Crotch's bumble bee, Mitigation Measure 3.4-2a, *Crotch's Bumble Bee* has been identified. With implementation of this mitigation measure, Project construction, in combination with the cumulative projects, would have a **less-than-significant** cumulative impact on special-status invertebrates.

Reptiles

The desert tortoise is known to occur within the Project area, which contains substantial suitable habitat throughout much of its extent. Focused surveys confirmed the presence of tortoises along the Kramer–Cal City alignment and the southern portion of the proposed Cal City–Edwards-Holgate alignment. As discussed in Impact 3.4-2, construction activities have the potential to cause direct injury or mortality to desert tortoises and may disturb or destroy existing burrows. In addition to physical impacts, construction-related factors such as increased noise, artificial lighting, human presence, and the spread of non-native invasive plant species could degrade or result in the loss of suitable habitat. These disturbances may alter topography and water flow or facilitate the invasion of sensitive areas by non-native vegetation, further affecting tortoise habitat.

Indirect impacts on desert tortoise may result from increased human activity in the area during construction. In particular, construction in rural desert environments can elevate avian predation pressure on local wildlife. Improper handling or disposal of trash and organic waste may attract predators such as the common raven, which can lead to increased predation on juvenile desert

tortoises and other sensitive species. Ravens may be further encouraged to nest on new subtransmission line structures, compounding the risk to tortoise populations.

To reduce the potential Project construction impacts on desert tortoise, SCE proposes to implement the following: APM BIO-GEN-1, *Pre-construction Biological Clearance Surveys and Monitoring*; APM BIO-HERP-1, *Desert Tortoise*; APM BIO-RES-1, *Develop and Implement Habitat Restoration Plan (HRP)*; and APM BIO-RES-2, *Develop Invasive Plant Management Plan*; however, direct impacts of the Project would remain significant.

The 16 cumulative projects identified within 5 miles of the Project include but are not limited to commercial, energy, and industrial projects, which would undergo environmental review by local jurisdictions. These projects would occur on developed, previously disturbed, and undisturbed lands outside of the Project site and some may also impact the desert tortoise. It is anticipated that environmental reviews would adhere to federal and state regulations. Cumulative projects would be subject to measures (e.g., mitigation measures, avoidance and minimization measures) as part of their respective environmental review, or as existing mitigation commitments to avoid or limit their impacts on desert tortoise.

Even so, the significant construction impact of the Project combined with the impacts of cumulative projects would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable. Therefore, implementation of the following measure is recommended: Mitigation Measure 3.4-2b, *Raven Management to Protect Desert Tortoise*. With implementation of this mitigation measure, the Project's incremental contribution to the cumulative impact would be reduced to a **less-than-significant** level related to this species.

Birds

Six special-status bird species—Cooper's hawk, burrowing owl, California horned lark, prairie falcon, loggerhead shrike, and LeConte's thrasher—were observed within the study area. Additionally, golden eagle and Swainson's hawk are expected to occur incidentally due to the presence of suitable foraging habitat, although nesting is not anticipated.

As discussed in Impact 3.4-2, construction activities associated with the Project could result in direct mortality to special-status birds and/or disturbance of nesting birds and subsequent nest site abandonment, and/or reproductive failure from increased noise, artificial light, and human presence. Furthermore, construction activities could result in temporary or permanent degradation and loss of suitable habitat through disturbance and/or introduction of non-native weed species.

SCE proposes implementation of the following APMs to reduce Project impacts on special-status birds: APM BIO-GEN-1, *Pre-construction Biological Clearance Surveys and Monitoring*; APM BIO-AVI-2, *Nesting Bird Management Plan*; APM ENV-GEN-1 WEAP, *Worker's Environmental Awareness Training Program*; and APM BIO-RES-1, *Develop and Implement Habitat Restoration Plan (HRP)*. These APMs would reduce the impact on special-status birds; however, the Project impact would still be significant.

The 16 cumulative projects identified within 5 miles of the Project include but are not limited to commercial, energy, and industrial projects, which would undergo environmental review by local

jurisdictions. These projects would occur on developed, previously disturbed, and undisturbed lands outside of the Project site and some may also impact special-status birds. It is anticipated that environmental reviews will adhere to federal and state regulations. Cumulative projects would be subject to measures (e.g., mitigation measures, avoidance and minimization measures) as part of their respective environmental review, or as existing mitigation commitments to avoid or limit their impacts on special-status birds.

However, the significant construction impact of the Project combined with the impacts of cumulative projects would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable. Implementation of Mitigation Measure 3.4-2c, *Nesting Bird Management Plan* and Mitigation Measure 3.4-2d, *Burrowing Owl*, is recommended. With implementation of these mitigation measures, the Project's incremental contribution to the cumulative impact related to special-status birds would be reduced to a **less-than-significant** level.

Mammals

As discussed in Impact 3.4-2, direct impacts on one protected mammal and two special-status mammals (desert kit fox, American badger, and Mohave ground squirrel, respectively) could occur as a result of the Project. Impacts may result from potential vehicle strikes, destruction of burrows during construction and vegetation clearing; entrapment in excavations; and temporary and permanent loss of suitable habitat. Additionally, indirect impacts during construction could include decreased habitat suitability due to noise or increased human activity. Noise from construction activities could interfere with mammals foraging or caring for young. However, noise during construction activities would be short-lived and would not likely be substantially higher than the existing background noise at the Project site.

To reduce the potential construction impacts on special-status mammals, SCE proposes to implement general and focused APMs. APMs include APM BIO-GEN-1, *Pre-construction Biological Clearance Surveys and Monitoring*; APM ENV-GEN-1 WEAP, *Worker's Environmental Awareness Training Program*; APM BIO-RES-1, *Develop and Implement Habitat Restoration Plan (HRP)*; APM BIO-RES-2, *Develop Invasive Plant Management Plan*; APM BIO-MAM-1, *Mohave Ground Squirrel*; and APM BIO-MAM-2, *Desert Kit Fox*.

The 16 cumulative projects identified within 5 miles of the Project include but are not limited to commercial, energy, and industrial projects, which would undergo environmental review by local jurisdictions. These projects would occur on developed, previously disturbed, and undisturbed lands outside of the Project site and some may also impact regulated or otherwise special-status mammals. It is anticipated that environmental reviews will adhere to federal and state regulations. Cumulative projects would be subject to measures (e.g., mitigation measures, avoidance and minimization measures) as part of their respective environmental review, or as existing mitigation commitments to avoid or limit their impacts on special-status mammals.

Nonetheless, the significant construction impact of the Project on protected and special-status mammals combined with the impacts of cumulative projects would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively

considerable. Therefore, implementation of Mitigation Measure 3.4-2e, *Mohave Ground Squirrel Protection* and Mitigation Measure 3.4-2f, *American Badger Protection*, is recommended. With implementation of these mitigation measures, the Project's incremental contribution to the cumulative impact on protected and special-status mammals would be reduced to a **less-than-significant** level.

Critical Habitat

The Project site overlaps two small areas designated by USFWS as critical habitat for the desert tortoise: one at the intersection of U.S. 395 and Twenty Mule Team Parkway, and another near Kramer Junction (see Figure 3.4-5). Project activities are anticipated to result in approximately 32.66 acres of temporary impacts and 13.64 acres of permanent impacts on critical habitat.

As discussed in Impact 3.4-2, these impacts are not expected to render the local population of desert tortoise unviable, restrict species movement, or substantially reduce available habitat for this species. As stated in APM BIO-HERP-1, *Desert Tortoise*, SCE has committed to obtain take coverage and consult with the USFWS and CDFW to obtain the necessary permits for the Project. The Project is not likely to adversely modify critical habitat due to habitat loss, fragmentation, or degradation, and any minor impacts would be addressed through formal consultation with USFWS.

Regarding cumulative projects identified in Table 3.0-1, these projects would be subject to environmental review, which would evaluate potential construction impacts on critical habitat, if necessary, require mitigation measures or permit authorizations to reduce those impacts to less-than-significant levels. The 16 cumulative projects identified within a 5-mile radius will undergo separate environmental review, which would assess potential impacts on desert tortoise critical habitat. If necessary, these reviews will require mitigation measures and permit authorizations to reduce associated impacts on critical habitat to less-than-significant levels. The total acreage of critical habitat that would be affected by these projects is not reasonably available; however, based on the Project and the types and locations of these cumulative projects, the Project's contribution to any cumulative construction impact on designated critical habitat for desert tortoise would not be considerable. As a result, the cumulative impact would be **less than significant**.

> **Mitigation:** Mitigation Measure 3.4-2a, *Crotch's Bumble Bee*; Mitigation Measure 3.4-2b, *Raven Management to Protect Desert Tortoise*; Mitigation Measure 3.4-2c, *Nesting Bird Management Plan*; Mitigation Measure 3.4-2d, *Burrowing Owl*; Mitigation Measure 3.4-2e, *Mohave Ground Squirrel Protection*; and Mitigation Measure 3.4-2f, *American Badger Protection* (see Impact 3.4-2).
>
> **Significance after Mitigation:** Less than Significant.

Impact C.3.4-3: The Project operational impact related to a substantial adverse effect on special-status plant and wildlife species would be cumulatively considerable. (***Less than Significant with Mitigation***)

Operational activities associated with the Project would not result in permanent habitat impacts and are expected to generate only minimal levels of traffic and human activity. As described in Impact 3.4-3, operation and maintenance could lead to direct or indirect effects on special-status wildlife species, including desert tortoise and designated critical habitat for this species. These

effects may include crushing of individuals, disturbance to nesting birds, or increased predation on juvenile tortoises by ravens that perch or nest on new subtransmission line structures or are attracted to the Project site by discarded micro-trash. No direct impacts on special-status plant species are anticipated during the operational phase. However, indirect Project impacts could occur if operational activities inadvertently introduce or facilitate the spread of non-native invasive plant species.

Regarding cumulative impacts, other projects identified in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, may also involve operational activities that could affect special-status plant and wildlife species. These projects would be subject to environmental review, which would evaluate potential operational impacts and, if necessary, require mitigation measures to reduce those impacts to less-than-significant levels. The significant impact of Project operation on protected special-status wildlife would combine with impacts of the cumulative projects to be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable. To reduce the potential for Project operation–related impacts on special-status plants and wildlife, implementation of Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities* and Mitigation Measure 3.4-1a, *Invasive Plant Management Plan* are recommended. These mitigation measures would reduce the Project's contribution to the cumulative operational impact on special-status plants and wildlife to a less-than-significant level.

Therefore, when considered in combination with other cumulative projects, the Project's contribution to cumulative impacts related to this criterion would not be cumulatively considerable with implementation of Mitigation Measures 3.4-3 and 3.4-1a. The cumulative impact would be reduced to **less than significant**.

> **Mitigation:** Implement Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities and* Mitigation Measure 3.4-1a, *Invasive Plant Management Plan* (see Impacts 3.4-3 and 3.4-1, respectively).
>
> **Significance after Mitigation:** Less than Significant.

Criterion b)

Impact C4.3-4: The Project impact related to having a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS, would be cumulatively considerable. (***Less than Significant with Mitigation***)

Construction

As discussed in Impact 3.4-4, four sensitive natural communities recognized by CDFW occur within the Project site and would be subject to direct and indirect impacts during construction. These impacts would occur as a result of initial vegetation clearing, grading, dust generation, changes to topography that alter water flow, or the introduction of non-native invasive plant species that degrade habitat quality. Specifically, Project construction activities could temporarily disturb up to 86.68 acres and permanently impact up to 32.46 acres of sensitive scrub habitat (Table 3.4-6).

To minimize these impacts, SCE has committed to restoring temporarily disturbed sensitive vegetation communities with implementation of APM BIO-RES-1, *Develop and Implement Habitat Restoration Plan*. Additionally, SCE proposes to implement APM ENV-GEN-1 WEAP, *Worker's Environmental Awareness Training Program*, and APM BIO-RES-2, *Develop Invasive Plant Management Plan*, to further reduce Project-related impacts. However, the permanent impact would be significant.

As shown in Figure 3.0-1, several cumulative projects are located near the Project area and are expected to be constructed on a similar timeline. Some of these projects may also affect sensitive natural communities. Such impacts would be identified during environmental review, and appropriate mitigation measures would likely be applied to reduce those impacts to less-than-significant levels. The significant impact of the Project combined with impacts of the cumulative projects would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable. To address the Project's contribution to the cumulative impact, implementation of Mitigation Measure 3.4-1b, *Special-Status Herbaceous Plants Compensatory Mitigation and Restoration*, and Mitigation Measure 3.4-4, *Sensitive Natural Communities*, is recommended. With implementation of Mitigation Measures 3.4-1b and 3.4-4, the Project's contribution to the cumulative construction impact on sensitive natural communities would be reduced to **less than significant**.

> **Mitigation:** Implement Mitigation Measure 3.4-1b, *Special-Status Herbaceous Plants Compensatory Mitigation and Restoration* (see Impact 3.4-1), and Mitigation Measure 3.4-4, *Sensitive Natural Communities* (see Impact 3.4-4).
>
> **Significance after Mitigation:** Less than Significant.

Operation

As discussed in Impact 3.4-4, four sensitive natural communities recognized by CDFW occur within the Project site and would be subject to significant impacts from Project operation. As shown in Figure 3.0-1, several cumulative projects are located near the Project area. Some of these projects may also affect sensitive natural communities. The significant impact of the Project combined with impacts of the cumulative projects would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable.

To address the Project's contribution to the cumulative impact, implementation of Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities*, is recommended. With implementation of Mitigation Measure 3.4-3, the Project's contribution to the cumulative operational impact on sensitive natural communities would be reduced to **less than significant**.

> **Mitigation:** Implement Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities* (see Impact 3.4-3).
>
> **Significance after Mitigation:** Less than Significant.

Criterion c)

Impact C.3.4-5a: The Project construction impact related to having a substantial adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means would be cumulatively considerable. (***Less than Significant with Mitigation***)

As identified in Impact 3.4-5a, construction of the Project could result in temporary direct disturbance to regulated waters of the state. Temporary or permanent impacts on wetlands or waters of the state that could result from construction must be compensated to result in "no net loss" of wetlands. To minimize impacts on jurisdictional wetlands and waters, SCE is committed to implementing APM WET-1, *Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats*; however, the erosion and sedimentation impact of the Project on non-wetland waters of the state would be significant.

Similarly, past, present, and reasonably foreseeable future projects listed in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, may also affect these biological resources. Most cumulative projects would be constructed and operated on previously developed or disturbed uplands and would be subject to local development review. Where applicable, this review would require compliance with regulatory standards and could trigger additional environmental evaluations. As part of these processes, cumulative projects would be required to implement mitigation measures or fulfill existing commitments to avoid or minimize impacts on state or federally protected wetlands identified in local or regional plans, policies, or regulations. Nonetheless, the significant impact of the Project combined with impacts of the cumulative projects would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable.

The Project's contribution to this cumulative impact would be avoided and minimized through implementation of an erosion control plan as required by Mitigation Measure 3.10-1a, *Erosion Control Plan*. With implementation of this mitigation measure, the cumulative construction impacts on state-protected wetlands would be less than significant.

> **Mitigation:** Implement Mitigation Measure 3.10-1, *Erosion Control Plan* (see Impact 3.10-1a in Section 3.10, *Hydrology and Water Quality*).
>
> **Significance after Mitigation:** Less than Significant.

Impact C.3.4-5b: The Project operation and maintenance impact related to having a substantial adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means would not be cumulatively considerable. (***Less than Significant***)

As discussed in Impact 3.4-5b, ongoing Project operation and maintenance activities would occur within existing and new ROWs and would not affect wetlands or waters of the state. It is anticipated that work areas would be relatively small and would be designed to manage runoff to avoid substantially degrading jurisdictional features. Therefore, operation of the Project would result in a less-than-significant impact on waters of the state. Past, present, and reasonably foreseeable future projects listed in Table 3.0-1, *Cumulative Projects within 5 Miles of the*

Project, could affect waters of the state; however, the Project's incremental contribution to the cumulative impact would not be cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion d)

Impact C.3.4-6: The Project impact related to interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or to impeding the use of native wildlife nursery sites, would be cumulatively considerable. (***Less than Significant with Mitigation***)

As discussed in Impact 3.4-6, the Project would be located within and adjacent to areas designated as Areas of Critical Environmental Concern (ACECs) under the Desert Renewable Energy Conservation Plan Land Use Plan Amendment, which aim to protect wildlife linkages and wilderness values. Portions of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment traverse the Fremont–Kramer ACEC and the Desert Tortoise Research Natural Area ACEC. Additionally, the study area may overlap movement corridors that connect Mohave ground squirrel core areas and known populations. The Project would be developed on open space that provides suitable habitat for nesting birds protected under the Migratory Bird Treaty Act, and construction-related and operational activities have the potential to significantly affect nesting birds. Project operation could cause significant impacts on desert tortoise from encounters with maintenance equipment and increased human presence, and because raven nesting sites could be created on new transmission structures.

Other cumulative projects identified in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, including the Ivanpah–Control Project, could also affect these biological resources. Therefore, the significant impact of the Project on wildlife movement and nesting birds, combined with impacts of the cumulative projects, would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable. To reduce this cumulative impact to a less-than-significant level, the Project would implement Mitigation Measure 3.4-2b, *Raven Management to Protect Desert Tortoise*; Mitigation Measure 3.4-2c, *Nesting Bird Management Plan*; and Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities*. With implementation of these measures, the Project's contribution to cumulative impacts would not be cumulatively considerable, and the cumulative impact on wildlife movement would be reduced to **less than significant**.

Mitigation: Implement Mitigation Measure 3.4-2b, *Raven Management to Protect Desert Tortoise* (see Impact 3.4-2); Mitigation Measure 3.4-2c, *Nesting Bird Management Plan*; and Mitigation Measure 3.4-3, *APMs and Protection Measures Applicable during Operation and Maintenance Activities* (see Impact 3.4-3).

Significance after Mitigation: Less than Significant.

Criterion e)

The CPUC has exclusive jurisdiction over the siting, design, and construction of the Project. As a result, the Project is not subject to local land use or zoning regulations, nor does it require discretionary permits from local agencies. However, local biological resource policies and ordinances were reviewed to ensure that the Project would not conflict with local protections.

Impact C.3.4-7a: The Project construction impact related to a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, would be cumulatively considerable. (***Less than Significant with Mitigation***)

Relevant local policies and ordinances are discussed in Impact 3.4-7a, which identifies the potential loss of up to four Joshua trees as a significant impact of the Project. Though significant, this impact would not threaten the species' survival or reproduction, nor would it substantially reduce regional populations. As discussed above, cumulative projects would be subject to local development review processes to ensure consistency with biological resource protections. These projects would be required to implement mitigation measures through environmental review or existing commitments, such as tree preservation policies or ordinances. Although it is unknown whether other cumulative projects would affect Joshua trees, the significant impact of the Project on Joshua trees combined with any impacts of the cumulative projects would be cumulatively significant, and the Project's contribution to this significant cumulative impact would be cumulatively considerable. This cumulative impact would be reduced to less than significant with implementation of Mitigation Measure 3.4-1b, *Special-Status Herbaceous Plants Compensatory Mitigation and Restoration*.

> **Mitigation:** Implement Mitigation Measure 3.4-1b, *Special-Status Herbaceous Plants Compensatory Mitigation and Restoration*.
>
> **Significance after Mitigation:** Less than Significant.

Impact C.3.4-7b: The Project operational impact related to a conflict with any local policies or ordinances protecting biological resources would not be cumulatively considerable. (***Less than Significant***)

As discussed in Impact 3.4-7b, Project operation and maintenance would follow existing operation and maintenance programs implemented for the Project's substations and switchyard; existing inspection and maintenance programs would be expanded to include the Project's new subtransmission and telecommunications lines. Proposed operation and maintenance activities for these facilities are not expected to conflict with local policies or ordinances. Although it is unknown whether other cumulative projects would conflict with local policies or ordinances, the Project's contribution to any cumulative impact would not be cumulatively considerable and the cumulative impact would be less than significant.

> **Mitigation:** None required.

Criterion f)

As identified under Criterion f) in the Project-level analysis above, the Project is located within the planning areas of the California Desert Conservation Area Plan (CDCA), the West Mojave

Plan Desert Renewable Energy Conservation Plan area, and activities occurring on BLM-managed lands within these areas are subject to all applicable plan requirements. The Project would not conflict with the provisions of the DRECP. Additionally, no adopted HCPs or NCCPs apply to the Project site; therefore, no impact would occur. Because there would be no Project impact, the Project would not contribute to a cumulative impact. *(No Impact)*

Criterion g)

Impact C.3.4-8: The Project operational impact related to creating a collision or electrocution risk for birds or bats would not be cumulatively considerable. (***Less than Significant***)

As described in Chapter 2, the aboveground Project facilities proposed for construction and operation include two 115 kV subtransmission lines and associated new structures, totaling approximately 70 miles in combined length. Because the proposed Project design is consistent with the APLIC Suggested Practices for Avian Protection on Power Lines, direct Project impacts on bird and bat species—potential collision risks associated with the proposed overhead subtransmission lines and other aboveground infrastructure—would be less than significant.

It is anticipated that past, present, and reasonably foreseeable future projects identified in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*—particularly those involving aboveground and overhead infrastructure like the Ivanpah–Control Project (Cumulative Project No. 15)—would incorporate industry-standard design and safety specifications, including measures to minimize collision and electrocution risks to birds and bats. These projects have either implemented or are expected to implement APLIC guidelines.

For these reasons, the Project, when considered in combination with cumulative projects, would not be cumulatively considerable in terms of collision or electrocution risks to birds or bats. Therefore, the cumulative impact would be **less than significant**.

Mitigation: None required.

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3.5 Cultural Resources

This section evaluates the potential impacts of the Project on cultural resources. It includes information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The information and analysis presented are based in part on the confidential draft cultural resources studies completed by Rincon Consultants, Inc. (Rincon) and South Environmental on behalf of Southern California Edison (SCE) (Rincon 2025; Rincon and South Environmental 2026).

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions for the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. CPUC did not receive scoping comments pertaining to cultural resources.

Definitions

A *historical resource* is defined in CEQA Guidelines Section 15064.5(a) as one that is listed in, or determined to be eligible for listing in, the California Register of Historical Resources (California Register). In addition, a resource that is identified as significant in a local register of historical resources, or is deemed significant due to its identification in a historical resources survey meeting the requirements of California Public Resources Code Section 5024.1(g), is presumed to be a historical resource "unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant." (CEQA Guidelines Section 15064.5(a)(2)). Public Resources Code Section 21084.1 also permits a lead agency to determine that a resource constitutes a historical resource even if the resource does not meet the foregoing criteria.

For the purposes of this EIR, historical resources are divided into significant "architectural resources" and "archaeological resources." When applicable, the distinction between architectural resources and archaeological resources hinges on the condition of the resource: If a resource is considered a ruin (e.g., a building lacking structural elements or a structure lacking its historic configuration), it is classified as an archaeological resource. *Architectural resources* include historic buildings; structures such as bridges, canals, roads, utility lines, and railroads; objects such as monuments and boundary markers; and districts. *Archaeological resources* include historical and pre-contact remnants of past cultures, typically recorded as sites or districts. *Historical archaeological resources* are archaeological resources that date to the period after Euro-American settlement of an area and may include foundations, landscaping, refuse scatters, mining features, and railroad grades. *Pre-contact archaeological resources* are archaeological resources that date to the period before Euro-American settlement of an area and may include lithic scatters, ceramic scatters, quarries, habitation sites, temporary camps, ceremonial sites, and trails.

3.5.1 Environmental Setting

The Project area is located in incorporated California City and unincorporated parts of Kern and San Bernardino counties. The Project area also extends into Edwards Air Force Base (EAFB) and public lands owned by the U.S. Bureau of Land Management (BLM) and California Department

of Fish and Wildlife (CDFW). The Project area lies within the Antelope Valley, a wide alluvial plain in the western Mojave Desert, and ranges in elevation from approximately 2,300 to 3,050 feet above mean sea level. Historically, the valley supported yuccas, Joshua trees, and cholla with various other plant species located in the Mojave Desert, depending on elevation (NPS 2020). Currently, the Antelope Valley is populated by cholla, Joshua trees, creosote brush scrub, allscale scrub, and fourwing brush scrub. Fauna in the area consists of bighorn sheep, desert burro deer, mountain lions, a large assortment of bird species such as burrowing owls and roadrunners, and reptiles including desert tortoise and pit vipers (Rincon 2025).

3.5.1.1 Pre-contact Setting

The pre-contact period in the Mojave Desert is generally described in terms of cultural "complexes." A *complex* is a specific archaeological manifestation of a general mode of life, characterized archaeologically by technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture. Complexes typically are associated with the particular chronological periods summarized in **Table 3.5-1**. Following the table are detailed descriptions of the complexes.

TABLE 3.5-1
CULTURAL COMPLEXES

Time Period	Complex	Dates
Pleistocene	Paleo-Indian	10,000–8,000 B.C.
Early Holocene	Lake Mojave	8,000–6,000 B.C.
Middle Holocene	Deadman Lake	7,500–5,200 B.C.
	Pinto	6,000–3,000 B.C.
Late Holocene	Gypsum	2,000 B.C.–A.D. 200
	Rose Spring	A.D. 200–1,100
	Late Prehistoric	A.D. 1,100 to contact

NOTES: B.C. = Before Christ; A.D. = Anno Domini
SOURCES: Sutton et al. 2007; Warren 1984

Paleo-Indian (10,000 to 8,000 B.C.)

The Paleo-Indian period is sparsely represented in the Mojave Desert but is characterized primarily by large, fluted Clovis projectile points. This limited evidence suggests that early human occupants of the Mojave Desert probably lived in small, mobile groups in temporary camps adjacent to permanent water sources (Sutton et al. 2007).

Lake Mojave Complex (8,000 to 6,000 B.C.)

The name of this cultural complex was based on archaeological studies conducted along the margins of Pleistocene Lake Mojave. Lake Mojave sites have been found primarily around Fort Irwin, Lake Mojave, China Lake, Rosamond Lake, and Twentynine Palms near extinct water sources, with the margins of pluvial lakes being the preferred settlement areas. Subsistence and settlement patterns are likely to have been a direct response to climatic fluctuations occurring

during the Pleistocene-to-Holocene transition. Lake Mojave populations were organized into relatively small, mobile groups and practiced a forager-like subsistence strategy. High mobility served to exploit ever-changing resource bases, coupled with a reliance on more permanent resources (water sources). Sites appear to have been repeatedly occupied, with artifact assemblages from both large and small sites being functionally identical (Sutton et al. 2007).

In terms of material culture, the Lake Mojave Complex is typified by stone tools such as Lake Mojave and Silver Lake projectile points, bifaces, steep-edged unifaces, crescents, and some groundstone implements. A characteristic of Lake Mojave artifact assemblages is the frequent use of fine-grained volcanic lithic material in the production of flaked stone tools, while cryptocrystalline material was preferred for use in the production of other types of implements (Giambastiani and Bullard 2007). The use of heavy projectile points, bifaces, and scrapers would suggest exploitation of large game. However, faunal assemblages and protein residue analyses from sites at Fort Irwin suggest heavy reliance on small game, such as rodents, reptiles, and lagomorphs (hares/rabbits/pikas). Ground stone wear is generally light, which suggests minor use of hard seeds. Marine shell beads and nonlocal lithic materials indicate trade and/or long-distance resource procurement (Sutton et al. 2007).

Deadman Lake Complex (ca. 7,500 to ca. 5,200 B.C.)

The Deadman Lake Complex is geographically restricted to Twentynine Palms in the southeastern Mojave Desert and appears to overlap with the Paleo-Indian and Pinto complexes. Although it is still being fully defined, this complex is identified by artifact types including small to medium-sized contracting-stemmed or lozenge-shaped points, battered cobbles and core tools, bifaces, flaked tools, and milling equipment. Similar projectile points have been recovered from Ventana Cave in Arizona. Lithic materials include large quantities of coarse to fine-grained igneous rock and smaller amounts of both local and exotic obsidian. *Olivella* shell beads are present, with both *O. biplicata* from the Pacific coast and *O. dama* from the Sea of Cortez represented (Sutton et al. 2007).

Pinto Complex (6,000 to 3,000 B.C.)

Archaeological deposits dating from the Pinto Period suggest that Pinto settlement patterns consisted of seasonal occupation by small, semi-sedentary groups that were dependent upon a combination of big- and small-game hunting and collection strategies, which could have included the exploitation of streams or other water resources. Typically, sites of this period are found along lakeshores and streams or springs, some of which are now dry, and in upland areas. Larger sites tend to be near well-watered locations, with smaller sites in other areas. Compared to smaller sites, larger sites exhibit more substantial midden deposits and greater variation in artifact types. These larger sites were probably centralized locations from which foraging parties journeyed to seasonal resources (Sutton et al. 2007).

The extent of regional mobility at this time is uncertain. A lack of lithic material diversity might indicate that foraging activities were not as expansive as in the previous complex. However, *Olivella* shell beads are still present, which indicates at least some degree of contact with coastal groups (Sutton et al. 2007).

Material culture representative of this period includes roughly formed projectile points, "heavy-keeled" scrapers, choppers, and a greater prevalence of flat millingstones and manos (Warren 1984). Pinto Series projectile points appear to have been frequently reworked, suggesting that they were used primarily as spear, not dart, tips (Sutton et al. 2007).

Faunal assemblages are similar to those of the Lake Mojave Complex, with the exception of a slight increase in small fauna taxa (small animals) coupled with a decrease in artiodactyls (hoofed mammals). The rise of millingstones and manos indicates a more intensive use and processing of plant resources and site placement may have been based in part on access to plant resources. New dates indicate that intensive plant exploitation was occurring by ca. 7,000 B.C. (Sutton et al. 2007).

At the end of the Middle Holocene, around 3,000 B.C., environmental conditions became much drier and hotter. Few sites in the Mojave Desert date to the period between 3,000 B.C. and 2,000 B.C., suggesting that the area may have been largely abandoned during this period of unfavorable climate (Sutton et al. 2007).

Gypsum Complex (ca. 2,000 B.C. to A.D. 200)

The Late Holocene was characterized by a wetter and cooler climate than the Middle Holocene. Settlement patterns suggest small, temporary camps concentrated near streams. At the same time, there is more evidence of inter-tribal trade, particularly between the desert and the coast, and increasing social complexity. The artifact assemblage associated with this period includes an increase in the prevalence of millingstones and manos, and it is believed that it was during this period that the pestle and mortar were introduced. These technological developments may point to the increased consumption of seeds and mesquite. Other artifacts associated with the Gypsum Period include Elko corner-notched series, concave base Humboldt series, and contracting-stemmed Gypsum series projectile points. Ceremonial activities are indicated by the presence of quartz crystals, paint, and rock art. Toward the end of the Gypsum Period, there is evidence for the use of the bow and arrow. Interestingly, there is a scarcity of Gypsum Period sites in the southern and eastern extents of the Mojave Desert (Sutton et al. 2007).

Rose Spring Complex (ca. A.D. 200 to 1,200)

The general cultural pattern for this period is a continuation of that of the preceding Gypsum Period. The increase in cultural complexity continued into this period and the archaeological record attests to established trade routes between desert and coastal populations by way of shell beads and steatite, as well as an introduction of Anasazi influence as evidenced by the appearance of turquoise and pottery (Warren 1984).

Archaeological sites from this period are more numerous and contain more well-developed middens indicating an increase in population and a more permanent settlement pattern. Additionally, evidence of structures, such as pit houses, supports more permanent settlements. Sites tend to be located near springs, washes, and lakeshores (Sutton et al. 2007).

Material culture related to this period includes large quantities of obsidian artifacts, Rose Spring and Eastgate series projectile points, knives, drills, pipes, bone awls, millingstones, manos,

mortars and pestles, marine shell ornaments, slate pendants, and incised stones. The bow and arrow continued in use (Sutton et al. 2007).

Late Prehistoric Period (A.D. 1,100 to European Contact)

By the Late Prehistoric Period, an extensive network of established trade routes wound their way through the desert, routing trade goods to populations throughout the Mojave Desert region. It is also believed that these trade routes encouraged or were the motivating factors for increasingly complex socioeconomic and sociopolitical organization within Late Prehistoric peoples in Southern California. Housepit village sites are prevalent during this period, as are the presence of Desert and Cottonwood series projectile points, brownware and buffware ceramics, steatite shaft straighteners, painted millingstones, and, to a lesser degree, coastal shell beads (Sutton et al. 2007).

3.5.1.2 Ethnographic Setting

Ethnographic tribal territories in the Mojave Desert are loosely defined, given the transitory nature of indigenous resource exploitation strategies and varied interpretations by ethnographers. The Serrano, Kitanemuk, and Tataviam are the closest associated indigenous groups to the Project area. Their ancestral territories have been documented more definitively to the west and south of the Project area, but all of these groups likely visited the Antelope Valley (Rincon 2025).

Serrano

The Serrano people ancestral territory ranges from low or moderately low desert to the mountain regions of the Transverse and Peninsular ranges. Serrano territory is bordered to the west roughly by the Cajon Pass in the San Bernardino Mountains, to the east by Twentynine Palms, and to the south by the Yucaipa Valley. Their territory extends north of the San Bernardino Mountains into the desert near Victorville, along the Mojave River.

The Serrano are organized into clans, with the clan being the largest autonomous political entity. Ethnographically, they lived in small villages where extended families lived in circular, dome-shaped structures made of willow frames covered with tule thatching. Each clan has one or more principal villages in addition to numerous smaller villages associated with the principal village (Price et al. 2008).

Villages located at higher elevations are placed near canyons that received substantial precipitation or were adjacent to streams and springs. Villages situated at lower elevations are also located close to springs or near the termini of alluvial fans where the high-water table provided abundant mesquite and shallow wells could be dug.

Prior to the arrival of non-indigenous people to the Mojave, the Serrano subsistence strategy relied upon hunting and gathering, and occasionally fishing. Villages were divided into smaller, mobile gathering groups during certain seasons to gather seasonally available foods. The division of labor was split between women gathering and men hunting and fishing. Mountain sheep, deer, rabbits, acorns, grass seeds, piñon nuts, bulbs, yucca roots, cacti fruit, berries, and mesquite were some of the more common resources used (Bean and Smith 1978; Warren 1984).

Despite early European and Spanish contact in 1771, the Serrano remained relatively autonomous until the period between 1819 and 1834 when most of the western Serrano were forcibly relocated to missions (Bean and Smith 1978; Warren 1984).

Today, Serrano-affiliated Tribes that are associated with the Project area include the Morongo Band of Mission Indians, San Fernando Band of Mission Indians, San Manuel Band of Mission Indians, and the Serrano Nation of Mission Indians.

Kitanemuk

The Kitanemuk are the northern neighbors of the Tataviam and their ancestral territory extends from the Tehachapi Mountains into the western end of the Antelope Valley. Although most of the recorded villages of the Kitanemuk were located in the Tehachapis, their settlement pattern is poorly understood. Some scholars posit that the Antelope Valley's desert floor was used only on a seasonal basis, while others point to archaeological evidence of permanent occupation of the desert floor during the Late Prehistoric Period (Sutton 1980). Prior to the arrival of non-indigenous people to the Mojave, the Kitanemuk maintained friendly relations with their other neighbors such as the Chumash, but historic evidence indicates that their relationship with the Tataviam was generally hostile (Blackburn and Bean 1978).

As with other Takic-speaking groups such as the Serrano, Kitanemuk society has a patrilineal organization. Families group together into villages, which are headed by a team of "administrative elite" composed of a chief, messengers, and shamans. Pre-contact Kitanemuk subsistence was similar to that of the Tataviam (see below).

Historic data on the Kitanemuk are lacking, and the only historical mention of the group comes from explorer Father Francisco Garcés in 1776 (as cited in Blackburn and Bean 1978). The only major source of ethnographic data is J.P. Harrington's 1917 notes on interviews conducted with the few surviving Kitanemuk at Tejon Ranch (as cited in Blackburn and Bean 1978). Today, Kitanemuk-affiliated Tribes that are associated with the Project area include the Kitanemuk & Yowlumne Tejon Indians and the Tejon Indian Tribe.

Tataviam

Tataviam ancestral territory is concentrated primarily along the upper reaches of the Santa Clara River drainage between the San Fernando Valley to the south and Pastoria Creek in the Tehachapi Mountains to the north. Their territory also includes east Piru Creek and the southern slopes of the Sawmill and Liebre mountains and extends into the southern end of the Antelope Valley (King and Blackburn 1978). The northern boundary is likely along upper Piru Creek south of Hungry Valley and Cañada de los Alamos (Johnson and Earle 1990). Tataviam territory is bounded by the Gabrielino to the south, the Serrano to the east, the Kitanemuk to the northeast, the Emigdiano Chumash to the north, and the Ventureño Chumash to the west.

There are few historical sources regarding the Tataviam. The word "Tataviam" most likely came from a Kitanemuk word that may be roughly translated as "people of the south-facing slope," reflecting their settlement on south-facing mountain slopes (King and Blackburn 1978). The Chumash referred to them as "Alliklik" (Kroeber [1925] 1976). What the Tataviam called

themselves is not known. The Tataviam spoke a language that was part of the Takic branch of the Uto-Aztecan language family (King and Blackburn 1978).

Prior to the arrival of non-indigenous people to the Mojave, Tataviam villages varied in size, from larger centers with as many as 200 people to smaller villages with only a few families (King and Blackburn 1978). At the time of Spanish contact, the Tataviam population is estimated to have been less than 1,000. Primary vegetable food sources included acorns, juniper berries, seeds, and yucca buds. Small game such as antelope and deer supplemented these foods. Trade networks between inland groups such as the Tataviam, the coastal regions, and desert regions enabled the trade of exotic materials such as shell, asphaltum, and steatite.

The first European visit to Tataviam territory occurred in 1769, with the expedition of Gaspar de Portolá, and again in 1776, with the expedition of Father Francisco Garcés.

Today, the Tataviam-affiliated Tribe that is associated with the Project area is the San Fernando Band of Mission Indians.

3.5.1.3 Historic-Era Setting

Regional Exploration and Mining

The first Europeans known to have visited the Mojave Desert were Pedro Fages in 1772 and Juan Bautista de Anza and Father Francisco Garcés in 1774 (Greene 1983). In 1775, Father Garcés separated from de Anza and crossed the Mojave along the ancient Mojave Trail from Needles west to the San Gabriel Mission, traveling past Soda Lake and resting at modern-day Afton Canyon in 1776 (Earle 2005).

The Spanish missions that dotted the California coast never spread inland to the Mojave Desert, and the desert remained relatively unexplored and unsettled by Europeans for much of the next century. The Romero-Estudillo Expedition of 1823–24 was an attempt by the Spanish to establish a secure route between the California coast and Tucson; however, despite two attempts, the expedition never managed to make it as far as the Colorado River (Greene 1983).

The first recorded American visitors to the Mojave Desert were the party of Jedediah Smith, who crossed the desert along the Mojave Trail in 1826 (Greene 1983). Ewing Young and Kit Carson followed Smith's route in the 1820s and 1830s. Several American and Mexican military expeditions were conducted in the 1840s and 1850s. In 1829–1830, fur trader Antonio Armijo scouted a route between Santa Fe, New Mexico, and Los Angeles. This route became a trade route known as the Old Spanish Trail, following the same general route as the Mojave Trail (Greene 1983). After California became an U.S. state in 1850, government-funded exploration and mapping of the region began, with the first major survey completed in 1853.

In 1848, gold was discovered by James W. Marshall at Coloma, some 400 miles to the north on the American River. The Gold Rush began and immigrants flooded into California, many headed to or through the Mojave Desert. By the late 1850s, the Mojave and Old Spanish trails had become major freight and mail roads. In addition, due to conflicts along the Colorado River between the federal government, Mormon settlers, and Native peoples, the U.S. Army established

a series of forts along the Mojave Trail, including one at Soda Lake. The Mojave Trail became the major east-west travel route between Los Angeles and the Colorado River and was known during this period as the Old Government Road (Greene 1983).

The discovery of the Comstock Lode in Nevada in 1859 shifted attention from gold to silver, and miners began to focus on the desert regions (Vredenburgh 2005). The 1880s were fairly prosperous for mining in the Mojave Desert, and operations at that time were dominated by gold and silver mining. In the 20th century, mining operations shifted focus to borax, zinc, and silver. Mining productivity fell in the 1920s as a result of increased inflation but was revived during the Great Depression; however, gold mining virtually ceased during World War II. By 1956, the declining gold prices caused most remaining small gold operations to close (Shumway et al. 1980).

The Arrowhead Trail Highway (State Route 31), one of the earliest automobile roads through the Mojave Desert, was constructed between 1917 and 1924. The road connected Los Angeles with Salt Lake City, Utah. In 1933, much of the Arrowhead Trails Highway between Barstow, California, and the California-Nevada state line was incorporated into State Route 91 (later Interstate 15) (Lyman 1999).

Local Historic-Era Settings

The following historic-era city and county settings are adapted from the 2025 draft cultural resources technical report completed for the Project (Rincon 2025).

Kern County

Early American-period settlement in what is now Kern County centered on mining, although ranching and farming were also important economic pursuits. After the discovery of gold at Greenhorn Gulch in 1851 and Havilah in 1864, mining boomed along the Kern River, which drove the establishment of several mountain communities. This wave of settlement largely bypassed the San Joaquin Valley, which for some time remained underdeveloped because of the presence of extensive swamps. In 1857, the California Legislature offered a contract for the clearing of swampland in the southern San Joaquin Valley, eventually purchased by Colonel Thomas Baker. Baker and the local Native Americans he hired drained a large portion of the area, reclaiming much of the wetlands for ranching and settlement. The town he established, eventually named Bakersfield, eclipsed Havilah by 1873, replacing it as the county seat (Kyle 2002).

In the final quarter of the 19th century, the growth of Kern County was driven largely by two factors: the arrival of the railroad and the expansion of intensive, irrigated agriculture. The Central Pacific Railroad reached the Kern County line in 1870. Because Bakersfield voters had declined to subsidize the route, it bypassed the city, and in early 1874 the rail line was extended to nearby Sumner. The line was soon extended into the remote mining districts of the mountains and desert. Connecting the county to distant markets, the railroad prompted the establishment of irrigation services and, by extension, new opportunities for local farmers. Construction of the Kern Island Canal began in 1871 and work on the Calloway Canal began 4 years later. In 1875, the Kern Island Canal Company inaugurated water deliveries through a system of ditches, allowing for the expansion and diversification of crops in the county. The development of rail

communication and reliable irrigation allowed agriculture to supplant mining as the county's primary economic sector (Kyle 2002; *Bakersfield Californian* 2016).

Around the turn of the 20th century, the extractive industry reemerged as an important economic driver for Kern County. Historically, these activities concentrated in the western sections of the county. The McKittrick Oil Field became the site of California Standard Oil Well No. 1, completed in 1899. Settlements such as Maricopa, Taft, and Ford City boomed with the growing number of wells erected in the area. Perhaps more important, the Kern River Oil Field was discovered outside Bakersfield in 1899 (Kyle 2002). Oil was struck at additional new locations through the first two decades of the 20th century, and the petroleum industry remains integral to Kern County's economy today (Bakersfield Californian 2016). In 1925, the U.S. Borax and Chemical Company established a sodium borate mine at Boron near the southeast corner of the county (Kyle 2002).

American involvement in World War II brought a significant military presence to southeast Kern County. Since 1933, the U.S. Army had used the beds of Muroc Dry Lake as a bombing and artillery range. In early 1942, it was repurposed as Muroc Army Air Base and used as a training facility for bomber and fighter crews. After the war, the base was used to test early U.S. military jet engine technology and was associated with a number of important breakthroughs, including the first supersonic flight, piloted by Chuck Yeager in 1947. In 1949, the facility was renamed EAFB (Kyle 2002; Howell 2015).

As a result of its diverse economy, Kern County's population boomed in the 20th century. Between 1920 and 1970, it grew almost tenfold, reaching a mark of 329,000. Much of this growth was concentrated in Bakersfield, which remains the main population center and, as of 2023, was home to 413,381 of the county's 913,820 residents (U.S. Census Bureau 2024).

San Bernardino County

The first European explorers to enter the area now known as San Bernardino County were Pedro Fages, the Spanish military commander of California, in 1772 and Father Francisco Garcés, a Spanish missionary priest, in 1774. Franciscan missionary Francisco Dumatz, of the San Gabriel Mission, led his company into the San Bernardino Valley in 1810. In observance of the feast day of St. Bernardine of Siena, Dumatz named the valley San Bernardino. This name was given to the nearby mountain range, and later to the city and county. As early as 1819, the local Spaniards oversaw construction of water ditches (zanjas) to bring water for irrigation from Mill Creek Canyon to the Guachama Rancheria (Kyle 2002). During the 1840s, the Mexican settlers along the Santa Ana River dug and diverted various ditches to irrigate their vineyards and fields. Portions of these canals eventually became part of the Riverside and Jurupa water system (Brown and Boyd 1922).

In 1842 the Lugo family was granted Rancho San Bernardino, a holding of 37,700 acres encompassing the entire San Bernardino Valley. Captain Jefferson Hunt, of the Mormon Battalion, led a group of settlers into San Bernardino. In 1851, the Mormon Colony purchased the rancho from the Lugos and occupied the area until 1857, when John Smith recalled his flock to Salt Lake City because of the threat of invasion by federal troops. The resulting mass exodus

resulted in the loss of half the Euro-American population of the San Bernardino Valley and the hindrance of valley development.

Although the Mormons made no concerted efforts at irrigation, they used open ditches to irrigate areas of their land and common property. After the departure of the Mormons, new settlers took advantage of this development and expanded portions of the ditch system (Brown and Boyd 1922). As early as the 1840s, vineyards were planted in the Cucamonga area, and by 1870, San Bernardino County was producing 48,720 gallons of wine. Starting in the 1850s, oranges were being planted in the East Valley, and by 1882, tons of oranges and lemons grown in San Bernardino County were being shipped all over the U.S. by railroad.

In 1850, after the discovery of gold in Coloma, California was admitted into the United States. On April 26, 1853, San Bernardino County was created from parts of Los Angeles, San Diego, and Mariposa counties. In 1854, the City of San Bernardino was incorporated as the county seat. A portion of the county's territory was given to Riverside County in 1893.

In 1860 gold was discovered in Holcomb and Bear Valleys in the San Bernardino Mountains and placer mining began in Lytle Creek. Silver was mined at Ivanpah in 1870, and the silver mines of the Calico District were developed in the 1880s. Borax was first discovered in 1862 in the Searles Dry Lake area near Trona and transported out by mule team wagons.

Major cities established in San Bernardino County include San Bernardino, Fontana, Rancho Cucamonga, Ontario, and Victorville. At more than 20,000 square miles in size, San Bernardino County is the largest county in the continental U.S. by area (Kyle 2002).

California City

California City is in Kern County in the northern portion of the Antelope Valley, approximately 18 miles northwest of EAFB. Despite having a population of approximately 15,000, California City spans more than 204 square miles, the third-largest land area of any city in California. This vastness is the result of the erstwhile aspirations of Nat Mendelsohn, a Columbia University sociology instructor turned real estate developer, who purchased 82,000 acres of vacant Mojave Desert land in 1958 (Anton 2010). Buoyed by a strong postwar economy, Mendelsohn was convinced that he could capitalize on a growing California population by providing them with the state's next metropolis, a city that he speculated could rival Los Angeles.

By the early 1960s, Mendelsohn had organized his promised city into a sprawling grid system, complete with 185 square miles of mostly unpaved roads, a 26-acre artificial lake, lots for housing, and electrical and water lines. However, only 175 homes had been built, and for most investors the allure of Mendelsohn's imagined oasis quickly waned. Eventually realizing that the area's isolation was too much of an impediment to population growth, Mendelsohn sold his shares in 1969 and left town for other investment opportunities in Texas (Anton 2010).

Though not at the scale of what its founder envisioned, the population of California City has risen steadily in the last 30 years, growing from roughly 3,200 to approximately 15,000. Most current residents are employed at EAFB or at the California City Correctional Facility. Those employed

by the California City Public Works Department are kept busy addressing the expansive crumbling infrastructure that remains as the legacy of Nat Mendelsohn (Anton 2010).

Boron

Boron is a census-designated place in Kern County and is most famous for its extensive deposits of colemanite, a borax ore used in the production of boron and boric acid. In 1925, one of the largest deposits of borax was discovered, leading to the establishment of the world's largest boron mine (Shumway et al. 1980). This mine is still in existence today and employs nearly 800 people in Boron, supplying nearly half the world's boron.

Kramer

Kramer is a census-designated place in San Bernardino County that was named by the Southern Pacific Railroad in 1882, after Moritz Kramer, a German native who had settled in the area in 1879 (Orr 2021). In 1884, the Kramer Mining District was organized, centered around the Kramer Hills area. A U.S. post office was established in 1896, then was discontinued and reestablished several times until it was permanently discontinued in 1918. A small paper called the *Kramer News* was printed and distributed in the area between 1914 and 1921 (Orr 2021).

In 1926, a mini–Gold Rush came to the area when the Herkelrath brothers found pockets of gold in the nearby hills. However, the gold turned out to be low grade, and with water scarce in the desert by 1931, the gold rush boom died out in the area. The Kramer Cemetery was formed in 1920 just outside Kramer with two recorded names: Jose Lopez, October 24, 1920, and Gallegos, August 6, 1922 (Orr 2021). The Kramer Cemetery was used as a final resting place for miners, railroad workers, and their families. In 1992, the Boron Museum, together with Boron Boy Scout Troop #45, restored the Kramer Cemetery by replacing the fence surrounding the area and reestablishing a few burial markers. Today, Kramer is a popular rest stop for truckers and travelers alike.

Edwards Air Force Base

EAFB is situated in the northwestern portion of the Mojave Desert. The area was inhabited primarily by miners until 1876, when the Southern Pacific Railroad built a rail line from Barstow to Mojave, California. In 1910, the Corum family settled in the area, farming alfalfa and raising turkeys. In addition, the Corums opened a post office and general store, and obtained water well drilling and land clearing contracts, later requesting to name the town Muroc. Over the next 20 years, isolated homesteads started to line the area. In 1933, Lieutenant Colonel H.H. Arnold transformed the desert region into a gunnery range. Building on Arnold's idea and the events of World War II, the Muroc Army Air Base was established by 1942 (EAFB 2009).

The Muroc Army Air Base was used as a training center and later housed pilot testing for the first fighter jet planes in America (EAFB 2009). The Muroc Army Air Base then became a proving ground for U.S. Navy and Air Force jets produced during the Cold War arms race with the Soviet Union. Several famous pilots began filtering through the Muroc Army Air Base, including Chuck Yeager who would break the sound barrier in 1947 (EAFB 2009). The base was renamed EAFB in 1949, following the death of Captain Glen Edwards during a test flight at the base. As the realm of military research grew over the course of the 1950s, the Air Force moved the test pilot

school to EAFB and designated the base as the U.S. Air Force Flight Test Center, expanding into a 300,000-acre base (EAFB 2009).

By the 1960s, the space race was in full swing. The U.S. Air Force Flight Test Center temporarily transitioned its primary goal from pilot testing to aerospace research and astronaut training. During this time, the first stealth aircraft was developed. By the 1970s, the test center transitioned its efforts back to pilot training but with integrated aerospace advancements, resulting in the development of new aircrafts such as the B-2 Spirit Bomber and the F-117. In 1981, the space shuttle *Columbia* landed at EAFB after orbiting the earth for 2 days. By the 1990s, aircraft research, development, testing, and evaluation continued to grow, and new aircraft series were developed (EAFB 2009). This progress continued into the new millennium and is ongoing today.

3.5.2 Regulatory Setting

3.5.2.1 Federal

National Historic Preservation Act (NHPA) of 1966

Under federal law, historical and archaeological resources are considered through the National Historic Preservation Act (NHPA) of 1966, as amended (United States Code Title 54, Section 306108), and its implementing regulations. Under Section 106 of the NHPA, before an "undertaking" (e.g., federal funding or issuance of a federal permit) is implemented, federal agencies must consider the effects of the undertaking on historic properties (i.e., properties listed in or eligible for listing on the National Register of Historic Places [National Register]) and must afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register. Under the NHPA, a property is considered significant if it meets the National Register listing Criteria A through D, at Federal Regulations (CFR) Title 36, Section 60.4, as follows:

> *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 that:*
>
> *a) Are associated with events that have made a significant contribution to the broad patterns of our history, or*
>
> *b) Are associated with the lives of persons significant in our past, or*
>
> *c) 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) Have yielded, or may be likely to yield, information important in prehistory or history.*

For a resource to be eligible for listing in the National Register, it must also retain enough integrity to be recognizable as a historic property and to convey its significance. Resources that are less than 50 years old are generally not considered eligible for listing in the National Register.

Federal review of the effects of undertakings on significant cultural resources is carried out under Section 106 of the NHPA and is often referred to as "Section 106 review." This process is the responsibility of the federal lead agency and occurs when an undertaking involves federal funding or a federal approval action. Section 106 review typically involves the following four-step procedure, which is described in detail in the implementing regulations of the NHPA (36 CFR 800.4):

- Define the Area of Potential Effects in which an undertaking could directly or indirectly affect historic properties.
- Identify historic properties in consultation with the State Historic Preservation Office and any Indian tribe or Native Hawaiian organization that might attach religious and cultural significance to properties within the area of potential effects, using the National Register criteria (36 CFR part 63).
- Assess the significance of effects of the undertaking on historic properties, using the criteria in 36 CFR 800.5.
- Consult with the State Historic Preservation Officer, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the Advisory Council on Historic Preservation and proceed with the project according to the conditions of the agreement, pursuant to 36 CFR 800.6.

3.5.2.2 State

The State of California implements the NHPA through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation, as an office of the California Department of Parks and Recreation, implements the policies of the preservation act on a statewide level. The Office of Historic Preservation also maintains the California Historical Resources Inventory. The State Historic Preservation Officer is an appointed official who implements historic preservation programs within the state's jurisdictions.

California Register of Historical Resources

The California Register of Historical Resources is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (Public Resources Code Section 5024.1[a]). Certain resources are determined by the statute to be automatically included in the California Register, including those formally determined eligible for or listed in the National Register (Public Resources Code 5024.1[d][1]). These resources are termed "historical resources."

To be eligible for listing in the California Register, a cultural resource must meet one or more 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.

The resource must also retain enough integrity of location, design, setting, materials, workmanship, feeling, and association to be recognizable as a historical resource and to convey its significance. Resources that are less than 45 years old are generally not considered eligible for listing in the California Register.

CEQA

CEQA (codified at California Public Resources Code Section 21000 *et seq*.) is the principal statute governing environmental review of projects occurring in the state. CEQA requires lead agencies to determine if a project would have a significant effect on historical resources, unique archaeological resources, or tribal cultural resources.

The State implements provisions in CEQA through its statewide comprehensive cultural resources surveys and preservation programs. Typically, a resource must be more than 50 years old to be considered as a potential historical resource. The OHP advises recordation of any resource 45 years or older, since there is commonly a five-year lag between resource identification and the date that planning decisions are made.

Historical Resources

The *CEQA Guidelines* (codified at California Code of Regulations Section 15000 *et seq.*) recognize that a *historical resource* includes the following: (1) a resource in the California Register; (2) a resource included in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of Public Resources Code Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Public Resources Code Section 21084.1 and Code of Regulations Section 15064.5 apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of Public Resources Code Section 21083, pertaining to unique archaeological resources.

Unique Archaeological Resources

As defined in Public Resources Code Section 21083.2, a *unique archaeological resource* is 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:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or

- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

The CEQA Guidelines note that if an archaeological resource is not a unique archaeological resource, historical resource, or tribal cultural resource, the effects of the project on those cultural resources shall not be considered a significant effect on the environment (Code of Regulations Section 15064.5[c][4]).

Health and Safety Code, Sections 7052 and 7050.5

Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Construction or excavation must be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American (Health and Safety Code, Section 7050.5). If the remains are determined to be Native American, the coroner must contact the Native American Heritage Commission.

California Public Resources Code Section 5097.98

Public Resources Code Section 5097.98 provides procedures in the event human remains of Native American origin are discovered during project implementation on non-federal land. Public Resources Code Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. Public Resources Code Section 5097.98 further requires the Native American Heritage Commission (NAHC), upon notification by a County Coroner, designate and notify a Most Likely Descendant regarding the discovery of Native American human remains. The Most Likely Descendant has 48 hours from the time of being granted access to the site by the landowner to inspect the discovery and provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

Public Resources Code Section 5097.99, as amended, states that no person shall obtain or possess any Native American artifacts or human remains that are taken from a Native American grave or cairn. Any person who knowingly or willfully obtains or possesses any Native American artifacts or human remains is guilty of a felony, which is punishable by imprisonment. Any person who removes, without authority of law, any such items with an intent to sell or dissect or with malice or wantonness is also guilty of a felony, which is punishable by imprisonment.

Other Relevant State Regulations

Sections of the Public Records Act (Government Code Sections 6254[r] and 6254.10), Penal Code (Section 622.5), and Public Resources Code (Sections 622.5 and 5097.98) provide guidance regarding the protection of archaeological resources and human remains. These code provisions provide protection from unauthorized excavation, looting, or vandalism; guidance to follow after the discovery of human remains; and penalties for injuring or destroying objects of historic or archaeological interest and for unauthorized disturbance or removal of archaeological or historical features.

3.5.2.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Project components; therefore, the Project is not subject to local discretionary regulations. Pursuant to CPUC General Order 131-D, Section XI.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Therefore, the local regulations below are provided only for informational purposes.

Kern County

The following policy in the Kern County General Plan (Kern County 2004) relates to cultural resources.

> ***Policy 25:*** The County will promote the preservation of cultural and historic resources, which provide ties with the past and constitute a heritage value to residents and visitors.

San Bernardino County

Countywide Plan—Cultural Resources Element

The following policies in the San Bernardino Countywide Plan's Cultural Resources Element relate to archaeological resources and architectural resources (San Bernardino County 2020).

> ***Policy CR-2.1: National and state historic resources.*** We encourage the preservation of archaeological sites and structures of state and national significance in accordance with the Secretary of Interior's standards.
>
> ***Policy CR-2.2: Local historic resources.*** We encourage property owners to maintain the historic integrity of resources on their property by (listed in order of preference): preservation, adaptive reuse, or memorialization.
>
> ***Policy CR-2.3: Paleontological and archaeological resources.*** We strive to protect paleontological and archaeological resources from loss or destruction by requiring that new development include appropriate mitigation to preserve the quality and integrity of these resources. We require new development to avoid paleontological and archaeological resources whenever possible. If avoidance is not possible, we require the salvage and preservation of paleontological and archaeological resources.
>
> ***Policy CR-2.4: Partnerships.*** We encourage partnerships to champion and financially support the preservation and restoration of historic sites, structures, and districts.
>
> ***Policy CR-2.5: Public awareness and education.*** We increase public awareness and conduct education efforts about the unique historic, natural, tribal, and cultural resources in San Bernardino County through the County Museum and in collaboration with other entities.

City of California City

The following policies and implementation measure in the California City General Plan's Open Space and Conservation Element apply to archaeological resources and architectural resources (City of California City 2009).

Policies

- Preserve historical and cultural resources which may exist and are of significant value to the community now and in the future.
- Encourage public and private efforts toward preserving structures or sites which are of historic value to the community.

***Implementation Measure C-14*:** The City shall require the preservation of historical and cultural resources by implementation of the following measures:

- Encourage local groups and schools to enhance and promote historical resources and community activities for all residents within the General Planning Area.
- Prior to issuance of a grading or building permit, new development proposal shall be required to complete records and literature search and/or a Phase 1 Assessment to identify the presence of any specific cultural resources and/or Native American sacred lands at the project site. Recommendations shall be incorporated into project as conditions of approval. SCE has indicated that it would need a grading permit for the Project (SCE 2025).

3.5.3 Applicant Proposed Measures and Best Management Practices

3.5.3.1 Applicant Proposed Measures

Southern California Edison (SCE) has identified the following Applicant Proposed Measures (APMs) to minimize impacts of the Project on cultural resources. The impact analysis assumes that the APMs would be implemented (i.e., part of the Project) to reduce impacts on cultural resources as discussed below.

- **APM CUL-1: Develop a Cultural Resource Management Plan (CRMP).** SCE shall prepare and submit for approval a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during Proposed Project construction. Management of cultural resources shall follow all applicable federal and state standards and guidelines for the management of historic properties/historical resources. The CRMP shall be submitted to CPUC and BLM for review and approval at least 90 days prior to the start of construction. The CRMP shall be prepared by a qualified archaeologist who meets the Secretary of Interior's standards for archaeology and include, but not be limited to, the following sections:
  - *Cultural Resource Management Plan*: The CRMP shall define and map all known NRHP [National Register]– and CRHR [California Register]–eligible properties in or within 100 feet (30.5 meters) of the Proposed Project APE [Area of Potential Effects]/API [Area of Potential Impacts]. A cultural resources protection plan shall be included that details how NRHP- and CRHR-eligible properties will be avoided and protected during construction. Measures shall include, at a minimum, designation and marking of Environmentally Sensitive Areas (ESAs), archaeological monitoring, personnel training, and reporting. The plan shall also detail which avoidance measures will be used, where and when they will be implemented, and how avoidance measures and enforcement of ESAs will be coordinated with construction personnel.
  - *Cultural Resource Monitoring and Field Reporting*: The CRMP shall detail procedures for archaeological monitoring and Tribal participation, define the reporting matrix, and

establish criteria for when the monitoring effort should increase or decrease if monitoring results indicate that a change is warranted. The CRMP shall also include guidelines for monitoring in areas of high sensitivity for the discovery of buried NRHP- and/or CRHR-eligible cultural resources, burials, cremations, tribal cultural resources, or sacred sites.

– *Unanticipated Discovery Protocol*: The CRMP shall detail procedures for temporarily halting construction, defining work stoppage zones, notifying stakeholders (e.g., agencies, Native Americans, utilities), and assessing NRHP and/or CRHR eligibility in the event unanticipated discoveries are encountered during construction. It shall include methods, timelines for assessing NRHP and/or CRHR eligibility, formulating mitigation plans, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries shall be reviewed by tribal stakeholders and approved by CPUC prior to implementation.

– *Data Analysis and Reporting*: The CRMP shall detail methods for data analysis in a regional context, reporting of results within one year of completion of field studies, curation of artifacts and data (maps, field notes, archival materials, recordings, reports, photographs, and analysts' data) at a facility that is approved by CPUC and dissemination of reports to appropriate repositories.

- **APM CUL-2: Avoid Environmentally Sensitive Areas (ESA).** SCE shall perform cultural resource surveys for any portion of the Proposed Project APE not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas). Cultural resources discovered during surveys will be subject to APM CUL-1 (Develop CRMP). Where operationally feasible, all NRHP- and CRHR-eligible resources shall be protected from direct project impacts by project redesign (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas). In addition, all historic properties/historical resources shall be avoided by all project construction, operation and maintenance, and restoration activities, where feasible. Avoidance measures shall include, but not be limited to, fencing off ESAs for the duration of the Proposed Project or as outlined in the CRMP.

- **APM CUL-3: Train Construction Personnel.** Prior to initiating construction, all construction personnel shall be trained by a qualified archaeologist regarding the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) and paleontological resources (i.e., fossils), and protection of these resources during construction. Training shall also inform all construction personnel of the procedures to be followed upon the discovery of cultural materials. All personnel shall be instructed that unauthorized removal or collection of artifacts is a violation of federal and state laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend a Worker's Environmental Awareness Training Program (WEAP). The WEAP will include the Proposed Project's potential for the post-discovery review of archaeological deposits, how to operate adjacent to and avoid all ESAs, and procedures to treat post-discovery reviews.

- **APM CUL-4: Conduct Construction Monitoring.** Archaeological monitoring shall occur as outlined in the CRMP. Archaeological monitoring shall be conducted by a qualified archaeologist familiar with the types of historic and prehistoric resources that could occur within the Proposed Project areas. The qualifications of the principal archaeologist and monitors shall be approved by the CPUC and BLM. Monitoring reports shall be submitted to the CPUC on a monthly basis. A Tribal Participant may be required at culturally sensitive locations in consultation with the CPUC and/or as outlined in the CRMP.

- **APM CUL-5: Properly Treat Human Remains.** SCE shall follow all federal and state laws, statutes, and regulations that govern the treatment of human remains. All work in the vicinity of a find will cease within a 200-foot radius of the remains, the area will be protected to ensure that no additional disturbance occurs. Should inadvertent discovery of human remains be made on federal lands, the federal agency and County Coroner (California Health and Safety Code 7050.5(b)) shall be notified immediately. If the remains are determined to be Native American or if Native American cultural items pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA) are uncovered, the remains shall be treated in accordance with the provisions of NAGPRA (43 CFR 10) and the Archaeological Resources Protection Act (43 CFR 7). If the remains are not on federal land, the County Coroner and CPUC shall be notified immediately and the remains shall be treated in accordance with Health and Safety Code section 7050.5, CEQA Guidelines section 15064.5(e), and Public Resources Code section 5097.98. SCE shall assist and support the BLM and DoD [U.S. Department of Defense] as appropriate in all required NAGPRA and Section 106 actions, government-to-government consultations with Native Americans, agencies, and consulting parties as requested by the BLM, DoD, or CDFW. SCE shall comply with and implement all required actions and studies that result from such consultations.

3.5.3.2 Best Management Practices

SCE has also proposed implementation of best management practices (BMPs) that are based on the California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook*. None of the BMPs are proposed to minimize impacts on cultural resources.

3.5.4 Cultural Resources Identified within the Project Area

For the purposes of this section, *cultural resources* are defined as provided above, under Section 3.5, *Cultural Resources*, thereby include physical evidence of a place of past human activity, including sites, objects, landscapes, or structures of significance to a group of people traditionally associated with it. *Archaeological resources* can be both pre-contact and historic-era and consist of cultural resources, which are on the surface or in the subsurface. *Historic-era architectural resources* are buildings or structures of historic age (i.e., 45 years old or older) that have been determined eligible for or have been listed in the National Register and/or California Register.

Rincon, on behalf of SCE, prepared a Draft Class III Archaeological Resources Study (Rincon 2025) and, along with South Environmental, prepared a Draft Historic-Era Built Environment Survey Report (Rincon and South Environmental 2026).

3.5.4.1 Methods

Records Search

Rincon conducted a records search of SCE's ArcGIS Online subscription of the Southern San Joaquin Valley Information Center dataset on April 29, 2021, and completed a records search at the South Central Coastal Information Center on July 27, 2021. These searches included the Project area and a 0.5-mile-radius buffer. Rincon also reviewed the National Register, the California Register, and three lists maintained by the California State Historic Preservation Office

that are used to track significant cultural resources: the California Historical Landmarks list, the Built Environment Resources Directory, and the Archaeological Determination of Eligibility list.

Archival Research

Rincon reviewed primary and secondary sources including historical maps, aerial photographs, and written historical accounts of the area. Historical aerial photographs provided via Nationwide Environmental Title Research Online and historical U.S. Geological Survey topographic maps were reviewed.

Field Survey

Rincon completed archaeological and historic-era architectural resources surveys of the Project area between October 2021 and January 2025.

Archaeological Survey Methods

The archaeological survey was completed using 10- to 15-meter transects and included most of the Project area, although three portions, totaling 7 acres of the 2,162-acre Project area, could not be surveyed due to fences that blocked access. In these areas, reconnaissance surveys were completed (Rincon 2025).

Within the Project area, which intersects BLM Barstow Field Office jurisdiction, EAFB lands, state lands, and private lands, Rincon defined archaeological resources as follows:

- *Pre-contact archaeological resources:* A collection of any quantity of features associated with an artifact or a collection of four or more artifacts that are spatially discrete from any other artifacts by a minimum distance of 15 meters. A pre-contact archaeological resource was also defined as a resource with human remains present.
- *Pre-contact isolated find:* One to three artifacts that are spatially discrete from any other artifacts by a minimum distance of 15 meters, or a single artifact broken into two or more pieces (e.g., broken pre-contact ceramic vessel), as long as no other artifacts or features are associated within 15 meters of the artifact are present.
- *Isolated feature:* A single undatable feature unassociated with other features or artifact scatters by a minimum distance of 15 meters.

Historic-era archaeological resources were defined in several ways. Multiple artifact classes were defined as at least two classes of historic-era artifacts (e.g., cans, glass, scrap metal, structural remains, ceramics) within an area of 10 square meters.

- *Significant historic-era archaeological resources* were defined as one or more historic-era features (e.g., a foundation, road, mine, privy). Significant historic-era archaeological resources did not include simple mining features such as shallow adits, broken piles of rock, cairns, prospect pits, and prospect trenches that have no artifacts or context associated with them. Such features were considered isolated finds that were not California Register- or National Register–eligible resources.
- *Historic-era archaeological resources of dense assemblages* within the Project area were defined as three objects of any artifact class (e.g., cans, glass fragments, ceramic fragments,

milled wood, mining equipment), including assemblages consisting entirely of one artifact class within an area of 10 square meters.

Archaeological resources were defined as multicomponent if they contained sufficient pre-contact and historic-era materials to be classified as a site of both types using the above-described criteria for their respective regions. For example, if a site contained historic-era features and a concentration of pre-contact artifacts that exceeded the density thresholds listed above, it was classified as a multicomponent site.

Archaeological resource boundaries were defined when more than 30 meters of open space separated cultural material. All previously recorded sites within the Project area were revisited and updated as warranted.

Historic-Era Architectural Resource Survey Methods

The historic-era architectural resource survey focused on all architectural resources identified as requiring a new or updated significance evaluation. Therefore, the historic-era architectural resource survey consisted entirely of documenting roadway segments (Rincon and South Environmental 2026). The survey methodology included driving the full length of the previously recorded roadway segments and stopping at reasonable intervals to photograph and document existing conditions.

Archaeological Sensitivity

The majority of the Project area is covered by Holocene alluvial sediments (Dibblee and Minch 2008a, 2008b, 2008c, 2008d, 2008e) with several additional sediment types present in portions of the Project area (Rincon 2025). Active playa sediments occur in the southwestern part of the Project area and Holocene loose sand, clay and silt, and sand-covered clay and silt occur in the southern portion (Amoroso and Miller 2012). Because the majority of the soils in the Project area are alluvial and given the episodic nature of alluvial sedimentation and deposition, the sudden burial of artifacts is possible. The presence of alluvial soils indicates an elevated probability of buried archaeological deposits (Waters 1992; Borejaza et al. 2014). Playa sediments that are still in an active state of deposition represent an elevated probability of buried archaeological deposits.

Given the presence and density of significant surficial pre-contact archaeological resources, the Project area is considered highly sensitive for such resources. Similarly, given the presence and density of surficial historic-era archaeological resources, the Project area is considered moderately sensitive for such resources; however, it is unlikely that these resources would be eligible for the California Register, for reasons discussed below. Lastly, geoarchaeological sensitivity within the Project area indicates a high likelihood of the presence of buried archaeological deposits.

Summary of Results

Based on the archaeological and architectural historic-era identification and evaluation efforts conducted for the Project, 11 historical resources are present within or intersect the Project area. As summarized below, there are five historical-era architectural and seven pre-contact archaeological resources in the Project area that are eligible. No unique archaeological resources were identified and none of the eligible resources are also unique archaeological resources.

Architectural Historic-Era Resources

A total of 45 architectural historic-era resources were identified within the Project area. Of these, five resources have been determined to be historical resources eligible for the California Register: P-36-010316, the Bishop Tower Line; P-36-006693, the Atchison, Topeka and Santa Fe Burlington Northern Santa Fe (ATSF BNSF) Railroad; P-36-007545, U.S. Highway 395; P-15-007069, and P-36-008315, CHL No. 938, Rand Mining District, and Randsburg Mojave Road, an contributing element of the Rand Mining District (Rincon and South Environmental 2026). These five resources are summarized in **Table 3.5-2**. The remaining 40 architectural historic-era resources have been determined not eligible for listing and are not considered historical resources for the purposes of CEQA.

TABLE 3.5-2
HISTORICAL RESOURCES IDENTIFIED IN THE PROJECT AREA

Resource	Type/Age	Description	Project Component	National Register and California Register Eligibility
Randsburg Mojave Road	Architectural/ historic-era	Mining Road	Kramer–Cal City 115 kV Subtransmission Line, Cal City–Edwards-Holgate 115 kV Subtransmission Line	Determined eligible for the National Register as a contributor to the Rand Mining District under Criterion A/1; Recommended not individually eligible for the National Register or California Register.
P-36-010316, Bishop Tower Line	Architectural/ historic-era	Transmission line	Kramer–Cal City 115 kV Subtransmission Line	Determined eligible for the National Register and listed in the California Register under Criteria A/1 and C/3.
P-36-006693, ATSF BNSF Railroad	Architectural/ historic-era	Railroad	Kramer–Cal City 115 kV Subtransmission Line, Cal City–Edwards-Holgate 115 kV Subtransmission Line, Kramer Substation improvements	Determined eligible for the National Register and listed in the California Register under Criterion A/1.
P-36-007545, U.S. Highway 395	Architectural/ historic-era	Highway	Kramer–Cal City 115 kV Subtransmission Line, Kramer Substation improvements	Determined eligible for the National Register and listed in the California Register under Criterion A/1.
P-15-007069, P-36-008315, CHL No. 938, Rand Mining District	Architectural/ historic-era	Mining District	Kramer–Cal City 115 kV Subtransmission Line, Cal City–Edwards-Holgate 115 kV Subtransmission Line	California Historic Landmark and listed in the California Register.
CalCity-S-063	Archaeological/ pre-contact and historic-era	Pre-contact lithic and milling site; historic-era refuse scatter	Kramer–Cal City 115 kV Subtransmission Line	Not previously evaluated; evaluated historic-era component determined as not eligible; Pre-contact component determined eligible for the California Register.
CalCity-S-129	Archaeological/ pre-contact and historic-era	Pre-contact lithic site; historic-era refuse scatter	Cal City–Edwards-Holgate 115 kV Subtransmission Line	Not previously evaluated; evaluated historic-era component determined as not eligible; Pre-contact component determined eligible for the California Register.

Resource	Type/Age	Description	Project Component	National Register and California Register Eligibility
CalCity-S-142	Archaeological/ pre-contact and historic-era	Pre-contact lithic site; historic-era refuse scatter	Cal City–Edwards-Holgate 115 kV Subtransmission Line	Not previously evaluated; evaluated historic-era component determined as not eligible; Pre-contact component determined eligible for the California Register.
CalCity-S-147	Archaeological/ pre-contact and historic-era	Pre-contact lithic site; historic-era refuse scatter	Cal City–Edwards-Holgate 115 kV Subtransmission Line	Not previously evaluated; evaluated historic-era component determined as not eligible; Pre-contact component determined eligible for the California Register.
CalCity-S-154	Archaeological/ pre-contact and historic-era	Pre-contact lithic site; historic-era refuse scatter	Cal City–Edwards-Holgate 115 kV Subtransmission Line	Not previously evaluated; evaluated historic-era component determined as not eligible; Pre-contact component determined eligible for the California Register.
CalCity-S-161	Archaeological/ pre-contact and historic-era	Pre-contact lithic site; historic-era refuse scatter	Cal City–Edwards-Holgate 115 kV Subtransmission Line	Not previously evaluated; evaluated historic-era component determined as not eligible; Pre-contact component determined eligible for the California Register.
CalCity-S-507	Archaeological/ pre-contact and historic-era	Pre-contact lithic site; historic-era refuse scatter	Cal City–Edwards-Holgate 115 kV Subtransmission Line	Not previously evaluated; evaluated historic-era component determined as not eligible; Pre-contact component determined eligible for the California Register.

NOTES: ATSF BNSF = Atchison, Topeka and Santa Fe Burlington Northern Santa Fe; California Register = California Register of Historical Resources; Criterion A/1 = Association with events that contribute to broad patterns of history; Criterion C/3 = Distinctive characteristics that possess high artistic value or are representative of a significant resource type, period, or construction method; kV = kilovolt; National Register = National Register of Historic Places.

SOURCE: Data compiled by Environmental Science Associates in 2026

Archaeological Resources

As a result of the archaeological records search and pedestrian survey, 144 archaeological resources and 75 isolates have been identified within the Project area (Rincon 2025). Of these resources and isolates, CPUC has determined seven resources, all pre-contact, are eligible for listing in the California Register, and thus is considering them as historical resources pursuant to CEQA Guidelines section 15064.5(c)(1): CalCity-S-063, CalCity-S-129, CalCity-S-142, CalCity-S-147, CalCity-S-154, CalCity-S-161, and CalCity-S-507. These seven resources are also considered tribal cultural resources, and are analyzed as such in Section 3.18-1, *Tribal Cultural Resources*, and summarized in Table 3.5-2. CPUC recommends that 130 archaeological resources and 75 isolates not be eligible for listing in the California Register. Three resources identified in a prior study no longer exist within the Project area and were not evaluated (Wesson et al. 2021). No unique archaeological resources were identified. A prior study determined four resources to be not eligible for the California and National Registers (Wesson et al. 2021).

Table 3.5-2 reflects the historic resources identified in the Project area, including both architectural historic-era resources and archaeological resources. The column “Project Component” refers to the component of the proposed Project that may be sited in the vicinity of the identified resource. The column “National Register and California Register Eligibility” describes the reasoning supporting SCE’s eligibility determination. In depth resource descriptions and evaluations are included in the

confidential draft cultural resources studies completed by Rincon Consultants, Inc. (Rincon) and South Environmental on behalf of SCE. These reports may be requested for review by individuals who meet the *U.S. Secretary of the Interior's Historic Preservation Professional Qualification Standards* (62 Federal Register 33708–33723) or the California State Personnel Board criteria for Associate State Archaeologist or State Historian II.

3.5.4.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to cultural resources if it would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 [of the CEQA Guidelines];

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 [of the CEQA Guidelines]; or

c) Disturb any human remains, including those interred outside of dedicated cemeteries.

3.5.5 Direct and Indirect Effects

3.5.5.1 Approach to Analysis

Impacts on architectural resources are typically assessed by identifying any activities that could affect resources identified as historical resources for the purposes of CEQA. Buildings and structures identified as historical resources include those that are significant because of their association with important events, people, or architectural styles or master architects, or for their informational value (California Register Criteria 1, 2, 3, and 4, as discussed in Section 3.5.2.2, above) and that retain sufficient historical integrity to convey their significance.

Archaeological resources may also be assessed under CEQA as *unique archaeological resources*, which are defined as archaeological artifacts, objects, or sites that contain information needed to answer important scientific research questions, have a special and particular quality, such as being the oldest or best example of its type, or which are directly associated with an important prehistoric or historic event or person (CEQA Section 21083.2).

Once a resource has been identified as a historical resource, it then must be determined whether the project's impacts would "cause a substantial adverse change in the significance" of the resource (CEQA Guidelines Section 15064.5[b]). A *substantial adverse change in the significance of a historical resource* means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historic resource would be materially impaired" (CEQA Guidelines Section 15064.5[b][1]). A historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that do any of the following (CEQA Guidelines Section 15064.5[b][2]):

(1) Convey its historical significance and that justify its inclusion in, or eligibility for, the California Register.

(2) Account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, 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.

(3) Convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Human remains, including those buried outside of dedicated cemeteries, are protected under several state laws, including Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. These laws are identified in Section 3.5.2, *Regulatory Setting*.

3.5.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 [of the CEQA Guidelines].

Operation and maintenance of the Project would not affect known architectural historical resources because any ground disturbance, such as that associated with access road maintenance, would not occur at depths beyond those reached during construction. (*No Impact*)

Impact 3.5-1: Project construction could cause an adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines. *(Less than Significant)*

CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. The following discussion focuses on historic-era architectural and structural resources of the built environment. Archaeological resources, including those that are potential historical resources according to CEQA Guidelines Section 15064.5, are addressed below under Criterion b).

Construction

Five significant architectural resources that are considered historical resources intersect the Project area: P-36-010316, the Bishop Tower Line; P-36-006693, the ATSF BNSF Railroad; P-36-007545, U.S. Highway 395; P-15-007069; and P-36-008315, CHL No. 938, Rand Mining District; and Randsburg Mojave Road, an element of the Rand Mining District. Four of these resources are long linear resources with only a small segment or portion that intersects the Project area and the only element of the Rand Mining District in the Project area is one of the four long linear resources (Randsburg Mojave Road).

- *P-36-010316, the Bishop Tower Line,* is adjacent to the proposed Kramer–Cal City 115 kV Subtransmission Line alignment. The character-defining features of this resource include its alignment, setting, and historical associations with transportation and electrical power conveyance. The construction of the proposed new line adjacent to or within the same corridor of an existing line would not result in a significant impact because the significant character-defining features of the eligible line would not be removed or modified. Therefore,

construction of the Project would not cause a substantial adverse change in the significance of this architectural historical resource.

- *P-36-006693, the ATSF BNSF Railroad,* intersects the proposed Kramer–Cal City and Cal City–Edwards-Holgate 115 kV subtransmission line alignments. The Project would not adversely affect this resource, as none of the Project components propose changes to the railroad's primary character-defining features, which include its alignment, setting, and historical associations with transportation. Although the Project would conduct grading and install infrastructure adjacent to and crossing over one 20-foot-wide section of the more than 200-mile-long resource, it would not remove or affect any of the railroad's important character-defining features, and the resource would continue to serve its function. Therefore, construction of the Project would not cause a substantial adverse change in the significance of this architectural historical resource.

- *P-36-007545, U.S. Highway 395,* is adjacent to the proposed Kramer–Cal City 115 kV Subtransmission Line alignment and the Kramer Substation. The Project would not affect this architectural historical resource, as there are no Project components that that would change the road itself or its major character-defining feature, which is its historic alignment. Therefore, construction of the Project would not cause a substantial adverse change in the significance of this architectural historical resource.

- *P-15-007069 and P-36-008315, CHL No. 938, Rand Mining District,* one element of this district intersects the proposed Kramer–Cal City and Cal City–Edwards-Holgate 115 kV subtransmission line alignments. Only one contributing element of this district intersects the Project area, Randsburg Mojave Road. The Project would not affect this historic district because none of the proposed transmission line structures would be placed within the district, which is constrained to the boundary of Randsburg Mojave Road in the Project area and no changes are proposed to the road's historic alignment, which is its most important character-defining feature.

- *Randsburg Mojave Road,* The Project would not affect this architectural historical resource, which is an element of the Rand Mining District, because none of the proposed transmission line structures would be placed within the road and no changes are proposed to the road's historic alignment, which is its most important character-defining feature. Therefore, construction of the Project would not cause a substantial adverse change in the significance of this architectural historical resource.

Based on a review of the architectural resources that are considered historical resources that intersect the Project area, construction of the proposed Project would not cause a substantial adverse change in the significance of any architectural historical resources. Thus, the Project would have a less-than-significant construction impact on historical resources.

Mitigation: None required.

Criterion b) Whether the Project would cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 [of the CEQA Guidelines].

Operation and maintenance of the Project would not affect archaeological resources because no ground disturbance would occur at depths beyond those reached during construction. *(No Impact)*

Impact 3.5-2: Project construction could cause an adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines. (*Less than Significant*)

This impact discusses archaeological resources, both as historical resources according to CEQA Guidelines Section 15064.5 and as unique archaeological resources as defined in Public Resources Code Section 21083.2(g). A significant impact would occur if the Project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration.

Kramer–Cal City 115 kV Subtransmission Line (Includes Distribution Underbuild, Wood Pole Removal, and Telecommunication)

One significant archaeological resource, CalCity-S-063, is along the proposed Kramer–Cal City 115 kV Subtransmission Line. This resource is a large multicomponent resource that consists of a historic-period refuse scatter and a pre-contact component that includes five lithic concentrations and three milling features. The historic-era component of the resource is not significant. Project activities within this resource would include the installation of two subtransmission structures and improvements to and use of an existing access road.

To reduce potential impacts on this resource and any newly identified resources within this Project component, SCE has committed to preparing a plan to address impacts on resources in accordance with APM CUL-1, *Develop a Cultural Resource Management Plan (CRMP)*. Surveys would be conducted for any portion of the Project alignment not yet surveyed and any discovered significant archaeological resources would be avoided according to APM CUL-2, *Avoid Environmentally Sensitive Areas (ESA)*. SCE would also require all construction personnel to attend a cultural resources training under APM CUL-3, *Train Construction Personnel*, and archaeological monitoring would be conducted in accordance with APM CUL-4, *Conduct Construction Monitoring*. This would allow for archaeologists to identify and evaluate any inadvertent discoveries of cultural resources and identify ways to avoid or minimize any associated impact. With implementation of APMs CUL-1 through CUL-4, the potential impact related to archaeological resources within this component of the Project would be **less than significant**.

Cal City–Edwards–Holgate 115 kV Subtransmission Line (Includes Distribution Underbuild, Wood Pole Removal, and Telecommunication)

Six significant archaeological resources would be intersected by the Cal City–Edwards–Holgate 115 kV Subtransmission Line component of the Project: CalCity-S-129, CalCity-S-142, CalCity-S-147, CalCity-S-154, CalCity-S-161, and CalCity-S-507. Descriptions of the resources are presented below, followed by a description of Project activities that would affect them.

- *CalCity-S-129* is a medium-density multicomponent resource that consists of a pre-contact lithic scatter with tools and a historic-era refuse scatter. Only the pre-contact component of this resource is significant. Project construction activities within this resource would include the installation of one subtransmission structure and improvements to and use of an existing access road.
- *CalCity-S-142* is a large multicomponent resource that consists of a historic-era refuse scatter and a pre-contact lithic scatter with tools. Only the pre-contact component of this resource is significant. Project construction activities within this resource would include the installation

of one subtransmission structure, construction and use of a new access road, and conductor pulling and tensioning/stringing.

- *CalCity-S-147* is a large multicomponent resource that consists of a historic-era refuse scatter and a pre-contact component that includes a high-density lithic scatter. Only the pre-contact component of this resource is significant. Project construction activities within this resource would include the installation of two subtransmission structures and installation and use of a new access road.
- *CalCity-S-154* is a large multicomponent resource that consists of a medium-density historic-era refuse scatter and a pre-contact lithic scatter, groundstone, and one lithic concentration. Only the pre-contact component of this resource is significant. Project construction activities within this resource would include the installation of one subtransmission structure adjacent to the resource, installation and use of a new access road, and conductor pulling and tensioning/stringing.
- *CalCity-S-161* is a pre-contact resource that consists of a lithic scatter with one metate and a lithic concentration. Project construction activities within this resource would include the installation of one subtransmission structure and installation and use of a new access road.
- *CalCity-S-507* is a large multicomponent resource that consists of a historic-era refuse scatter, and a pre-contact lithic scatter. Only the pre-contact component of this resource is significant. Project construction activities within this resource would include the installation of two subtransmission structures and installation and use of a new access road.

To reduce potential impacts on these significant archaeological resources and any newly identified significant resources within this component of the Project, SCE has committed to preparing a plan to address impacts on resources in accordance with APM CUL-1, *Develop a Cultural Resource Management Plan (CRMP)*. Surveys would be conducted for any portion of the Project alignment not yet surveyed and any significant archaeological resources discovered would be avoided as required by APM CUL-2, *Avoid Environmentally Sensitive Areas (ESA)*. SCE would also require all construction personnel to attend a cultural resources training in accordance with APM CUL-3, *Train Construction Personnel*, and archaeological monitoring would be conducted as required by APM CUL-4, *Conduct Construction Monitoring*. With implementation of APMs CUL-1 through CUL-4, the potential impact related to archaeological resources within this component of the Project would be less than significant.

Cal City Substation Improvements (Includes Distribution Getaways and Telecommunication)

No historical or unique archaeological resources were identified within the proposed Cal City Substation improvements site; however, the potential exists for unknown or buried archaeological resources to be present. To reduce potential impacts on any newly identified resources within this component of the Project, SCE has committed to preparing a plan to address impacts on resources in accordance with APM CUL-1, *Develop a Cultural Resource Management Plan (CRMP)*. Surveys would be conducted for any portion of the site not yet surveyed and any discovered significant archaeological resources would be avoided as required by APM CUL-2, *Avoid Environmentally Sensitive Areas (ESA)*. SCE would also require all construction personnel to attend cultural resources training under APM CUL-3, *Train Construction Personnel*, and archaeological monitoring would be conducted in accordance with APM CUL-4, *Conduct Construction Monitoring*. With implementation of APMs CUL-1 through CUL-4, the potential

impact related to archaeological resources within this component of the Project would be less than significant.

Other Existing Substation Improvements (Includes Telecommunication)

No historical or unique archaeological resources were identified within the Edwards and Kramer substations or within the Holgate Switchyard. However, the potential exists for unknown or buried archaeological resources to be there. To reduce potential impacts on any newly identified resources within this component of the Project, SCE proposes to prepare a plan to address impacts on resources in accordance with APM CUL-1, *Develop a Cultural Resource Management Plan (CRMP)*. Significant archaeological resources would be avoided as required by APM CUL-2, *Avoid Environmentally Sensitive Areas (ESA)*. SCE would also require all construction personnel to attend a cultural resources training under APM CUL-3, *Train Construction Personnel*, and archaeological monitoring would be conducted in accordance with APM CUL-4, *Conduct Construction Monitoring*. With implementation of APMs CUL-1 through CUL-4, the potential impact related to archaeological resources within this component of the Project would be less than significant.

Mitigation: None required.

Criterion c) Whether the Project would disturb any human remains, including those interred outside of formal cemeteries.

Impact 3.5-3: The Project may disturb human remains, including those interred outside of dedicated cemeteries. (*Less than Significant*)

There are no known cultural resources with human remains in the Project area. Additionally, there is no indication that the Project area has been used for human burial purposes in the recent or distant past. However, in the event that human remains are discovered, including those interred outside of formal cemeteries, SCE proposes to implement APM CUL-5, *Properly Treat Human Remains*, to reduce the potential for any encountered human remains to be inadvertently damaged and to ensure that they would be addressed appropriately. With implementation of APM CUL-5, the potential impact would be less than significant.

Mitigation: None required.

3.5.5.3 Cumulative Effects Analysis

This section presents an analysis of the cumulative effects of the Project when considered in combination with other past, present, and reasonably foreseeable future projects that could result in cumulatively considerable impacts on cultural resources and human remains. Significant cumulative impacts could occur if the incremental impacts of the Project would combine with the incremental impacts of one or more cumulative projects. Section 3.0.3, *Approach to the Cumulative Impacts Analysis*, includes Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, which lists past, present, and reasonably foreseeable future projects within a 5-mile radius of the Project area.

The geographic context for the analysis of cumulative impacts associated with cultural resources and human remains include projects considered ongoing and future projects within 5 miles of the Project's components that would affect similar types of cultural resources, as described in Section 3.0. This geographic scope of analysis is appropriate because the cultural resources within this radius are expected to be similar to those in the Project area because their proximity, as well as the similar environments, landforms, and hydrology within this area would result in similar land use types, and thus, site types. The temporal scope of the cumulative analysis includes the 24-month duration of construction. Operation and maintenance of the Project or projects in the cumulative scenario would have no impact on cultural resources or human remains because no ground disturbance would occur at depths beyond those reached during construction.

Criterion a)

Impact C.3.5-1: The Project construction impact related to causing an adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines would not be cumulatively considerable. (*Less than Significant*)

Based on a review of the architectural resources that are considered historical resources that intersect the Project area, construction of the proposed Project would not cause a substantial adverse change in the significance of any architectural historical resources. Thus, a less-than-significant impact on historical resources would occur during construction of the Project. The cumulative projects identified in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, may cause adverse changes in historical resources that could cause a cumulative impact; however, the Project's less-than-significant impact would not be cumulatively considerable. Therefore, the Project's contribution to a cumulative impact would be less than significant.

Mitigation: None required.

Criterion b)

Impact C.3.5-2: The Project construction impact related to causing an adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines would not be cumulatively considerable. (*Less than Significant*)

One significant archaeological resource, CalCity-S-063 has been identified along the proposed Kramer-Cal City 115 kV Subtransmission Line and six significant archaeological resources (CalCity-S-129, CalCity-S-142, CalCity-S-147, CalCity-S-154, CalCity-S-161, and CalCity-S-507) have been identified within the Cal City-Edwards-Holgate 115 kV Subtransmission Line component of the Project. With implementation of APMs CUL-1 through CUL-4, which would require the development of a cultural resources management plan to identify areas of archaeological sensitivity that require monitoring; the avoidance of environmentally sensitive areas; monitoring of areas identified by the management plan; and implementation of worker environmental awareness training for cultural resources, the potential impact of the Project related to these significant archaeological resources would be less than significant.

As shown in Table 3.0-1, 16 cumulative projects have been identified within 5 miles of the Project. These include commercial, energy, and industrial developments, which are subject to environmental review by local jurisdictions. These projects are located on a mix of developed,

previously disturbed, and undisturbed lands outside the Project area. These cumulative projects would be required to comply with applicable federal and state environmental regulations; however, they could have an impact on known and previously undiscovered archaeological resources during ground-disturbing activities. It is not clear if the cumulative projects would be required to implement mitigation, avoidance, and minimization measures to reduce impacts on archaeological resources consistent with the Project's implementation of APMs CUL-1 through CUL-4. Therefore, the cumulative projects could cause adverse changes in archeological resources that could cause a cumulative impact. However, with implementation of the APMs, the Project's impact on archaeological resources would not be cumulatively considerable, and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion c)

Impact C.3.5-3: The Project impact related to disturbance of human remains, including those interred outside of dedicated cemeteries, would not be cumulatively considerable. (*Less than Significant*)

There are no known archaeological resources with human remains, cemeteries, or other recorded human remains within the Project area. However, there is still the potential that there are unknown human remains at the Project area. With implementation of APM CUL-5, the potential impact of the Project related to disturbance of human remains would be less than significant. Regulatory controls such as provisions of the Public Resources Code and California Health and Safety Code that protect human remains (see Section 3.5.2, *Regulatory Setting*) are applicable to all projects, including the cumulative projects evaluated in this analysis. There is no indication of any existing significant adverse condition related to the discovery of human remains in the geographic area of cumulative consideration to which the Project or any of the cumulative projects could contribute. The Project impact related to disturbance of human remains would not be cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

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3.6 Energy

This section evaluates the impacts of the Project on energy. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The information and analysis presented are based in part on fuel use consumption calculations estimated for the Project by Southern California Edison (SCE), presented in **Appendix F.1**, Tables 40 and 41. The calculations were reviewed by Environmental Science Associates and were found to be adequate for use in this analysis.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to energy.

3.6.1 Environmental Setting

3.6.1.1 Electricity

California

The generating capacity of a unit of electricity is expressed in megawatts (MW). Generation is typically measured in megawatt-hours (MWh), kilowatt-hours (kWh), or gigawatt-hours (GWh). Total electricity generation in California in 2023 was 281,140 GWh, down 2.1 percent (6,080 GWh) from 2022. Renewable and non–greenhouse gas (GHG) emitting electricity generation resources—nuclear and large hydroelectric—accounted for 58 percent of total electricity generation in California, compared to 54 percent in 2022. Net imports of electricity to California for 2023 accounted for 65,518 GWh, down 22 percent (83,960 GWh) from 2022 (CEC 2025a).

Regional

Southern California Edison is the main electricity provider for San Bernardino County and eastern Kern County. SCE provides electrical service to approximately 15 million people, 180 incorporated cities, 15 counties, 5,000 large businesses, and 280,000 small businesses throughout its 50,000-square-mile service area (SCE 2024a).

SCE produces and purchases its energy from a mix of conventional and renewable generating sources. SCE generates power from a variety of energy sources: large hydropower (greater than 30 MW); gas and nuclear sources; and renewable resources, such as wind, solar, small hydropower (less than 30 MW), and geothermal sources. In 2023 (the most recent year for which data are available), the SCE power system experienced a peak demand of 21,254 MW (SCE 2024b). Approximately 40 percent of SCE's electricity purchases in 2023 were from renewable resources, which was slightly more than the approximately 37 percent statewide percentage of electricity purchases from renewable resources (SCE 2024b CEC 2025b). **Table 3.6-1**, *Electric Power Mix*

Delivered to Retail Customers in 2022, displays the electric power mix that SCE delivered to retail customers compared to the statewide power mix for 2022.

TABLE 3.6-1
ELECTRIC POWER MIX DELIVERED TO RETAIL CUSTOMERS IN 2022

Energy Resource	2022 SCE	2022 Statewide Power Mix (for comparison)[a]
Eligible Renewable	33.2%	35.8%
Biomass and Bio-waste	0.1%	2.1%
Geothermal	5.7%	4.7%
Small Hydroelectric	0.5%	1.1%
Solar	17.0%	17.0%
Wind	9.8%	10.8%
Coal	0.0%	2.1%
Large Hydroelectric	3.4%	9.2%
Natural Gas	24.7%	36.4%
Nuclear	8.3%	9.2%
Other	0.1%	0.1%
Unspecified Sources of Power[b]	30.3%	7.1%
Total	***100%***[c]	***100%***[c]

NOTES: SCE = Southern California Edison

a. Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the previous year. The eligible renewable percentage above does not reflect Renewables Portfolio Standard compliance, which is determined using a different methodology.
b. "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.
c. Totals may not add up exactly due to rounding.

SOURCE: CEC 2023

Local

The total amount of electricity consumed in 2022 from residential and nonresidential uses in Kern County was 12,096 GWh and 2,765 GWh, respectively, for a total of 14,861 GWh. The total amount of electricity consumed in 2022 from residential and nonresidential uses in San Bernardino County was 10,328 GWh and 6,302 GWh, respectively, for a total of 16,630 GWh (CEC 2024a).

3.6.1.2 Transportation Fuels

California

Gasoline is by far the largest transportation fuel by volume used in California, and nearly all the gasoline used in California is obtained through the retail market. Diesel fuel is the second largest transportation fuel by volume used in the state. The annual transportation fuel consumption of gasoline and diesel in 2023 in California (the most recent year for which statewide data are available) is approximately 13.6 billion gallons of gasoline, including aviation gasoline, and 3.5 billion gallons of diesel fuel (CEC 2024b).

Local

Regular unleaded gasoline is used primarily to fuel passenger cars and small trucks. Diesel fuel is used primarily in large trucks and construction equipment. Both are used widely in Kern and San Bernardino counties and across all parts of the SCE service territory. The total 2023 sales of gasoline in Kern County and San Bernardino County were 401 million and 897 million gallons, respectively (CEC 2024b). The total 2023 sales of diesel in Kern County and San Bernardino County were 364 million and 408 million gallons, respectively (CEC 2024b).

3.6.2 Regulatory Setting

3.6.2.1 Federal

Energy Policy Act of 2005

The Energy Policy Act of 2005 includes provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy. The Renewable Fuel Standard program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 facilitates increased use of renewable energy and increased energy efficiency by requiring the following:

- Increasing the supply of alternative fuel sources by setting mandatory Renewable Fuel Standards that requires fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Establishing miles per gallon targets for cars and light trucks and directing the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of the Energy Independence and Security Act address energy savings in government and public institutions, promote research for alternative energy, international energy programs, and the creation of "green jobs."[1]

U.S. Department of Transportation, U.S. Department of Energy, and U.S. Environmental Protection Agency

On the federal level, the U.S. Department of Transportation (USDOT), U.S. Department of Energy, and U.S. Environmental Protection Agency (USEPA) have substantial influence over energy policies related to the consumption of transportation fuels. Generally, federal agencies influence transportation energy consumption by establishing and enforcing fuel economy standards for automobiles and light trucks, funding energy-related research and development projects, and funding transportation infrastructure projects.

[1] A "green job," as defined by the U.S. Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) Standards (Code of Federal Regulations Title 49, Parts 531 and 533) reduce energy consumption by increasing the fuel economy of cars and light trucks. The NHTSA and USEPA jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for four factors: (1) technological feasibility, (2) economic practicality, (3) effect of other standards on fuel economy, and (4) the need for the nation to conserve energy. When these standards are raised, automakers respond by creating a more fuel-efficient fleet. In 2012, NHTSA established final passenger car and light truck CAFE standards for model years 2017–2021. On average, the CAFE standards required a combined fleet-wide fuel economy of 40.3 to 41.0 miles per gallon (mpg) for model year 2021.

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The standards for carbon dioxide emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. The Phase 1 heavy-duty truck standards, applicable to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014–2018, resulted in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type (USEPA 2011). USEPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021–2027 and require the phase-in of a 5–25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA 2016). The Phase 2 standards are expected to lower carbon dioxide emissions by approximately 1.1 billion metric tons.

In March 2020, USDOT and USEPA issued the final Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which amends the existing CAFE standards for passenger cars and light trucks and establishes new standards covering model years 2021–2026. These standards set a combined fleet-wide average of 37 mpg for the model years affected (USEPA 2020). On January 20, 2021, President Biden issued Executive Order 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis," which directed USEPA to consider whether to propose suspending, revising, or rescinding the standards previously revised under the SAFE Vehicles Rule for model years 2021–2026. In February 2022, USEPA issued the Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards. This final rule revises current GHG standards for vehicles with model years 2023–2026; it also establishes the most stringent GHG standards ever set for the light-duty vehicle sector, which are expected to result in average fuel economy of 40 mpg, while the standards they replace (the SAFE rule standards) would achieve only 32 mpg for model year 2026 vehicles (USEPA 2021).

On July 28, 2023, NHTSA proposed new CAFE standards for passenger cars and light trucks for model years 2027–2032 and new fuel efficiency standards for heavy-duty pickup trucks and vans for model years 2030–2035. The proposed rule would require an industry fleet-wide average of approximately 58 mpg for passenger cars and light trucks in model year 2032, by increasing fuel economy by 2 percent year over year for passenger cars and 4 percent year over year for light trucks (NHTSA 2023). For heavy-duty pickup trucks and vans, the proposed rule would increase fuel efficiency by 10 percent year over year (NHTSA 2023). On June 7, 2024, USDOT finalized and updated the CAFE standards for model years 2027–2031. In this final rule, fuel economy will

increase 2 percent per year for model year 2027–2031 passenger cars and 2 percent per year for model year 2029–2031 light trucks. These increases will bring the average light-duty vehicle fuel economy up to approximately 50.4 miles per gallon by model year 2031. Fuel efficiency of heavy-duty pickup trucks and vans will increase 10 percent per year for model years 2030–2032 and 8 percent per year for model years 2033–2035 (USDOT 2024).

3.6.2.2 State

California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHGs from the transportation sector, and reduce vehicle miles traveled. Additionally, California is transitioning to zero-carbon, renewable sources of power while requiring the rapid electrification of large segments of the economy.

Renewables Portfolio Standard

The State of California has adopted regulations to increase the proportion of electricity from renewable sources. In 2008, Executive Order S-14-08 expanded the state's Renewables Portfolio Standard (RPS) goal to 33 percent renewable power by 2020. In 2009, Executive Order S-21-09 directed the California Air Resources Board (CARB) (under its Assembly Bill 32 authority) to enact regulations to help the state meet the 2020 goal of 33 percent renewable energy. The 33-percent-by-2020 RPS goal was codified with the passage of Senate Bill (SB) X1-2. This RPS applied to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. SB 350 (Chapter 547, Statutes of 2015) further increased the RPS to 50 percent by 2030, including interim targets of 40 percent by 2024 and 45 percent by 2027. In 2018, SB 100 further increased California's RPS and requires retail sellers and local publicly owned utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; it also requires CARB to plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

CPUC and the California Energy Commission (CEC) jointly implement the RPS program. CPUC's responsibilities are to (1) determine annual procurement targets and enforce compliance, (2) review and approve each investor-owned utility's renewable energy procurement plan, (3) review contracts for RPS-eligible energy, and (4) establish the standard terms and conditions used in contracts for eligible renewable energy.

California Public Utilities Commission Decision Adopting Energy Efficiency Goals for 2024–2035

Public Utilities Code Sections 454.55 and 454.56 require the CPUC in consultation with the CEC to identify all potentially achievable cost-effective electricity and natural gas efficiency savings and establish efficiency targets for electrical and natural gas companies to achieve. The decision establishes energy-efficiency goals primarily for the large investor-owned utilities, including the Applicant (SCE), to inform planning activities of the energy efficiency portfolio administrators, CPUC integrated energy resource planning staff, and other state agencies such as the CEC and the California Air Resources Board, among others (CPUC 2023). Energy-efficiency goals are measured

in "total system benefits," which "reflects the life cycle energy, capacity, and greenhouse gas benefits of an efficiency or fuel substitution measure in dollar terms, in contrast to the separate energy and peak demand" measures the CPUC previously relied upon.

Senate Bill 1389

SB 1389 (Public Resources Code Sections 25300–25323) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (Public Resources Code Section 25301[a]). The Integrated Energy Policy Report, the latest published report from the CEC, provides the results of the CEC's assessments related to energy sector trends, including energy equity, electricity reliability in Southern California, and forecasts of electricity and transportation energy demand.

Senate Bill 100

On September 10, 2018, Governor Edmund G. Brown Jr. signed SB 100, which mandated that all electricity in California be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also created new standards for the RPS goals established by SB 350 in 2015. Specifically, the law increased the percentage of energy that must come from renewable sources for both investor-owned utilities and publicly owned utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers were required to have a renewable energy supply of 33 percent by 2020, increasing to 44 percent by 2024 and 52 percent by 2027. The updated RPS goals are considered achievable because many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

On the same day that he signed SB 100, Governor Brown signed Executive Order B-55-18, which established a new statewide goal to achieve carbon neutrality (net-zero GHG emissions) by 2045 and to maintain net negative emissions thereafter.

Advanced Clean Cars Program

The Advanced Clean Cars emissions-control program was approved by CARB in 2012 and is closely associated with the Pavley regulations (CARB 2017). The program requires a greater number of zero-emission vehicles for model years 2015–2025 to reduce consumption of transportation fuels. The Advanced Clean Cars program includes the Low-Emissions Vehicle regulations, which reduce fuel use from light- and medium-duty vehicles; and the Zero-Emissions Vehicle (ZEV) regulations, which require manufacturers to produce an increasing number of pure ZEVs powered by battery and fuel cell and to continue producing plug-in hybrid electric vehicles between 2018 and 2025.

The primary mechanism for achieving the ZEV target for passenger cars and light trucks is CARB's Advanced Clean Cars II Program. The program's regulations focus on post-2025-model-year light-duty vehicles, as requirements are already in place for new vehicles through the 2025 model year.

Advanced Clean Trucks Program

The Advanced Clean Trucks regulations were approved on June 25, 2020, requiring that manufacturers sell zero-emissions or near-zero-emissions trucks as an increasing percentage of their annual California sales beginning in 2024 (CARB 2024a). The primary goal of this strategy is to reduce nitrogen oxide and GHG emissions through advanced clean technology, and to increase the penetration of the first wave of zero-emissions heavy-duty technology into applications that are well suited to its use. The regulations are also intended to reduce the consumption of diesel fuel.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to diesel particulate matter emissions (CARB 2024b) (California Code of Regulations Title 13, Section 2485, and Title 17, Section 93115). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure prohibits diesel-fueled commercial vehicles from idling for more than 5 minutes at any given location. The goal of this measure is primarily to reduce public health impacts from diesel emissions, but compliance also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

In-Use Off-Road Diesel Fueled Fleets Regulation

Because off-road vehicles that are used in construction and other related industries can last 30 years or longer, most of those that are in service today are still part of an older fleet that do not have emission controls. In 2007, CARB approved the In-Use Off-Road Diesel Fueled Fleets Regulation to reduce emissions from existing (in-use) off-road diesel vehicles that are used in construction and other industries (CARB 2007). This regulation sets an anti-idling limit of 5 minutes for all off-road vehicles 25 horsepower and up. It also establishes emission rates targets for the off-road vehicles that decline over time to accelerate turnover to newer, cleaner engines. The goal of this regulation is primarily to reduce public health impacts from diesel emissions, but compliance also results in energy savings in the form of reduced fuel consumption from unnecessary idling and the use of more fuel-efficient engines.

3.6.2.3 Local

Kern County

Kern County’s adopted 2009 General Plan includes an energy element that addresses resource management and protection; establishes development standards to provide for the protection of the environment, public health, and safety; and promotes and facilitates energy development (Kern County 2009). The following policies are relevant to energy:

> ***Policy 1:*** The County should encourage the development and upgrading of transmission lines and associated facilities (e.g., substations) as needed to serve Kern County's residents and access the County's generating resources, insofar as transmission lines do not create significant environmental or public health and safety hazards.

Policy 2: The County shall review all proposed transmission lines and their alignments for conformity with the Land Use, Conservation, and Open Space Element of this General Plan.

Policy 3: In reviewing proposals for new transmission lines and/or capacity, the County should assert a preference for upgrade of existing lines and use of existing corridors where feasible.

Policy 4: The County should work with other agencies in establishing routes for proposed transmission lines. The County should discourage the siting of above-ground transmission lines in visually sensitive areas.

Policy 5: The County should encourage new transmission lines to be sited/configured to avoid or minimize collision and electrocution hazards to raptors.

San Bernardino County

San Bernardino Countywide Plan Policy

San Bernardino County's Countywide Plan Policy contains policies related to energy efficiency (San Bernardino County 2022). The following policy is applicable to the Project:

Policy IU-5.4: Electric transmission lines. We support the maintenance of existing and development of new electric transmission lines along existing rights-of-way and easements to maintain the stability and capacity of the electric distribution system in southern California.

San Bernardino County Renewable Energy and Conservation Element

San Bernardino County's Renewable Energy and Conservation Element is focused on sustainability, public health and wellness, and stewardship of land to promote an environment of prosperity and well-being for those who reside and invest in San Bernardino County (San Bernardino County 2019). The Renewable Energy and Conservation Element includes multiple goals and policies related to renewable energy, energy efficiency, and energy consumption. Although the element is energy-related, none of its policies are relevant or applicable to the Project.

City of California City

The Open Space and Conservation Element of the City of California City's adopted 2009 General Plan addresses renewable energy and energy efficiency (City of California City 2009). Although the element is energy-related, none of its policies are relevant or applicable to the Project.

3.6.3 Applicant Proposed Measures and Best Management Practices

3.6.3.1 Applicant Proposed Measures

SCE has identified Applicant proposed measures (APMs) to minimize impacts of the Project. **APM NOI-1** is proposed (i.e., as part of the Project) to reduce noise impacts, but implementing one of its measures would also serve to reduce transportation energy consumption during construction by minimizing the unnecessary use of construction vehicles and idling times. The

measure requires shutting off a vehicle's engine if the vehicle need not be used immediately or continuously for construction activities (see APM NOI-1 in Section 2.12.1).

3.6.3.2 Best Management Practices

SCE has also proposed implementation of best management practices that are based on the California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook*. The Project has not identified best management practices directly related to energy resources.

3.6.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant energy impact if it would:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

CPUC has also identified additional CEQA impact criteria that are specific to the types of projects evaluated by CPUC to be considered in addition to the criteria identified in Appendix G of the CEQA Guidelines (CPUC 2019). With regard to energy, the Project would also result in a significant energy impact if it would:

c) Add capacity for the purpose of serving a nonrenewable energy resource.

3.6.5 Direct and Indirect Effects

3.6.5.1 Approach to the Analysis

Impacts on energy resources within the Project area were determined based on assumptions regarding construction-related diesel and gasoline consumption for the Project, and on estimates of the Project's operational energy requirements. Per Appendices F and G of CEQA Guidelines, this impact analysis focuses on the anticipated energy demand and energy efficiency of the Project as a whole—during construction, operation, and maintenance of the Project facilities, including the proposed subtransmission lines. The analysis addresses whether the Project would result in the wasteful, inefficient, and unnecessary consumption of energy during construction or operation.

Off-road equipment inventories and construction and operation activity assumptions identified in SCE's air quality emission estimates were used to estimate the volumes of fuel that would be consumed by off-road equipment during Project construction and operation. Fuel consumption factors for off-road equipment were derived from equipment inventory data using CARB's Emission Factor model, fuel efficiency data from USEPA's *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES3.0.2*, and the Swiss Federal Office of Civil Aviation's *Guidance on the Determination of Helicopter Emissions*. Fuel use estimates for worker commuting and truck hauling during Project construction and operation

were also estimated using trip data identified for the Project (see Appendix F.1, Tables 2, 3, 40, and 41 for all fuel consumption factors and assumptions used to estimate Project fuel consumption volumes).

3.6.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation.

Impact 3.6-1: The Project would result in consumption of energy resources during construction and operation. (*Less than Significant*)

Construction

The Project's construction activities would consume energy primarily in the form of transportation fuels (e.g., diesel and gasoline) used by haul trucks; heavy-duty equipment, such as graders, loaders, and dozers; and worker vehicles operating at the Project sites and traveling to and from construction areas. Additionally, Project construction would result in the consumption of Jet A aviation fuel during helicopter support provided for installation of the subtransmission line structures and overhead conductors and cables. Electricity consumed by any electric-powered equipment would be minimal relative to the amount of diesel and gasoline consumed; its use would likely be limited to trailer hookups from existing nearby distribution lines at the substation and switchyard sites to provide energy for trailer lighting, heating, ventilation and air conditioning, and other equipment. Project construction activities would not involve the consumption of natural gas.

Construction activities and associated fuels use would likely vary substantially from day to day during the 24-month construction period, depending on the phase and type of construction activity and the number of workers and vendors traveling to the construction areas. This analysis used the same assumptions for the construction schedule, and the types, number, and level of construction equipment and vehicle use for each activity, as were used for the air quality and GHG emissions analyses.

Table 3.6-2 identifies the fuel consumption anticipated to occur during Project construction. As shown, the use of worker vehicles would consume 164,993 gallons of gasoline, construction vehicles would consume 38,892 gallons of gasoline and 103,341 gallons of diesel, construction equipment would consume 574,680 gallons of diesel, and helicopter and helicopter support activities would consume 115,896 gallons of Jet A fuel and 2,897 gallons of diesel, respectively. This would result in the consumption of a total of 203,885 gallons of gasoline, 680,918 gallons of diesel, and 115,896 gallons of Jet A fuel, over the Project's projected 24-month construction period.

For comparison purposes, the Project's total gasoline and diesel usage would represent less than 0.1 percent and 0.2 percent, respectively, of the 2023 annual on-road gasoline and diesel fuel-related energy consumption in either San Bernardino County or Kern County. Overall, fuel use during construction would be minimal compared to overall fuel use in the counties.

TABLE 3.6-2
PROJECT CONSTRUCTION FUEL CONSUMPTION

Source Type	Gasoline (gallons)	Diesel (gallons)	Jet A (gallons)
Worker Vehicles	164,993	–	–
Construction Vehicles	38,892	103,341	–
Construction Equipment	–	574,680	–
Helicopter and Helicopter Support	–	2,897	115,896
Project Total	***203,885***	***680,918***	***115,896***

NOTE: Project construction fuel consumption is based on a 2-year construction period.
SOURCE: Appendix F.1, Table 41.

During construction, the Project would use energy only for necessary on-site activities and to transport construction materials to and from the Project sites. In addition, SCE has proposed to implement APM NOI-1, which would impose idling restrictions and would result in less fuel combustion and energy consumption, thus reducing the Project's construction-related energy use. Project-specific construction-related energy demands would not be expected to have a significant adverse effect on energy resources. The amount, form, and use of energy required for construction activities would not be wasteful, inefficient, or unnecessary. Therefore, the Project would not result in the wasteful, inefficient, and unnecessary consumption of energy, and impacts associated with transportation fuels for construction of the Project would be less than significant.

Operation and Maintenance

Ongoing Project operation and maintenance activities would be similar to those currently performed by SCE for existing facilities. Current activities include but are not limited to washing insulators, trimming trees, controlling brush and weeds, and maintaining access roads. Additionally, operation and maintenance would include routine inspections at substations and throughout the subtransmission line rights-of-way, which would require the use of vehicles and equipment. An increase of approximately 230 gallons of diesel fuel annually would be needed to operate vehicles and equipment (based on Appendix F.1, Tables 3 and 32). This increase in total energy use for the Project represents a minor increase compared to energy used by existing SCE facilities in the area. The subtransmission lines proposed as part of the Project would be maintained in a manner consistent with ruling standards for the operation and maintenance of transmission lines identified in CPUC General Orders 95 and 128 as applicable, along with applicable federal, state, and local requirements.

The Project would not result in a potentially significant environmental impact due to wasteful, inefficient, and unnecessary consumption of energy. The associated impact for Project operation and maintenance would be **less than significant**.

Mitigation: None required.

Criterion b) Whether the Project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. *(No Impact)*

Energy standards mentioned in Section 3.6.2, *Regulatory Setting*, such as the Energy Policy Act of 2005, the CPUC energy-efficiency goals, and the RPS, promote strategic planning standards that reduce consumption of fossil fuels, increase the use of renewable resources, and enhance energy efficiency. In general, these regulations and policies specify strategies to reduce fuel consumption and increase fuel efficiency and energy conservation. If the Project were to use energy resources in a wasteful manner, it would conflict with state energy standards. Construction, operation, and maintenance would be conducted in a manner consistent with the goals and strategies of state energy standards. Compliance with the state's regulation for in-use off-road diesel vehicles that requires limiting idling to no more than 5 minutes would ensure that fuel energy consumed in the construction phase would not be wasted through unnecessary idling. Implementation of APM NOI-1 would impose additional idling restrictions and would result in less fuel combustion and energy consumption, thus reducing the Project's construction-related energy use. Project construction would be short-term and would not result in a permanent increase in the use of nonrenewable energy resources.

There would be a minor increase in demand for electricity during the Project's construction and operational phases. However, this would not conflict with the long-term RPS goal, as the energy utilized on-site would be provided by SCE, which is required to comply with the RPS. Overall, the Project would increase the efficiency of the existing subtransmission network while utilizing the energy generated for the SCE system that would be compliant with the RPS. Increasing the efficiency of the existing subtransmission network would improve California's ability to supply renewable energy to end-use customers specifically within the greater SCE service area and to achieve statewide renewable-energy goals. Additionally, when considering the implementation of the state RPS program, the Project would not prevent the use of renewable energy sources for electricity in the future.

Project operation would include ongoing maintenance activities that would require the use of trucks and equipment that use nonrenewable fuels. Fuel use for Project operation and maintenance would be minimal, requiring a negligible percentage of the overall fuel supplied to the portions of Kern County and San Bernardino County located within the Project area. Operation and maintenance fuel use associated with the Project would not conflict with current energy conservation standards.

Criterion c) Whether the Project would add capacity for the purpose of serving a nonrenewable energy resource.

The Project would not add capacity for the purpose of serving a nonrenewable energy resource. *(No Impact)*

The Project would connect existing SCE substations and a switchyard and provide additional capacity to SCE's subtransmission line network served from SCE's Kramer Substation. Within the Kramer 115 kV subtransmission system, all 115 kV facilities are connected electrically; therefore, any electricity-generating project that would be connected to the subtransmission system would also increase the capacity of the overall 115 kV subtransmission system. With the exception of any sections of 115 kV lines that may provide dedicated service to a single customer, all 115 kV lines share the power flow within the system; thus, that power flow would not be specific to renewable or nonrenewable energy projects (SCE 2023). Therefore, the Project would not add capacity for the purpose of serving a nonrenewable energy resource.

Furthermore, the Project would contribute to meeting existing and projected local peak demand electricity needs. Consequently, the Project would have a beneficial impact on local and regional energy supplies because it would ensure that current energy needs are met and that there is capacity and infrastructure to meet existing and projected future energy needs in the California City portion of the electrical needs area. No adverse impact on local or regional energy supplies or capacity would result.

The Project would allow for electrical energy to be transmitted to the grid during peak and base periods. Impacts to peak or base electricity demands would occur if significant amounts of electricity were required for construction, operation, or maintenance of the Project such that SCE would be required to increase its available supply or production capacity. There may be a limited temporary increase in use of electricity resources during construction, as discussed under Impact 3.6-1. However, given the negligible amount of electricity required for the Project, construction would not impact peak or base power demands. Additionally, the Project would not impact electricity generation facilities' ability to provide and maintain existing levels of service during peak and base period demands. Consequently, the Project would cause no adverse impact related to the demand for electricity or other forms of energy.

3.6.5.3 Cumulative Effects Analysis

The geographic context for potential cumulative impacts related to electricity use is SCE's service area, and for equipment and vehicle fuel use it is the area within the Project's construction equipment delivery and workers' average travel radius. These areas represent the geographic context because they are the areas within which energy resources would be supplied for the Project.

Criterion a)

The Project would use energy resources during initial construction, operation, and maintenance; therefore, the temporal context is during any of these phases as well. Regarding electricity, existing electrical demand loading has exceeded the capacity of Cal City Substation (as limited by the 33 kV source lines and the transformation capacity of the substation) beginning in 2017 and the load is forecast to grow through 2026 and plateau through 2031. However, the Project would allow for more efficient transmission and use of energy that would be generated within the SCE system and would contribute to electrical grid reliability. No significant adverse cumulative effect related to wasteful, inefficient, or unnecessary consumption would occur from electricity use;

instead, a beneficial cumulative impact related to efficient transmission of electricity and grid stability would result.

Impact C.3.6-1: The Project impact of consumption of energy resources during construction and operation would not be cumulatively considerable. (*Less than Significant*)

Similarly, regarding the efficiency of fuel use, there is no existing significant adverse condition (such as a shortage) that would be worsened or intensified by the Project. The past, present, and reasonably foreseeable future projects described in Section 3.0 (see Figure 3.0-1, *Cumulative Projects within 5 Miles of the Project*, for cumulative project locations) near the Project alignments and sites could require gasoline or diesel but would not combine with the Project's fuel demands to cause a significant adverse cumulative impact related to the wasteful, inefficient, or unnecessary consumption or use of fuel. In the event of a future shortage, higher prices at the pump would curtail unnecessary trips that could be termed "wasteful" and would moderate choices regarding vehicles, equipment, and fuel efficiency. Under these conditions, the Project's less-than-significant impact relating to wasteful, inefficient, or unnecessary consumption or use of fuel would not be cumulatively considerable. As a result, the Project's cumulative energy impact would be **less than significant**.

Mitigation: None required.

Criteria b) and c)

As presented in Section 3.6.5.2, *Direct and Indirect Impacts of the Project*, there would be no impact with respect to a conflict with, or obstruction of, a state or local plan for renewable energy or energy efficiency, or with respect to adding capacity for the purpose of serving a nonrenewable energy resource. Therefore, the Project would not contribute to any potential significant cumulative impacts regarding these criteria. *(No Impact)*

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USEPA. 2021. Final Rule, Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards. *Federal Register* 86(248), December 30, 2021. Available: https://www.govinfo.gov/content/pkg/FR-2021-12-30/pdf/2021-27854.pdf. Accessed June 2024.

3.7 Geology, Soils, and Paleontology

This section evaluates the impacts of the Project relative to geology, soils, and paleontology. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to geology, soils, and paleontology. A geotechnical investigation report for the Cal City Substation Project component was conducted in July 2022 by Geotechnical Solutions Inc. (see **Appendix H**; GSI 2022), and a paleontological report was conducted in February 2023 by Rincon Consultants, Inc. (Rincon 2023). The results of these investigations are incorporated into the following discussion.

3.7.1 Environmental Setting

3.7.1.1 Regional Geology

The Project is in the Mojave Desert in California City and north of Edwards Air Force Base (see Figure 2-1 in Chapter 2, *Project Description*). The Mojave Desert is 1 of 11 geomorphic provinces in California (CGS 2002) and is defined as a region of unique topography and geology that is distinguished from other regions based on its landforms and geologic history. The Mojave Desert Province is a broad interior region of isolated mountain ranges separated by expanses of desert plains that is located between the Sierra Nevada (by the Garlock Fault) and the Transverse Ranges (by the San Andreas Fault).

3.7.1.2 Local Geology

The mountain and valley areas crossed by the Project alignments are described below. The boundaries between these areas are not sharply defined and the descriptions are general. The Project area is within the Mojave Desert, including the Antelope Valley, and is bordered by the Rand Mountains to the north and the Tehachapi Mountains to the west. The southwestern section of the proposed Cal City–Edwards-Holgate 115 kilovolt (kV) Subtransmission Line alignment, generally south of Sequoia Boulevard and west of Holgate Switchyard, is within the Antelope Valley.

Mojave Desert

The Mojave Desert is an arid region in southeastern California and parts of Nevada, Arizona, and Utah. The desert occupies more than 25,000 square miles, ranging from below sea level to more than 5,000 feet in elevation (USGS 2008). The Mojave Desert is a Cenozoic feature that formed during the Oligocene Epoch (about 40 million years ago) from movement along the San Andreas and Garlock faults. The broad alluvial basins that dominate the region were formed by eroded materials from the adjacent mountain ranges.

Within the Mojave Desert, volcanic and sedimentary deposits of early middle Tertiary (Oligocene to middle Miocene) age are the oldest and most widespread Tertiary rocks. They are extensive in the western and central parts and present locally in the northern and eastern parts. The age of this assemblage may range from Oligocene to middle Miocene. All these deposits accumulated on an eroded basement platform in parts of the Mojave Desert region that evolved into depositional basins. The most extensive are in the western and central parts, which are designated as the western and central Mojave Desert basins, respectively. Repeated glacial advance and retreat during the Pleistocene created numerous lakes, which provided conditions for the preservation of fossils. The modern, intermittently flooded playa lakes found in the Mojave Desert are smaller remnants of these Pleistocene lakes (Dibblee 1980).

Antelope Valley

The southwestern section of the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line south of Sequoia Boulevard and west of Holgate Switchyard is within the Antelope Valley. The Antelope Valley is a 2,400-square-mile high desert straddling northern Los Angeles County and southern Kern County. The valley represents a large topographic and groundwater basin in the western part of the Mojave Desert in Southern California. It is an undrained, closed basin that allows no outflow to other external bodies of water. The region occupies part of a structural depression that has been downfaulted between the Garlock, Cottonwood-Rosamond, and San Andreas fault zones. Consolidated rocks that yield virtually no water underlie the basin and crop out in the highlands that surround the basin. They consist of igneous and metamorphic rocks of pre-Tertiary age that are overlain by indurated continental rocks of Tertiary age interbedded with lava flows (USGS 1995).

Geologic Units and Paleontological Resources

The paleontological resources technical report (PRTR) prepared for the Project provides a detailed description of geologic units and paleontological resources along the Project alignments, as summarized below (Rincon 2023).

Paleontological resources, or *fossils*, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows). Fossils greater than 5,000 years old (i.e., older than middle Holocene in age) may be considered potential paleontological resources and are typically preserved in sedimentary rocks. Although they are rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions. Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors.

The PRTR presents information about documented fossil collection localities within a 300-foot buffer from the Project sites and alignments. The report also presents a paleontological resource sensitivity analysis for the Project based on published geological mapping, along with the resource sensitivity of each rock type in the Project area with supporting detailed maps of the geologic units. A paleontological resources survey was also conducted for the Project in November and December 2021 to support the findings of the PRTR. No paleontological resources were identified

during this survey. The following is a summary of the surficial geology and paleontological sensitivity of the geologic units within the Project area.

The majority of the Project area is covered by Quaternary alluvial sediments and felsic plutonic rock from the Mesozoic (**Table 3.7-1**).[1] Most of the alluvial sediments in the Project area are composed of grus, a sedimentary rock produced by the weathering of felsic plutonic rocks. In certain areas, several other sediment types occur as well. Playa sediments occur in the southwestern part of the Project area. Most of these playas have not flooded since the Pleistocene, but small areas are considered "active" playas (defined as being flooded within the past few decades). Geologic units with high paleontological sensitivity (i.e., Qoa and Tif, described below) are largely concentrated around the Cal City Substation and the Kramer–Cal City 115 kV Subtransmission Line. See **Figure 3.7-1** for an illustration of the paleontologically sensitive geologic units in the Project vicinity.

TABLE 3.7-1
GEOLOGIC UNITS IN THE PROJECT AREA

Geologic Unit	Rock Type	Paleontological Sensitivity (SVP 2010)
Quaternary young (Holocene) alluvium (Qa)	Alluvium	Low
Quaternary young (Holocene) loose sand (Qs)	Aeolian	Low
Quaternary young (Holocene) clay and silt (Qc)	Clay and Silt	Low
Quaternary young (Holocene) sand-covered clay and silt (Qcs)	Clay and Silt	Low
Quaternary old (Pleistocene) alluvium (Qoa)	Alluvium	High
Miocene Saddleback Basalt (Tsb)	Basalt	None
Miocene Tropico Group (lower) granitic fanglomerate and sandstone (Tif)	Alluvium and Sandstone	High
Cretaceous or Jurassic quartz monzonite (qm)	Quartz Monzonite	None

NOTE: SVP = Society of Vertebrate Paleontology
SOURCE: Rincon 2023

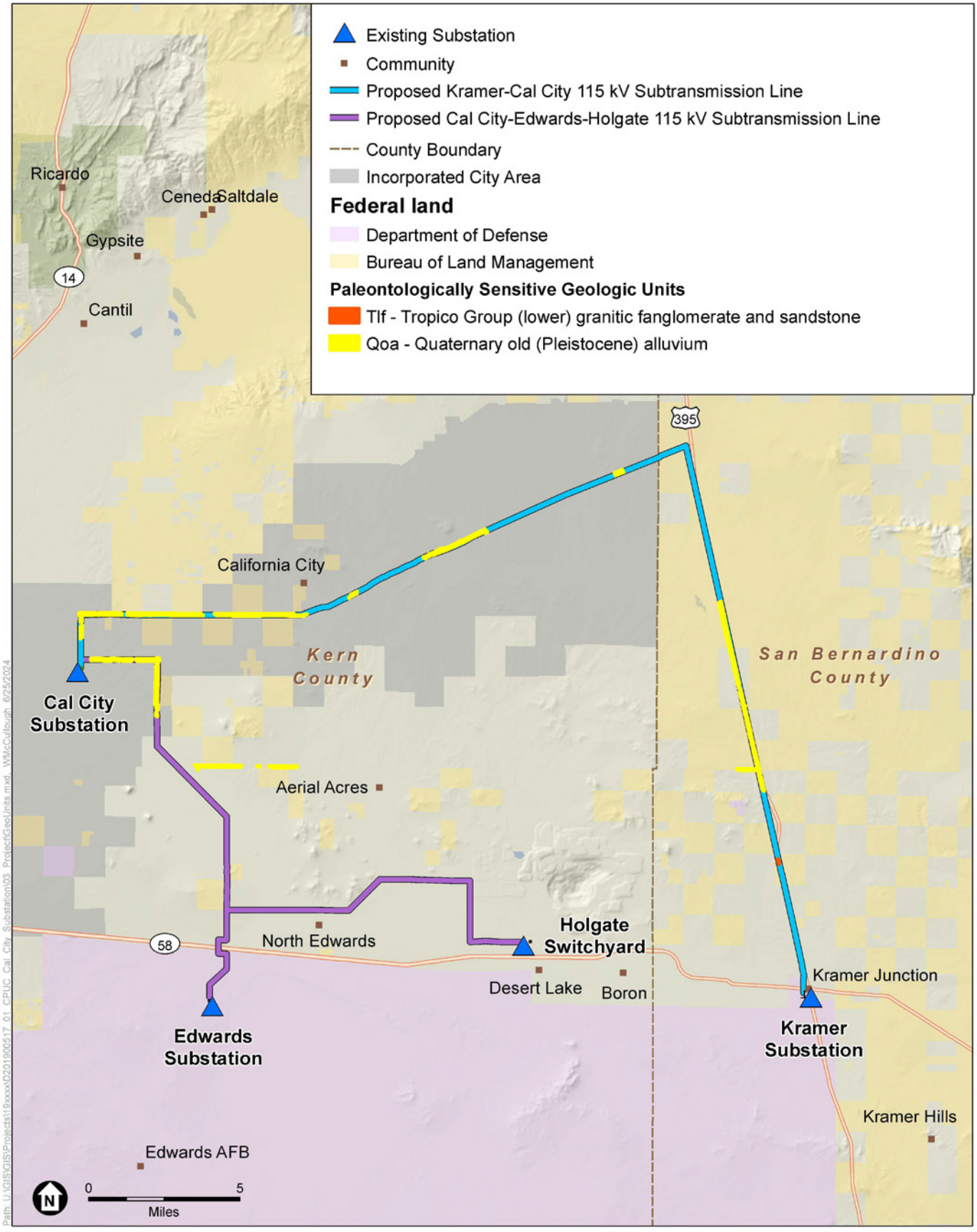
Quaternary Young (Holocene) Alluvium (Qa)

Quaternary young (Holocene)[2] alluvium makes up a considerable part of the Project area. The alluvium consists of alluvial silt, sand, and gravel that is largely undeformed by tectonic activity and undissected by streams. The alluvium is Holocene in age, meaning that it is generally considered too young to preserve scientifically significant paleontological resources and is therefore assigned a low paleontological sensitivity. However, Holocene alluvium may grade into Pleistocene[3] sediments, which are old enough to preserve scientifically relevant paleontological resources, at unknown depths in the subsurface.

1 Quaternary time is from the present to 2.6 million years ago, and Mesozoic time is from 66 million to 252 million years ago. Felsic rocks are silica-rich; plutonic rocks are igneous rocks that cool slowly deep below the ground surface.

2 Holocene time is from the present to 11,700 years ago.

3 Pleistocene time is from 11,700 to 2.6 million years ago.



SOURCES: SCE 2023; USGS 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.7-1
Paleontologically Sensitive Geologic Units

Quaternary Young (Holocene) Loose Sand (Qs)

Quaternary young (Holocene) loose sand is found in the southern part of the Project area and consists of windblown sand that forms dunes or ground cover. Aeolian sediments have produced fossils in the Mojave Desert, but Quaternary young (Holocene) loose sand is Holocene in age and generally considered too young to preserve scientifically significant paleontological resources. Quaternary young (Holocene) loose sand is assigned a low paleontological sensitivity.

Quaternary Young (Holocene) Clay and Silt (Qc)

Quaternary young (Holocene) clay and silt is found in the southern part of the Project area and consists of clay and silt that represent mudflat or playa deposits. The clay and silt surfaces may be flooded by playa lakes in times of heavy rainfall. Playa sediments are known to preserve fossils elsewhere in the Mojave Desert. However, the area represented as Quaternary young (Holocene) clay and silt is identified in the PRTR as an active playa, meaning that it has been flooded within the past few decades; therefore, the surficial sediment is too young to preserve scientifically significant paleontological resources. Quaternary young (Holocene) clay and silt have low paleontological sensitivity.

Quaternary Young (Holocene) Sand-Covered Clay and Silt (Qcs)

Quaternary young (Holocene) sand-covered clay and silt is found in the southern part of the Project area and consists of clay and silt (that represent mudflat or playa deposits) that are partially covered with small piles of windblown sand. Much of the Project area is Quaternary young (Holocene) sand-covered clay and silt that has been identified as "young playa fringe deposits." These surfaces potentially represent shoreline deposits and dunes associated with playas that have not flooded within the past few centuries. Aeolian and playa shoreline deposits have produced fossils within the Mojave Desert, but Quaternary young (Holocene) sand-covered clay and silt is considered Holocene in age, which is too young to preserve scientifically significant paleontological resources. Quaternary young (Holocene) sand-covered clay and silt have low paleontological sensitivity.

Quaternary Old (Pleistocene) Alluvium (Qoa)

Quaternary old (Pleistocene) alluvium covers large sections of the Project area and consists of poorly bedded alluvial gravel, sand, and silt that is composed primarily of granitic and volcanic clasts. Pleistocene alluvial deposits have produced vertebrate fossils throughout California, including in the Mojave Desert and in Kern and San Bernardino counties. Quaternary old (Pleistocene) alluvium has high paleontological sensitivity.

Saddleback Basalt (Tsb)

Saddleback Basalt comprises several small hills in and near the Project area and represents a Pliocene or possibly late Miocene lava flow that is associated with the Tropico Group that includes many Cenozoic[4] sedimentary and igneous units in the western Mojave Desert. Saddleback Basalt is black, massive, and fine-grained; when weathered, it appears brownish black or maroon. Basalt forms by the cooling and solidifying of lava on Earth's surface, a process that would have destroyed

[4] Pliocene time is from 2.6 million to 5.3 million years ago, Miocene time is from 5.3 million to 23 million years ago, and Cenozoic time is from the present to 66 million years ago.

any biological remains and not preserved them as fossils. Therefore, Saddleback Basalt has no paleontological sensitivity.

Tropico Group (Lower) Granitic Fanglomerate and Sandstone (Tif)

The Tropico Group is a series of Cenozoic sedimentary and igneous rocks in the western Mojave Desert consisting of granitic fanglomerate and sandstone that are found in the southeastern part of the Project area. Tropico Group (lower) consists of gray, massive or poorly bedded, subrounded granitic clasts up to 3 feet in diameter. These clasts are embedded in a friable to hard arkosic sandstone (sand and gravel composed mostly of feldspar). The Natural History Museum of Los Angeles and University of California Museum of Paleontology contain records of significant vertebrate fossils from the Tropico Group, but neither specifies the lithology in which those fossils were found. Fanglomerates and sandstone have the potential to preserve fossils, so it is possible that Tropico Group (lower) granitic fanglomerate and sandstone may be fossiliferous. Tropico Group (lower) granitic fanglomerate and sandstone have high paleontological sensitivity.

Quartz Monzonite (qm)

Quartz monzonite covers large portions of the Project area. This plutonic rock is gray-white, massive, and medium to coarse-grained. It is composed largely of quartz and feldspar. Much of the alluvial sediments in the Project area (Quaternary young [Holocene] alluvium, Quaternary old [Pleistocene] alluvium) derive from the composition of quartz monzonite. Within these areas of quartz monzonite, there are pegmatite dikes that are up to 10 feet wide, white, and very coarse-grained. Quartz monzonite is a plutonic rock, meaning that it forms by the cooling of magma beneath Earth's surface. These conditions are not conducive to the preservation of fossils. Quartz monzonite has no paleontological sensitivity.

3.7.1.3 Seismic and Geologic Hazards

Faults and Seismicity

Faults are planar features within Earth's crust that have formed to release strain caused by the dynamic movements of its major tectonic plates. An earthquake on a fault is produced when these strains overcome the inherent strength of Earth's crust and the rock ruptures. The rupture causes seismic waves that propagate through the crust, producing the ground-shaking effect known as an *earthquake*. The rupture also causes variable amounts of slip along the fault, which may or may not be visible at Earth's surface.

Geologists commonly use the age of offset rocks as evidence of fault activity—the younger the displaced rocks, the more recent earthquakes have occurred. To evaluate the likelihood that a fault would produce an earthquake, geologists examine the magnitude and frequency of recorded earthquakes and evidence of past displacement along a fault. The California Geological Survey defines an *active fault* as one that has had surface displacement within Holocene time (within the last 11,700 years); the U.S. Geological Survey uses displacement within the last 15,000 years to define an active fault. A *Quaternary fault* is defined as a fault that has shown evidence of surface displacement during the Quaternary period (the last 2.6 million years) unless direct geologic evidence demonstrates inactivity during the Holocene or longer.

Surface Fault Rupture

The State of California has established "Alquist-Priolo Special Studies Zones" in areas where Holocene faults pose a risk of surface displacement. The Alquist-Priolo Earthquake Fault Zoning Act of 1972 regulates construction and development of buildings intended for human occupancy to avoid rupture hazards from surface faults. Based on the available geologic data, the Project sites and alignments are not in a designated Alquist-Priolo Earthquake Fault Zone (GSI 2022). There are approximately six faults within 10 miles of the Project alignments (see **Figure 3.7-2**). The Project area is not located in and does not cross any Holocene fault zones. The closest Holocene fault to the Project is the Garlock Fault. The Garlock Fault is 160 miles long and runs north to west of the Project's proposed Kramer–Cal City 115 kV Subtransmission Line alignment. At its closest point to the Project, the Garlock Fault is approximately 8 miles to the northwest. The San Andreas Fault is approximately 32 miles southwest of the Edwards Substation (GSI 2022).

Seismic Ground Shaking

Several factors influence how ground motion interacts with structures, making the impact hazard of ground shaking difficult to predict. Seismic waves propagating through Earth's crust are responsible for the ground vibrations normally felt during an earthquake. Seismic waves can vibrate in any direction and at different frequencies, depending on the frequency content of the earthquake, its rupture mechanism, the distance from the seismic epicenter, and the path and material through which the waves are propagating. Based on the regional geologic maps and the subsurface investigation conducted for the Project, the Site Classification for the Project area, as defined in Section 1613.2.2 of the California Building Code (CBC), may be considered to be a Site Class D, Stiff Soil Profile (GSI 2022). Stiffer soils generally experience less ground acceleration from seismic ground shaking.

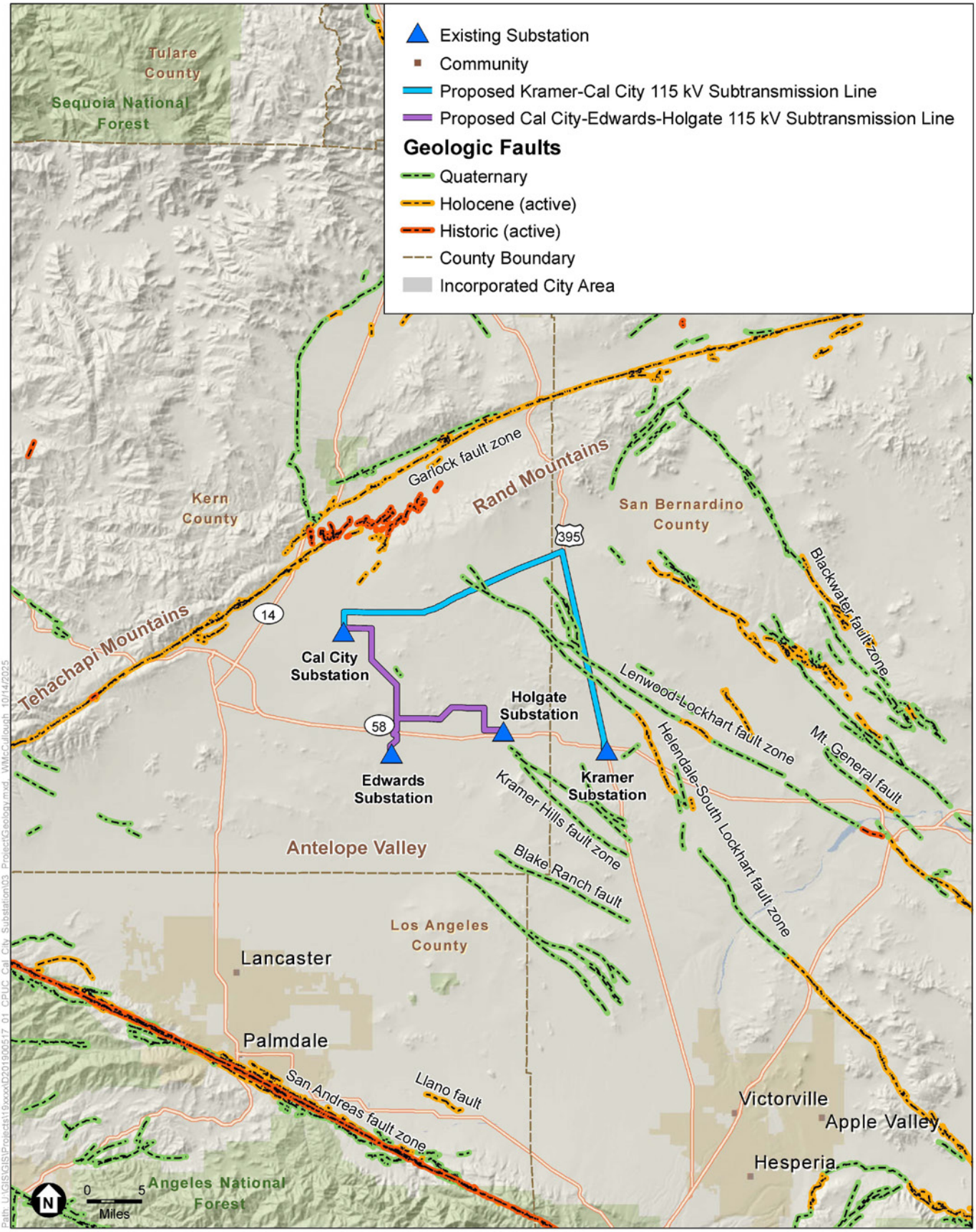
Liquefaction

Liquefaction occurs where strong ground motions produce a rise in pore-water pressures that in turn causes granular material to briefly lose strength and liquefy. This can lead to settlement, lateral spreading, and damage to structures, even in areas of flat topography. Ground motions have the potential to trigger liquefaction in areas of unconsolidated granular sediment and shallow groundwater. The risk of liquefaction is highest in areas with high predicted ground motions, unconsolidated sediments, and shallow groundwater.

Parts of Kern County and San Bernardino County may be subject to liquefaction during a seismic event because of high groundwater. Groundwater was not encountered during geotechnical borings conducted at the Cal City Substation to depths of 50 feet. Based on the nearest state well located about 1 mile north of the Cal City Substation, the depth to groundwater was 250 feet in 2010 (GSI 2022). Other well readings in the Project area indicate that depth to groundwater is between 100 and 400 feet (USGS 2024a).

Landslides

Landslides typically occur on moderate to steep slopes when masses of rock or earth move down a slope. Landslides can be caused by natural events (e.g., rainfall, earthquakes, and soil erosion) or human activities (e.g., grading) that can result in unstable fill slopes or excessive cuts. Important factors that affect slope stability include the steepness of the slope and the strength of rock or soil



SOURCES: SCE 2023; USGS 2020

Cal City Substation 115 kV Upgrade Project

Figure 3.7-2
Active Faults and Geologic Features

materials. Topography in the area consists of gently sloping alluvial plains with a series of steep rock buttes and several arroyos. No records of major historical landslides were found along the Project alignments; the closest historical landslide was approximately 30 miles to the west (CGS 2024).

Soil Erosion

The U.S. Natural Resources Conservation Service has developed a rating, known as the *erodibility factor* or *K-factor*, to evaluate the susceptibility of soils to erosion by water. The soil-erodibility factor (K) represents (1) the susceptibility of soil or surface material to erosion, (2) the transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition (State Water Board 2024). K-factor ratings are numbered 0.00 through 0.65, with 0.00 to 0.25 being considered low, 0.25 to 0.45 being moderate, and 0.45 to 0.65 being high. The soils along the Project alignments typically have low to moderate K-factor ratings and fall between 0.11 and 0.35 (State Water Board 2024).

Wind erosion is similarly most prevalent in silty and fine sandy soils with sparse vegetation. Dust storms associated with wind erosion are identified as a hazard in Kern County (Kern County 2009). Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion. Wind erodibility is rated on a scale of 0 to 310, with 0 being soils that are not susceptible to wind erosion due to coarse fragments or wetness and 310 being soils that are made up of very fine sand, fine sand, sand, or coarse sand that are highly susceptible to wind erosion (NRCS 2002). Sands of different textures vary from 160 to 310 but are often found together, so it assumed that soils made up of these groups are somewhere within the range of 160 to 310. Soils found along the Project alignments typically have medium to high wind erodibility ratings, with the majority of soils along the Project alignments having a wind erodibility rating of 86 (NRCS 2024).

Collapsible Soils

As defined by the U.S. Bureau of Reclamation, *collapsible soils* are any unsaturated soil that goes through a radical rearrangement of particles and great decrease in volume upon wetting, additional loading, or both (Reclamation 1992). Collapse occurs as water enters the pores between the individual sand and silt grains and weakens the “bonding” of the clays or other binding agents. Overburden or applied weight causes soil particles to slide across one another (shear), filling voids and resulting in a reduction in the overall volume of the soil (NRCS 2004). Soils susceptible to collapse typically contain a large amount of void space, low bulk density, geologically young age, clay content of less than 30 percent, and a large percentage of pore space in the range of 40–60 percent. Local soils could be subject to collapse.

Expansive Soils

An *expansive soil* is any soil that is prone to large volume changes (shrinking and swelling) directly related to changing moisture conditions. The swelling capacity can cause heaving or lifting of structures while shrinkage can cause differential settlement. *Linear extensibility percent* is the linear expression of the volume difference of natural soil. The linear extensibility is considered to be higher in soils with high levels of clay, which is typical of Hydrologic Group D (NRCS 2024). Soils at the Cal City Substation are primarily granular with an expansion index of 7, which is considered very low (GSI 2022). Linear extensibility percent has not been characterized

for the rest of the Project area; however, soils classified as Hydrologic Group D are present throughout the Project area (see **Table 3.7-2**). Therefore, expansive soil could be present within the Project area (GSI 2022).

TABLE 3.7-2
MAPPED SOIL UNITS AND SOIL PROPERTIES

Alignment Map Unit Symbol	National Map Unit Symbol	Map Unit Name	Hydrologic Group	Wind Erodibility Index (T/Ac/Yr)[1]	Slope Percent	Stability Concerns[2]
Proposed Kramer–Cal City 115 kV Subtransmission Line						
136	hhg8	Norob sandy loam	C	86	2–5	None
100	hkmf	Alko-Neuralia sandy loams	D	86	0–9	Potentially Expansive
104	hkmk	Arizo gravelly loamy sand	A	86	2–9	None
114	hkmw	Cajon loamy sand	A	86	0–5	None
151	hkp2	Muroc-Randsburg sandy loams	D	86	5–9	Potentially Expansive
154	hkp5	Neuralia sandy loam	C	86	2–5	None
137	hknm	Garlock loamy sand	C	86	2–9	None
136	hhgb	Norob complex	C	86	0–5	None
Proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line						
137	hhf3	Helendale loamy sand	A	134	0–2	None
100	hkmf	Alko-Neuralia sandy loams	D	86	0–9	None
114	hkmw	Cajon loamy sand	A	86	0–5	None
154	hkp5	Neuralia sandy loam	C	86	2–5	None
171	hkpq	Rosamond clay loam	C	86	0–2	None
137	hknm	Garlock loamy sand	C	86	2–9	None
116	hkmy	Cajon gravelly loamy sand	A	134	0–9	None
155	hkp6	Norob-Neuralia complex	C	160–310	0–5	Highly Erodible
167	hkpl	Randsburg sandy loam	D	86	2–15	Potentially Expansive
184	hkq4	Torrifluvents-Cajon complex	A	134	0	None
185	hkq5	Torriorthents-Rock outcrop complex	None	0	50–75	None

NOTES: kV = kilovolts; T/Ac/Yr = tons per acre per year

1. Mass in tons of soil moved per unit area (acre) per year.
2. Stability concerns include soils that have properties prone to erosion, liquefaction, and differential settling.

SOURCES: NRCS 2002, 2024

Subsidence

Subsidence is most often caused by the withdrawal of large volumes of fluids (groundwater or crude oil) from underground reservoirs, but it can also occur by the addition of surface water to certain types of soils. Subsidence has been previously recorded within San Bernardino County; however, none of those recordings have been reported in the vicinity of the Project alignments

(Kern County 2009). Kern County has four types of subsidence-prone areas: tectonic subsidence, subsidence caused by the extraction of oil and gas, subsidence caused by withdrawal of groundwater, and subsidence caused by hydro-compaction of moisture. The Project area is not located within any of these areas (USGS 2024b).

Soils

The soil types along the Project alignments are listed in Table 3.7-2. The table also documents selected soil properties, including hydrologic group, wind erodibility, and slope percent. The *hydrologic group classification* is a measure of infiltration rate and runoff potential. Group A soils have the highest infiltration rates and lowest runoff potentials; they are typically coarse-grained and deep. Conversely, Group D soils have the lowest infiltration rates and highest runoff potential; they are typically fine-grained and shallow, or in areas with high water tables. Groups B and C are intermediate. Soils along the Project alignments are classified as A, C, and D, with the most common of these being C.

3.7.2 Regulatory Setting

3.7.2.1 Federal

Clean Water Act

The federal Clean Water Act (CWA) and subsequent amendments, under the enforcement authority of the U.S. Environmental Protection Agency, were enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The purpose of the CWA is to protect and maintain the quality and integrity of the nation's waters by requiring states to develop and implement state water plans and policies. The CWA gave the U.S. Environmental Protection Agency the authority to implement pollution control programs such as setting wastewater standards for industry.

The CWA also sets water quality standards for surface waters and established the National Pollutant Discharge Elimination System (NPDES) program to protect water quality through various sections of the CWA, including Sections 401–404 and 303(d). In California, implementation and enforcement of the NPDES program is conducted through the State Water Resources Control Board (State Water Board) and the nine regional water quality control boards (RWQCBs). Section 402 of the CWA would apply to the Project because construction at the Project sites would be required to control discharges of pollutants from point sources, as discussed below.

National Earthquake Hazards Reduction Act of 1977

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) created the National Earthquake Hazards Reduction Program (NEHRP), establishing a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic events. Four federal agencies are responsible for coordinating activities under the NEHRP: the U.S. Geological Survey, National Science Foundation, Federal Emergency Management Agency, and National Institute of Standards and Technology. Since its inception, the NEHRP has shifted

its focus from earthquake prediction to hazard reduction. The current program objectives are as follows (FEMA 2021):

- Improve understanding of earthquake processes and impacts.
- Develop cost-effective measures to reduce earthquake impacts on individuals, the built environment, and society at large.
- Improve the earthquake resilience of communities nationwide.

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) (U.S. Code Title 43, Sections 1701–1782) requires that public lands be managed in a manner that will protect the quality of their scientific values. Specifically, the FLPMA was established as a public land policy to "provide for the management, protection, development, and enhancement of the public lands." The FLPMA requires federal agencies to manage public lands so that environmental, historic, archaeological, and scientific resources are preserved and protected, where appropriate. Although the FLPMA does not refer specifically to fossils, the law does protect scientific resources such as significant fossils, including vertebrate remains. FLPMA regulates the "use and development of public lands and resources through easements, licenses, and permits." The law requires the public lands to be inventoried so that the data can be used to make informed land-use decisions, and requires permits for the use, occupancy, and development of the certain public lands, including the collection of significant fossils for scientific purposes (U.S. Code Title 43, 1711).

Code of Federal Regulations Title 43

Under Code of Federal Regulations Title 43, Sections 8365.1 through 8365.5 (43 CFR 8365.1–8365.5), the collection of scientific and paleontological resources, including vertebrate fossils, on federal land is prohibited. The collection of a "reasonable amount" of common invertebrate or plant fossils for noncommercial purposes is permissible (43 CFR 8365.1–8365.5).

Paleontological Resources Preservation Act of 2009

The Paleontological Resources Preservation Act is part of the Omnibus Public Land Management Act of 2009 (Public Law 111-011, Subtitle D). This law directs the Secretary of the Interior or the Secretary of Agriculture to manage and protect paleontological resources on federal land and to develop plans for inventorying, monitoring, and deriving the scientific and educational use of such resources. It prohibits removing paleontological resources from federal land without a permit, establishes penalties for violation of the law, and creates a program to increase public awareness about these resources. A paleontological resource use permit is required to collect paleontological resources of scientific interest. The law requires that paleontological resources collected under a permit remain United States property, preserved for the public in an approved repository, and available for scientific research and public education. It also requires that the nature and location of paleontological resources on public lands remain confidential as a means of protecting the

resources from theft and vandalism. Section 6301 of the Paleontological Resources Preservation Act and Departmental Proposed Rule at 43 CFR Part 49 define a paleontological resource as:

> *Any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth, except that the term does not include—(A) any materials associated with an archaeological resource … (B) any cultural item … (3) Resources determined in writing by the authorized officer to lack paleontological interest or not provide information about the history of life on earth, based on scientific and other management considerations.*

Consistent with the definition of a paleontological resource under the Paleontological Resources Preservation Act, those paleontological resources that lack scientific interest (e.g., resources that are ubiquitous or do not provide information about the history of life on Earth) are considered scientifically non-significant fossils.

Omnibus Public Lands Act

The Omnibus Public Lands Act (OPLA) directs the Secretaries of Interior and Agriculture to manage and protect paleontological resources on federal land using "scientific principles and expertise." The OPLA incorporates most of the recommendations of the report of the Secretary of the Interior titled *Assessment of Fossil Management on Federal and Indian Lands* (2000) to formulate a consistent paleontological resources management framework. In enacting the OPLA, Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. Title VI, Subtitle D on Paleontological Resources Preservation (OPLA-PRP) codifies existing policies of federal agencies and provides the following:

- Uniform criminal and civil penalties for illegal sale and transport, and theft and vandalism of fossils from federal lands.
- Uniform minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants).
- Uniform definitions for "paleontological resources" and "casual collecting."
- Uniform requirements for curation of federal fossils in approved repositories.

Federal legislative protections for scientifically significant fossils apply to projects that take place on federal lands (with certain exceptions such as for U.S. Department of Defense projects), involve federal funding, require a federal permit, or involve crossing state lines. Because a portion of the Project area is located on federal agency–managed lands, federal protections for paleontological resources for those areas apply under the National Environmental Policy Act (NEPA), the FLPMA, and the OPLA-PRP. All paleontological work on federal agency lands must be approved and coordinated by the federal agency. All fossils collected from federal agency lands must be housed in a federally approved paleontological repository. The paleontological repository would be determined following NEPA lead agency coordination and the issuance of applicable permits for the Project.

3.7.2.2 State

California Public Utilities Commission General Order 95

CPUC's Electric Safety and Reliability Branch has jurisdiction over the safety of overhead and underground electric and communications line construction of all investor-owned utilities, co-ops, and municipalities. CPUC General Order 95, *Rules for Overhead Line Construction*, provides general standards for the design, construction, and maintenance of overhead electrical supply and communication facilities under CPUC jurisdiction. "Facilities" includes power lines, service drop lines, conductors, towers, poles, and other structures.

California Building Code

The Project would be subject to the applicable sections of CBC Title 24, Part 2, which is administered by the California Building Standards Commission. Under state law, all building standards must be centralized in Title 24 to be enforceable. The CBC contains necessary California amendments, which are based on American Society of Civil Engineers/Structural Engineering Institute Standards. These standards provide requirements for general structural design and include means for determining earthquake loads, as well as other loads for inclusion into building codes. The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a seismic design category for a project. Once a project is categorized according to a seismic design category, design specifications can be determined. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure—or any appurtenances connected or attached to such buildings or structures—throughout California.

California Division of Occupational Safety and Health

In accordance with California Division of Occupational Safety and Health (Cal/OSHA) regulations pertaining to temporary shoring (California Code of Regulations Title 8, Sections 1539–1543), excavations at project sites are required to be supported by conventional shoring methods such as soldier piles and lagging in order to prevent the excavation sidewalls from becoming unstable during construction.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was enacted in 1972 to protect structures for human occupancy from the hazard of surface faulting. In accordance with the act, the State Geologist has established regulatory zones called *earthquake fault zones* around the surface traces of active faults and has published maps showing these zones. Buildings for human occupancy cannot be constructed across surface traces of faults that are determined to be active. Because many active faults are complex and consist of more than one branch that may experience ground surface rupture, earthquake fault zones extend approximately 200–500 feet on either side of the mapped fault trace.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (California Public Resources Code Chapter 7.8, Sections 2690–2699.6) directs the California Geological Survey to identify and map areas prone

to liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of this program is to minimize the loss of life and property through the identification, evaluation, and mitigation of seismic hazards. Seismic Hazard Zone Maps that identify Zones of Required Investigation have been generated as a result of the program. Counties and cities are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes. The Project is in an area that has not yet been mapped as part of the Seismic Hazards Mapping Act.

National Pollutant Discharge Elimination System Construction General Permit

Construction associated with projects that would disturb more than 1 acre of land surface affecting the quality of stormwater discharges into waters of the United States are subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2022-0057-DWQ, NPDES No. CAS000002), also known as the Construction General Permit. The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to waters of the United States from construction sites that disturb 1 acre or more of land surface, or that are part of a common plan of development or sale that disturbs more than 1 acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

The Construction General Permit requires that construction sites be assigned a Risk Level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and on the risk to receiving waters during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could potentially be discharged to receiving water bodies and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving-waters risk level reflects the risk to the receiving waters from the sediment discharge. Depending on the risk level, the construction projects could be subject to the following requirements:

- Effluent standards
- Good site management “housekeeping”
- Non-stormwater management
- Erosion and sediment controls
- Run-on and runoff controls
- Inspection, maintenance, and repair
- Monitoring and reporting requirements

The Construction General Permit requires the development and implementation of a storm water pollution prevention plan (SWPPP) that includes specific best management practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management and good housekeeping, and are intended to protect surface water quality by preventing eroded soil and construction-related pollutants from migrating off-site. The Construction General Permit requires routine inspection of all BMPs. In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the CWA Section 303(d) list for sediment.

The SWPPP must be prepared before construction begins. The SWPPP must contain a site map(s) that delineates the construction work area, existing and proposed buildings, parcel boundaries, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project area. The SWPPP must list BMPs and the placement of those BMPs that the applicant would use to protect stormwater runoff. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented should any BMPs fail; and a sediment monitoring plan if the site discharges directly to a water body listed on the CWA Section 303(d) list for sediment. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as a silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations and vehicle and equipment washing and fueling. The Construction General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site after construction).

In the Project area, the Construction General Permit is implemented and enforced by the Lahontan RWQCB, which administers the stormwater permitting program. Dischargers must electronically submit a notice of intent and permit registration documents to obtain coverage under this Construction General Permit. Dischargers are to notify the Lahontan RWQCB of violations or incidents of noncompliance and submit annual reports that identify deficiencies in the BMPs and explain how the deficiencies were corrected. The risk assessment and SWPPP must be prepared by a State Qualified SWPPP Developer and implementation of the SWPPP must be overseen by a State Qualified SWPPP Practitioner. A legally responsible person, who is legally authorized to sign and certify permit registration documents, is responsible for obtaining coverage under the permit.

California Environmental Quality Act

CEQA requires that public agencies and private interests identify the potential environmental consequences of their projects on any object or site of significance to the scientific annals of California (Division I, California Public Resources Code Section 5020.1[b]). Appendix G of the CEQA Guidelines provides an Environmental Checklist of questions that includes the following: "Would the project directly or indirectly destroy a unique paleontological resource or site?"

CEQA does not define a "unique paleontological resource or site." However, the Society of Vertebrate Paleontology (SVP) has provided guidance specifically designed to support state and federal environmental review. The SVP broadly defines *significant paleontological resources* as follows (SVP 2010):

> *[F]ossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).*

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, or diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve researchers' understanding of paleochronology, paleoecology, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well-represented lineages can be equally important for studying evolutionary pattern and process, and evolutionary rates. Even unidentifiable material can provide useful data for dating geologic units if radiocarbon dating is possible. As such, common fossils (especially vertebrates) may be scientifically important, and therefore considered significant.

California Public Resources Code Section 5097.5

Public Resources Code Section 5097.5 states:

> *No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological, or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.*

As used in Section 5097.5, *public lands* means lands owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with Public Resources Code Section 5097.5 for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits) undertaken by others.

3.7.2.3 Local

CPUC has sole and exclusive state jurisdiction over the siting and design of the Project. Pursuant to CPUC General Order 131-D, Section XIV.B, local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters.

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but county and city regulations are not applicable to the Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

Kern County Municipal Code

Kern County Municipal Code Section 17.28 sets forth guidance and regulations for grading and including rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction. Section 17.28.040, *Permits Required*, states that no person shall do any grading or cause the same to be done without

first having obtained a grading permit from the building official, unless grading is specified as exempt. Excavations for utilities are considered exempt under Section 17.28.040.

Kern County General Plan

The Land Use, Open Space, and Conservation Element of the Kern County General Plan contains the following policy related to paleontological resources:

> ***Policy 25:*** The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Section 4.3 of the Safety Element contains the following policy related to geology and soils:

> ***Policy 1:*** The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

Section 4.5 of the Safety Element of the Kern County General Plan contains the following policies related to geology and soils:

> ***Policy 1:*** Determine the liquefaction potential at sites in areas of shallow groundwater (Map Code 2.3) prior to discretionary development and determine specific mitigation to be incorporated into the foundation design, as necessary, to prevent or reduce damage from liquefaction in an earthquake.
>
> ***Policy 2:*** Route major lifeline installations around potential areas of liquefaction or otherwise protect them against significant damage from liquefaction in an earthquake.
>
> ***Policy 3:*** Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

San Bernardino County Municipal Code

San Bernardino County Municipal Code Section 88.02, *Soil and Water Conservation*, establishes uniform standards and processes for regulating ground-disturbing development to help ensure the conservation of soil, water, and other valuable natural resources; reduce erosion and maintain soil productivity; maintain healthy environments and air quality; and guide the planning and evaluation of proposed development.

Section 88.02.030, *Exempt Activities*, exempts road construction and maintenance projects and installation of utilities from compliance with Section 88.02, but it requires such projects to comply with General Erosion Control Requirements. These projects must also comply with plans and procedures approved by the Director of Public Works; provided that adequate measures, consistent with the intent of Chapter 88, have been taken to control erosion and the flow of sediment into lakes, streams, and drainage.

San Bernardino Countywide Policy Plan

The San Bernardino Countywide Policy Plan's Hazards Element contains the following policies related to geology and soils:

> ***Policy HZ-1.2:*** We require all new development to be located outside of the environmental hazard areas listed below. For any lot or parcel that does not have

sufficient buildable area outside of such hazard areas, we require adequate mitigation, including designs that allow occupants to shelter in place and to have sufficient time to evacuate during times of extreme weather and natural disasters. (1) Flood: 100-year flood zone, dam/basin inundation area. (2) Geologic: Alquist-Priolo earthquake fault zone; County-identified fault zone; rockfall/debris-flow hazard area, medium or high liquefaction area (low to high and localized), existing and County-identified landslide area, moderate to high landslide susceptibility area). (3) Fire: high or very high fire hazard severity zone.

Policy HZ-1.8: Wind erosion hazards. We require new development in medium-high or high wind erosion hazard areas to minimize the effects of wind-blown soil through building and site design features such as fencing, surface treatment or pavement, attenuation or wind barriers, architectural features, building materials, and drought resistant landscaping.

Policy HZ-1.9: Hazard areas maintained as open space. We minimize risk associated with flood, geologic, and fire hazard zones or areas by encouraging such areas to be preserved and maintained as open space.

The San Bernardino Countywide Policy Plan's Cultural Resources Element contains the following policy related to paleontological resources:

Policy CR-2.3: Paleontological and Archaeological Resources. We strive to protect paleontological and archaeological resources from loss or destruction by requiring that new development include appropriate mitigation to preserve the quality and integrity of these resources. We require new development to avoid paleontological and archeological resources whenever possible. If avoidance is not possible, we require the salvage and preservation of paleontological and archeological resources.

City of California City General Plan

The Geologic and Seismic Hazards section of the City of California City General Plan contains the following policies and implementation measures related to geology and soils:

- Development shall be prohibited in areas where measures to correct identified geologic or seismic hazard are not feasible.
- Structures designated for command control of emergency/disaster services shall be designed to withstand a "maximum probable seismic event" and to remain operational after a seismic event.
- Structures utilized for emergency services, schools and future hospitals shall be designed to protect human life to the highest degree possible during a "maximum probable seismic event."
- Minimize the potential damage to structures and loss of life that could result from earthquakes.
- Safety measures required by the Uniform Building Code for Seismic Zone 4 for construction of new buildings are hereby incorporated by reference.

Implementation Measure S-1. The City shall require that all new development be subject to a preliminary geotechnical report to identify potentially hazardous geologic and soils conditions including the potential for seismic hazards. If the preliminary geologic report

indicates that geologic or soils conditions could be unstable, a geotechnical investigation shall be prepared indicating the suitability of any proposed or additional development on the site and any corrective action needed to prevent structural defects or ground failure. The geotechnical investigation shall analyze seismic hazards; geologic hazards; depth to groundwater; soil conditions (texture, consistency, structure, permeability, shrink-swell potential, strength); and the percentage of slopes and the potential for landslides.

3.7.3 Applicant Proposed Measures and Best Management Practices

3.7.3.1 Applicant Proposed Measures

Southern California Edison (SCE) has identified the following Applicant proposed measures (APMs) to minimize impacts on geology, soils, and paleontology from the Project. The impact analysis assumes that these APMs would be implemented (i.e., part of the Project) to reduce impacts related to geology, soils, and paleontology as discussed below.

- **APM PAL-1: Develop Paleontological Resource Mitigation and Monitoring Plan.** SCE shall prepare a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) to guide all paleontological management activities during project construction. The PRMMP shall be submitted to the CPUC and BLM for review and approval at least 90 days prior to the start of construction. The PRMMP shall be prepared by a qualified paleontologist, based on SVP (2010) guidelines, and meet all regulatory requirements. The qualified paleontologist shall have a master's degree or Ph.D. in paleontology, have local paleontology knowledge, and shall be familiar with paleontological procedures and techniques. The PRMMP will include, but not be limited to, the following sections:
  - Paleontological Resource Monitoring and Reporting: Detail monitoring procedures and methodologies, which shall require a qualified paleontological monitor for all construction-related ground disturbance that reach approximate depths for significant paleontological resources in sediments with a high paleontological sensitivity (i.e., Quaternary older alluvium and Tropico Group [lower], granitic fanglomerate and sandstone). Sediments with no (i.e., Saddleback Basalt and quartz monzonite) will not require monitoring. Paleontological monitors shall meet standard qualifications per the SVP (2010).
  - Unanticipated Discovery Protocol: Detail procedures for temporarily halting construction, defining work stoppage zones, notifying stakeholders, and assessing the paleontological find for scientific significance. If indicators of potential microvertebrate fossils are found, screening of a test sample shall be carried out as outlined in SVP (2010).
  - Data Analysis and Reporting: Detail methods for data recovery, analysis in a regional context, reporting of results within one year of completion of field studies, curation of all fossil specimens in an accredited museum repository approved by the CPUC and BLM and dissemination of reports to appropriate repositories.
- **APM PAL-2: Train Construction Personnel.** Prior to the initiation of construction, all construction personnel shall be trained, regarding the recognition of possible buried paleontological resources (i.e., fossils) and protection of all paleontological resources during construction. Training shall inform all construction personnel of the procedures to be followed upon the discovery of paleontological materials. All personnel shall be instructed

that unauthorized removal or collection of fossils is a violation of Federal and state laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend a Worker's Environmental Awareness Training Program (WEAP). The WEAP will include the project's potential for inadvertently exposing buried paleontological resources, how to operate adjacent to and avoid any potential Environmentally Sensitive Area, and procedures to treat unanticipated discoveries.

- **APM PAL-3: Conduct Paleontology Resources Construction Monitoring.** Paleontological monitoring shall be conducted by a qualified paleontologist familiar with the types of resources that could occur within the project area. Monitoring reports shall be submitted to the CPUC and BLM on a monthly basis.

3.7.3.2 Best Management Practices

SCE has also proposed the implementation of BMPs that are based on the California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook*. The BMPs listed below are considered part of the Project for the purposes of this CEQA analysis.

- **BMP WE-1, Wind Erosion Control.** The construction team will apply water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.
- **BMP EC-1, Scheduling.** The construction team shall reduce the discharge of pollutants to storm drain facilities caused by construction activities by scheduling activities in a manner that will limit exposure of disturbed soils to wind, rain, non-storm water run-off, and storm water run-on and run-off.
- **BMP EC-2, Preservation of Existing Vegetation.** The construction team will protect and preserve existing vegetation in work areas as long as practicable before disturbing them. The construction team shall also preserve and protect existing vegetation adjacent to work areas. This protection and preservation of such vegetation will serve to control erosion and filter out sediment.
- **BMP EC-3, Hydraulic Mulch.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.
- **BMP EC-4, Hydroseeding.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.
- **BMP EC-5, Soil Binders.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring short term temporary protection. Because soil binders can often be incorporated into the work, they are a good alternative to mulches in areas where grading activities will soon resume. Soil binders are also suitable for use on stockpiles. Non-toxic soil binders, equivalent or better in efficiencies than the California Air Resources Board (CARB)-approved soil binders, shall be applied per the manufacturer recommendations to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions. Soil binders will be non-toxic and MSDS will be present at site.

- **BMP EC-6, Straw Mulch.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Straw mulch will be certified weed free.
- **BMP EC-7, Geotextiles and Mats.** The construction team will implement one or more of these measures to stabilize disturbed soil areas (stockpiles, slopes, embankments, conveyances, etc.) and protect these soils from erosion by rain, wind or storm water run-on and run-off where applicable to reduce soil erosion from wind and rain. Plastic micro-filament matting will not be used, only natural fiber mats to prevent trapping of birds and reptiles.
- **BMP EC-8, Wood Mulch.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Wood mulch shall be untreated.
- **BMP EC-15, Soil Preparation and Roughening.** The construction team will implement this BMP to assess and prepare surface soils for other BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.
- **BMP EC-16, Non-Vegetative Stabilization.** The construction team will utilize non-vegetative stabilization methods for temporary or permanent stabilization of areas prone to erosion; this would be used only where vegetative options are not feasible.
- **BMP SE-4, Check Dam.** The construction team will implement this BMP to reduce scour and channel erosion by reducing flow velocity and increasing residence time within the channel, allowing sediment to settle.
- **BMP SE-5, Fiber Rolls.** The construction team will implement this BMP to eliminate the erosion of slopes. The rolls are widely used to prevent sediment from running off site.
- **BMP SE-6, Gravel Bag Berm.** The construction team will implement this BMP to eliminate erosion of slopes. This BMP is particularly useful with steep slopes and a high potential for runoff.
- **BMP SE-7, Street Sweeping and Vacuuming.** The construction team will implement this BMP when soils and miscellaneous debris are tracked from the construction site to areas outside the site. This measure prevents sediments from reaching the drop inlets and stormwater system and prevents unsafe driving conditions.
- **BMP SE-10, Storm Drain Inlet Protection.** The construction team will implement this BMP if any runoff from the construction site drains directly into a drop inlet. The protection will prevent debris and soils from clogging drop inlets and storm drain systems.
- **BMP TC-1, Stabilized Construction.** The construction team will implement this BMP to remove all construction site soil and miscellaneous debris prior to leaving the site. The BMP will depend on the soil, site, and type of surface outside the staging area.
- **BMP TC-2, Stabilized Construction Roadway.** A stabilized construction roadway is a temporary access road. It is designed for the control of dust and erosion created by vehicular tracking.

- **BMP WM-7, Contaminated Soil Management.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting preconstruction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

3.7.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to geology and soils if it would:

a) Directly or indirectly cause 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; or

   iv) Landslides;

b) Result in substantial soil erosion or the loss of topsoil;

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[5] creating substantial direct or indirect risks to life or property;

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water; or

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

3.7.5 Direct and Indirect Effects

3.7.5.1 Approach to the Analysis

This environmental analysis of potential impacts related to geology, soils, and paleontological resources from construction, operation, and maintenance of the Project is based on the following:

- A review of the results of the site-specific preliminary geotechnical investigation of the Cal City Substation.
- A review of literature and database research (geologic, seismic, soils, and paleontological resources reports and maps).
- The paleontological resources investigation for the entire Project area.

[5] Criterion d) references expansive soil, as defined in Table 18-1-B of the CBC, but the CBC no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils.

- General plans for Kern County, San Bernardino County, and the City of California City.
- Information regarding proposed construction details, potential uses, and associated operations of the Project as described in Chapter 2, *Project Description*.

The Project would be regulated by the laws, regulations, and policies summarized in Section 3.7.2, *Regulatory Setting*. This analysis assumes, consistent with the APMs and BMPs described in Section 3.7.3, *Applicant Proposed Measures and Best Management Practices*, that the Project would comply with applicable federal, state, and local laws and regulations. This analysis also assumes that federal, state, and local agencies would continue to enforce applicable requirements to the extent that they do so now. Compliance with many of the regulations is an independently enforceable condition of permit approvals.

After considering implementation of the Project described in Chapter 2, *Project Description*, and compliance with regulatory requirements, the following environmental analysis identifies whether the Project would exceed the defined significance thresholds and whether a significant impact would occur.

The structural elements of the Project would undergo appropriate design-level geotechnical evaluations before final design and construction. Implementing the regulatory requirements in CPUC General Order 95, the CBC, and local ordinances, and ensuring that all buildings and structures are constructed in compliance with the law would be the responsibility of the Project engineers and building officials. The geotechnical engineer, as a registered professional with the State of California, would be required to comply with CPUC General Order 95, the CBC, and local codes while applying standard engineering practices and the appropriate standard of care for the particular region in California, which for this Project consists of Kern and San Bernardino counties. The California Professional Engineers Act (Building and Professions Code Sections 6700–6799) and the Codes of Professional Conduct, as administered by the California Board of Professional Engineers and Land Surveyors, provide the basis for regulating and enforcing engineering practices in California. The local building officials, typically with the local jurisdiction, are responsible for conducting inspections and ensuring compliance with CPUC General Order 95, the CBC, and local codes before approval of the building permit.

3.7.5.2 Direct and Indirect Effects of the Project

Criterion a.i) Whether the Project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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.

The Project would result in no impact regarding rupture of a known earthquake fault. *(No Impact)*

Construction, operation, and maintenance of the Project components would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving

rupture of a known active 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. As discussed in Section 3.7.2, *Environmental Setting*, the Project components would not be located on a known active earthquake fault or in an Alquist-Priolo Earthquake Fault Zone, and the faults located in or near the Project area are not considered to be Holocene active.

Criteria a.ii) and a.iii) Whether the Project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking, seismic-related ground failure, including liquefaction.

Impact 3.7-1: The Project would be subject to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading. (*Less than Significant*)

The Project would be subject to moderate to severe seismic ground shaking because of the relatively close proximity of two seismically active fault zones. Ground shaking could result in damage to the Project through seismic shaking or seismically induced ground failure. As stated in the geotechnical investigative report conducted for the Project, groundwater in the area of the Cal City Substation is approximately 250 feet below the surface, which would minimize the risk of liquefaction. Although the groundwater level is expected to be at a similar depth in the vicinity of the other Project components, there are no readily available data to confirm that assertion.

As discussed in 3.7.1, *Environmental Setting*, a geotechnical investigation was conducted for the Cal City Substation upgrade component of the Project. Although the Cal City Substation site, the other Project substations and switching station sites, and the proposed subtransmission line facility sites may be subject to moderate to severe ground shaking, the risk of other seismic hazards at these sites is expected to be relatively low. However, the Project would be subject to the seismic design criteria of CPUC General Order 95, the CBC, and local building codes, which require that all improvements be constructed to withstand anticipated ground shaking from regional fault sources. CPUC General Order 95, CBC, and local code regulations (see Section 3.7.2, *Regulatory Setting*) would require SCE to retain a licensed geotechnical engineer to design the Project components to resist damage from seismic-induced ground shaking and seismic-induced ground failures (e.g., liquefaction, lateral spreading, and settlement). All excavations should be designed and constructed in accordance with U.S. Occupational Safety and Health Administration regulations.

All construction would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would comply with the seismic recommendations of a California-registered, professional geotechnical engineer in accordance with CPUC General Order 95, the CBC, and local building codes. The Project would not include habitable structures. The construction of the substation upgrades, subtransmission line poles, and associated infrastructure would be required to comply with the design, construction, and maintenance regulations established in CPUC General Order 95, the CBC, and local codes. Impacts would be **less than significant**.

Mitigation: None required.

Criterion a.iv) Whether the Project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.

The Project components would be constructed on flat terrain, where there is no risk of landslides or slope instability. Therefore, there would be no landslide or slope instability impacts (Criterion a.iv) associated with the Project. *(No impact)*

Criterion b) Whether the Project would result in substantial soil erosion or the loss of topsoil.

Impact 3.7-2a: Project construction would result in soil erosion or the loss of topsoil. (*Less than Significant with Mitigation*)

The erosion susceptibility of the soils underlying the Project components ranges from low to high. Excavation and grading activities proposed during construction would increase the soil's exposure to erosive forces. Project activities that would expose soil include excavations to install lightweight steel poles, tubular steel pole foundations, and guy anchors; remove existing wood poles; expand the Cal City Substation; and install underground distribution conductor and telecommunications cable duct banks, as well as other distribution and telecommunications structures. Excavations to install an underground distribution conductor and telecommunications cable would be approximately 3 feet deep and would require an equipment work area extending approximately 10 feet on either side of the conductor/cable route. If needed, excavations in staging areas may be required for the installation of temporary distribution poles to deliver power during construction. Intense rain or wind events in such areas could result in substantial soil erosion that would cause sediment to enter adjacent waterways, and possibly propagation of small brooks or gullies. Approximately 592,000 cubic yards of material would be moved during Project construction. If not managed appropriately, these ground-disturbing activities could increase the risk of erosion and/or sediment transport.

Soils at the Project sites have various levels of susceptibility to erosion or the loss of topsoil. However, because construction would occur in an area exceeding 1 acre, the Project would be required to comply with the Construction General Permit, described under *NPDES Construction General Permit* in the state regulatory setting in Section 3.7.2.2. Compliance with the Construction General Permit would help ensure that the Project would manage stormwater to protect water quality and would include both erosion control measures for construction sites and post-construction requirements. The Construction General Permit requires a project proponent to prepare and implement a SWPPP that identifies BMPs to control stormwater from construction work sites and to prevent disturbed soils from moving off-site. The BMPs may include but are not limited to the following measures:

- Physical barriers to prevent erosion and sedimentation.
- Construction of sedimentation basins.
- Limitations on work periods during storm events.
- Use of infiltration swales.

- Protection of stockpiled materials.
- Other measures identified by a State Qualified SWPPP Developer that would substantially reduce or prevent erosion from occurring during construction.

In addition, the Project would implement BMPs described in Section 3.7.3, *Applicant Proposed Measures and Best Management Practices*, and Chapter 2, *Project Description*. Because the proposed BMPs are described as to be used only as "necessary" or as "practicable" with no definitions of those terms provided, the potential for successful performance of the BMPs cannot be assumed. Therefore, a potentially significant impact may occur. Implementation of Mitigation Measure 3.10-1a, *Erosion Control Plan*, is recommended to reduce this impact.

Under Mitigation Measure 3.10-1a, SCE would be required to submit to CPUC a Project-specific erosion control plan at least 60 days before construction. Compliance with the protection measures required by the General Construction Permit SWPPP as well as Mitigation Measure 3.10-1a would reduce Project impacts related to erosion and/or loss of topsoil during construction to **less than significant**.

> **Mitigation:** Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a in Section 3.10, *Hydrology and Water Quality*)
>
> **Significance after Mitigation:** Less than Significant.

Impact 3.7-2b: Project operation and maintenance would result in soil erosion or the loss of topsoil. (*Less than Significant*)

Soil disturbance activities such as road maintenance occurring during the Project's operation and maintenance period could increase the risk of erosion or sediment transport, if not managed appropriately. However, the Project would be required to comply with the post-construction runoff reduction standards of the Construction General Permit. These standards would require SCE to replicate the pre-Project water balance (volume of rainfall that ends up as runoff) for the smallest storms up to the 85th percentile storm event. Erosion and loss of topsoil impacts during operation and maintenance activities would be **less than significant**.

> **Mitigation:** None required.

Criterion c) Whether the Project would 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.

The Project area is generally flat with no evidence of landslides, and the consolidated sediments underlying the Project sites and alignments would be unlikely to destabilize during Project construction or operation and maintenance activities. Therefore, there would be no landslide or slope instability impacts associated with the Project. *(No impact)*

As analyzed previously in the context of Impact 3.7-1, the Project would result in a less-than-significant impact related to liquefaction, lateral spreading, and/or other seismic-induced ground failure.

Impact 3.7-3: The Project could 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 subsidence or collapse. (*Less than Significant*)

The Project sites and alignments are in Kern County and San Bernardino County, both of which have numerous areas where land subsidence has resulted from groundwater pumping. However, the Project is not located in an area of recorded land subsidence (USGS 2024b). The Project would not require the extraction of crude oil or natural gas; however, as discussed in Section 2.7.8.2, *Dewatering*, in Chapter 2, Project excavation may encounter shallow groundwater that could require dewatering.

As discussed in Section 3.7.1, *Environmental Setting*, the geotechnical report indicated that soils at the Cal City Substation are granular and have a "very low" risk of expansion; however, some soils along the proposed subtransmission line alignments can have high levels of clay and can be expansive. The geotechnical report indicated that soils at the Cal City Substation site have some collapse potential, which could apply to the locations of all other Project components.

The preliminary geotechnical report provided earthwork, soil removal, and compaction recommendations that would prevent a potential collapse. The recommendations include proper selection and placement of fill, moisture conditioning of soil, and the use of temporary shoring, as needed.

In accordance with Cal/OSHA regulations pertaining to temporary shoring (California Code of Regulations Title 8, Sections 1539–1543), excavations for the Cal City Project would be supported by conventional shoring methods such as soldier piles and lagging, which would prevent the excavation sidewalls from becoming unstable during construction. Soil that becomes loose during the construction and maintenance phases of the Project's Cal City Substation upgrades component would be adequately addressed through the recommendations provided by the geotechnical report and the CBC's compaction and grading requirements. These recommendations incorporate standard methods for reducing soil instability and maintaining proper site drainage. They also include standards for over-excavation and the placement of fill on competent and compacted native materials. As recommended by the geotechnical report, fill material should be free of particles greater than 3 inches in the largest dimension and appropriately moisture conditioned.

As stated previously, a preliminary geotechnical investigation has been conducted for the proposed Cal City Substation upgrades, but not for any of the other Project components. CPUC General Order 95 and the CBC would require the completion of a geotechnical investigation for all other Project components. The geotechnical investigation would analyze geotechnical conditions, with soil laboratory testing conducted as needed, and would provide geotechnical recommendations to address any identified problematic conditions.

Implementing the recommendations of the geotechnical report and excavation safety requirements specified in CPUC General Order 95, the CBC, and Cal/OSHA pertaining to temporary shoring regulations, discussed above, would ensure that any unstable soils or geologic units would be addressed. Therefore, although the Project could be located on a geologic unit or soil that is unstable, impacts associated with subsidence or collapse would be less than significant.

Mitigation: None required.

Criterion d) Whether the Project would be located on expansive soil creating substantial direct or indirect risks to life or property.

Impact 3.7-4: The Project would be located on expansive soil that could create direct or indirect risks to life or property. (*Less than Significant*)

As described in Section 3.7.1, *Environmental Setting*, the soil underlying the Cal City Substation upgrade site has a very low potential for expansion; however, some soils along the proposed subtransmission line alignments are classified as Hydrologic Group D, which can have high levels of clay and can be expansive. As discussed in Section 2.7.5.1, *Pole and H-Frame Installation*, in Chapter 2, poles/structures would be direct-buried to depths of 6–10 feet or buried with foundation depths of 20–50 feet (depending on pole type and location). Thus, the foundation structures for the Project would extend below the shallow expansive soil.

As discussed previously in Impact 3.7-3, CPUC General Order 95 and the CBC would require SCE to prepare a geotechnical investigation for all other Project components. The geotechnical investigation would include soil laboratory testing and would provide geotechnical recommendations to address any problematic conditions, such as expansive soils. Implementing the recommendations of the required geotechnical report would ensure that expansive soils, if any, would be sufficiently addressed. Therefore, impacts would be less than significant.

Mitigation: None required.

Criterion e) Whether the Project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

The Project would not require the construction or use of wastewater disposal systems. During construction, portable toilets would be used. Operation and maintenance would also not require the construction of any septic tanks or alternative wastewater disposal systems, given that operation and maintenance would be conducted either remotely or on an as-needed basis. Therefore, there would be no impact associated with septic tanks or alternative wastewater disposal systems. *(No impact)*

Criterion f) Whether the Project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Operation and maintenance of the Project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature. *(No impact)*

Project operation would not include routine activities that would require excavation. Therefore, there would be no risk of disrupting any previously undisturbed paleontological resources. No impact would occur during operation of the Project.

Impact 3.7-5: Construction of the Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (*Less than Significant*)

Grading or excavation for Project components along the subtransmission line alignments, specifically around the Cal City Substation and the Kramer–Cal City 115 kV Subtransmission Line, could directly or indirectly destroy paleontological resources. As discussed in Section 3.7.1, *Environmental Setting*, the Project alignments would have the potential to intersect geological units that have a high paleontological sensitivity. In addition, geologic formations or units with moderate and high paleontological sensitivity are buried under younger, low-sensitivity units in some portions of the Project area, while in other areas these high-sensitivity units outcrop at the ground surface. Therefore, the transition from Holocene to Pleistocene sediments throughout the Project area should be considered to occur at relatively shallow depths. Ground-disturbing activities within Holocene sediments may affect paleontological resources if those activities reach Pleistocene sediments.

SCE has proposed APMs PAL-1 through PAL-3 to reduce impacts on paleontological resources (see Section 3.7.3.1, *Applicant Proposed Measures*, above). These measures would require SCE to implement a paleontological resources mitigation and monitoring plan developed by a qualified paleontologist; to train construction personnel to recognize paleontological resources before the start of construction; and to ensure that a paleontological monitor would be present on-site during construction.

With the incorporation of APMs PAL-1 through PAL-3, impacts related to paleontological resources during construction would be less than significant.

Mitigation: None required.

3.7.5.3 Cumulative Effects Analysis

This section presents an analysis of the cumulative effects of the Project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. Significant cumulative impacts related to geology, soils, and paleontological resources could occur if the incremental impacts of the Project would combine with the incremental impacts of one or more cumulative projects.

The geographic area affected by the Project and its potential to contribute to cumulative impacts vary based on the environmental resource under consideration. The geographic scope of the

analysis for cumulative geology, soils, and paleontology impacts encompasses and is limited to the Project sites and alignments and the immediately adjacent areas. This is because impacts related to geology, soils, and paleontology are generally site-specific and depend on the nature and extent of the geologic hazard or resource, and on existing and future soil and groundwater conditions. For example, the effect of erosion would tend to be limited to the localized area of a project and could have a cumulative effect only if erosion would occur as the result of two or more adjacent projects that overlap spatially.

The timeframe during which the Project could contribute to cumulative geology and soils effects is during its construction and operational phases. For the Project, the operational phase is considered permanent. Therefore, similar to the geographic limitations discussed above, it should be noted that impacts related to geology, soils, and paleontology are generally time specific. The effects could be cumulative only if two or more projects would occur at the same time and overlap at the same location.

Section 3.0.2, *Cumulative Effects*, includes Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, which lists past, present, and reasonably foreseeable future projects in the vicinity of the Project sites and alignments. As identified in the table, there are several cumulative projects that would be immediately adjacent to the Project, including the Battery Energy Storage System adjacent to the Cal City Substation, the Distribution Pappas 33 kV Line and the Ivanpah–Control projects that are in the same alignment as the proposed Kramer–Cal City 115 kV Subtransmission Line alignment, the Aratina Solar Center adjacent to the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment, and the Transmission Line Easement Edwards Air Force Base adjacent to Kramer Substation.

The Battery Energy Storage System and the Distribution Pappas 33 kV Line projects would already be operational and/or constructed in the vicinity of the Project by the time Project construction would begin, but the other projects listed above are either in the planning phase or have begun construction. Therefore, those cumulative projects could be constructed in a timeframe similar to the Project, and the effects of those projects could occur in the same vicinity and at the same time as the effects of the Project.

Criteria a.i), a.iv), and e)

As discussed previously in Section 3.7.5, *Direct and Indirect Effects*, there would be no impacts associated with surface fault rupture, landslides, or soils that can adequately support septic systems or alternative wastewater disposal systems. Therefore, these topics would not contribute to cumulative impacts and are not discussed further in a cumulative context. *(No Impact)*

Criteria aii) and aiii)

Impact C.3.7-1: The Project impact related to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading, would not be cumulatively considerable. (*Less than Significant*)

State and local building regulations and standards, described in Section 3.7.2, *Regulatory Setting*, have been established to address seismic and seismic-induced ground failures. The Project and

the cumulative projects would be required to comply with the same applicable provisions of the CBC and City of California City codes. Other electrical power line projects, such as the Ivanpah-Control Project, would also be required to comply with CPUC General Order 95. Compliance with these requirements would reduce the potential for impacts. As explained in Section 3.7.2, the purpose of CPUC General Order 95, the CBC, and local codes is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures. By design, these regulations are intended to reduce the cumulative risks from buildings and structures. All projects would be required to undergo a geotechnical investigation to identify and provide recommendations to address any seismic issues.

Based on compliance with these requirements, the incremental impacts of the Project combined with the impacts of other projects in the area would not cause a significant cumulative impact related to seismically induced ground shaking, liquefaction, and/or lateral spreading. Therefore, the Project's contribution to cumulative effects would not be cumulatively considerable, and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion b)

Impact C.3.7-2a: The Project construction impact of soil erosion or loss of topsoil would be cumulatively considerable. (*Less than Significant with Mitigation*)

The state Construction General Permit requires each project that would have ground disturbance greater than 1 acre, including the cumulative projects discussed above, to prepare and implement a SWPPP. The SWPPPs would describe BMPs to control runoff and prevent erosion for each project. Compliance with these requirements would reduce the potential for erosion impacts. However, because the Project BMPs are described to be used only as "necessary" or as "practicable" with no definitions of those terms provided, the potential for successful performance of the BMPs cannot be assessed. Therefore, the Project impact could be significant. Cumulative projects could result in similar impacts. The incremental impacts of the Project combined with the impacts of other projects in the area would be cumulatively considerable.

However, with implementation of Mitigation Measure 3.10-1a, *Erosion Control Plan*, SCE would submit to CPUC a Project-specific erosion control plan at least 60 days before construction. This would reduce the Project's impact to less than cumulatively considerable. The cumulative impact would be reduced to a less-than-significant level.

Mitigation: Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a in Section 3.10, *Hydrology and Water Quality*)

Significance after Mitigation: Less than Significant.

Impact C.3.7-2b: The Project operation and maintenance impact of soil erosion or loss of topsoil would not be cumulatively considerable. (*Less than Significant*)

The Project's operation and maintenance activities that would involve excavation and/or soil disturbance could increase the risk of erosion or sediment transport if not managed appropriately.

Combined with the potential erosion impacts of other nearby projects, such as the cumulative projects listed above, this could result in a cumulative impact. However, the Project would be required to comply with the post-construction runoff reduction standards of the Construction General Permit. Those standards would require SCE to replicate the pre-Project water balance (volume of rainfall that ends up as runoff) for the smallest storms up to the 85th percentile storm event. Therefore, the Project's impacts related to erosion and loss of topsoil during operation and maintenance activities would not be cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion c)

Impact C.3.7-3: The Project impact causing or contributing to unstable soils would not be cumulatively considerable. (*Less than Significant*)

State and local building regulations and standards, described in Section 3.7.2, *Regulatory Setting*, have been established to address conditions related to unstable geologic units and soils. The Project and cumulative projects would be required to comply with the same applicable provisions of the CBC and City of California City codes. Electrical power projects would also be required to comply with CPUC General Order 95. Compliance with these requirements would reduce the potential for impacts. As explained in Section 3.7.2, the purpose of CPUC General Order 95, the CBC, and local codes is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures; by design, compliance with these regulations is intended to reduce the cumulative risks from buildings and structures.

Implementing the recommendations of the geotechnical report and excavation safety requirements specified in CPUC General Order 95, the CBC, and Cal/OSHA shoring regulations would ensure that any unstable soils or geologic units would be addressed. Therefore, although the Project could be located on a geologic unit or soil that is unstable, the impact related to subsidence or collapse would be less than significant. Cumulative projects could result in similar impacts; however, the incremental impact of the Project combined with the impacts of other projects in the aera would not be cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion d)

Impact C.3.7-4: The Project impact related to expansive soil would not be cumulatively considerable. (*Less than Significant*)

As discussed previously, the soil underlying the Cal City Substation has very low potential for expansion; however, some soils along the proposed subtransmission line alignments can have high levels of clay and can be expansive. These soil types likely also apply to the locations adjacent to the cumulative project sites. New poles/structures associated with the Project would be direct-buried to depths of 6–10 feet or buried with foundation depths of 20–50 feet (depending on pole type and location), which would extend below the shallow expansive soil. There would

be minimal impacts to life or property related to expansive soils. Because the Project would comply with the regulatory requirements described in Impact 3.7-4, the Project's impact would be less than significant. Cumulative projects could result in similar impacts; however, the incremental impact of the Project combined with the impacts of other projects in the aera would not be cumulatively considerable, and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion f)

Impact C.3.7-5: The Project construction impact relative to destruction of a unique paleontological resource or site or unique geologic feature would not be cumulatively considerable. (*Less than Significant*)

As discussed in Section 3.7.1, *Environmental Setting*, the Project subtransmission line alignments would have the potential to intersect geological units that have a high paleontological sensitivity. However, with Project compliance with the regulatory requirements and implementation of Project APMs PAL-1 through PAL-3, the Project would not cause a significant impact related to paleontological resources. Similarly, the cumulative project sites may be located on geologic units that are sensitive for paleontological resources. Cumulative projects would be required to implement similar measures under the Paleontological Resources Preservation Act of 2009 to reduce impacts on paleontological resources. Therefore, the incremental impact of the Project, combined with impacts of other projects in the area, would not be cumulatively considerable. A less-than-significant cumulative effect would result.

Mitigation: None required.

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3.8 Greenhouse Gas Emissions

This section evaluates the impacts of the Project associated with greenhouse gas (GHG) emissions. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The information and analysis presented are based in part on the GHG emissions calculations estimated on behalf of Southern California Edison (SCE) for the Project, presented in **Appendix F.1**, *Air Quality and GHG Calculations*. The GHG emissions calculations were reviewed by Environmental Science Associates and were found to be adequate to include in this analysis.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The CPUC did not receive scoping comments pertaining to GHG emissions.

3.8.1 Environmental Setting

The Project is within the Mojave Desert Air Basin (MDAB), which covers the approximately 27,300 square miles and includes eastern Kern County, northeast Los Angeles County, eastern Riverside County, and most of San Bernardino County. The MDAB is bounded by the Colorado River Valley to the south and east, and by mountains on its remaining sides. The MDAB covers most of California's high desert and is California's largest air basin. Within the MDAB, the Project would be under the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD) and the Mojave Desert Air Quality Management District (MDAQMD).

3.8.1.1 Climate Science

"Global warming" and "climate change" are common terms used to describe the increase in the average temperature of Earth's near-surface air and oceans since the mid-20th century. Natural processes and human actions have been identified as affecting the climate. The Intergovernmental Panel on Climate Change (IPCC) has concluded that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward.

However, increasing GHG concentrations in the atmosphere resulting from human activity since the 19th century, such as fossil fuel combustion, deforestation, and other activities, have unequivocally caused anthropogenic climate change (IPCC 2021). GHGs in the atmosphere naturally trap heat by impeding the exit of solar radiation that has hit Earth and is reflected back into space—a phenomenon referred to as the "greenhouse effect." Some GHGs occur naturally and are necessary for keeping Earth's surface habitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have trapped solar radiation and decreased the amount that is reflected into space, intensifying the natural greenhouse effect, and resulting in the increase of the global average temperature.

3.8.1.2 Greenhouse Gas Emissions

Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs) are the principal GHGs. When concentrations of these gases exceed historical concentrations in the atmosphere, the greenhouse effect is intensified. CO_2, CH_4, and N_2O occur naturally and are also generated through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4results from off-gassing, natural gas leaks from pipelines and industrial processes, and incomplete combustion associated with agricultural practices, landfills, energy providers, and other industrial facilities. N_2O emissions are also largely attributable to agricultural practices and soil management. Other human-generated GHGs include fluorinated gases such as HFCs, PFCs, and SF_6, which have much higher heat-absorption potential than CO_2 and are byproducts of certain industrial processes.

CO_2 is the reference gas for climate change, as it is the GHG emitted in the highest volume. The effect that each of the GHGs have on global warming is the product of the mass of their emissions and their global warming potential (GWP). GWP indicates how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. For example, CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of 25 and 298 times that of CO_2 respectively, which has a GWP of 1 (CARB 2024).

In emissions inventories, GHG emissions are typically reported as metric tons of CO_2 equivalent ($MTCO_2e$). CO_2e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in higher quantities and it accounts for the majority of GHG emissions in CO_2e, both from commercial developments and human activity in general.

Carbon Dioxide

Carbon dioxide (CO_2) is a naturally occurring gas that enters the atmosphere through natural as well as anthropogenic (human) sources. Key anthropogenic sources include the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, trees, wood products, and other biomass, as well as industrially relevant chemical reactions such as those associated with manufacturing cement. CO_2 sinks include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution, and are two of the largest reservoirs of CO_2 sequestration. In other words, CO_2 is removed from the atmosphere when it is absorbed by plants and the ocean as part of the biological carbon cycle.

Methane

Methane (CH_4) is the main component of natural gas used for home heating and cooking and occurs naturally from decay of organic matter. Natural sources of CH_4 include wetlands, permafrost, oceans, and wildfires. Anthropogenic sources include fossil fuel production, biomass burning, animal husbandry (fermentation during manure management), and landfills.

Nitrous Oxide

Nitrous oxide (N_2O) is a colorless gas produced by microbial processes in soil and water, including those reactions that occur in nitrogen-rich fertilizers. In addition to agricultural sources, some

industrial processes (i.e., nylon production, nitric acid production) also emit N_2O. During combustion, oxides of nitrogen (i.e., NO_X) composed of NO_2 and nitrogen oxide (NO) are emitted. These are air quality pollutants but are not the same as N_2O. Very small quantities of N_2O may be formed during fuel combustion by reaction of nitrogen and oxygen.

3.8.1.3 Effects of Global Climate Change

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of and inability to adequately model Earth's climate system in a resolution required for such information, the uncertainty surrounding climate change is dynamic and ever-changing with research. Nonetheless, the IPCC's Sixth Assessment Report states that is extremely likely that the dominant cause of the observed warming since the mid-20th century is the anthropogenic increase in GHG concentrations mainly from the transportation and industrial sectors (IPCC 2022). The National Academies of Science from 80 countries have issued statements endorsing the consensus position that humans are the dominant cause for global warming since the mid-20th century (Cook et al. 2016).

The *Fourth California Climate Change Assessment* (Fourth Assessment), published in 2018, found that the potential impacts in California due to global climate change include: loss in snow pack; sea-level rise; more extreme heat days per year; more high ozone days; more extreme forest fires; more severe droughts punctuated by extreme precipitation events; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation (OPR 2018; CNRA 2018). The Fourth Assessment's findings are consistent with climate change studies published by the CNRA since 2009, starting with the *California Climate Adaptation Strategy* (CNRA 2009) as a response to the Governor's Executive Order S-13-2008. In 2014, the CNRA rebranded the first update of the 2009 adaptation strategy as the *Safeguarding California Plan* (CNRA 2014). The 2018 update to *Safeguarding California Plan* identifies hundreds of ongoing actions and next steps state agencies are taking to safeguard Californians from climate impacts within a framework of 81 policy principles and recommendations (CNRA 2018).

In 2016, the CNRA released *Safeguarding California: Implementation Action Plans* in accordance with Executive Order B-30-15, identifying an agency to lead adaptation efforts in each sector (CNRA 2016). In accordance with the 2009 *California Climate Adaptation Strategy*, the California Energy Commission was directed to develop a website on climate change scenarios and impacts that would be beneficial for local decision makers. The website, known as Cal-Adapt, became operational in 2011. The information provided on the Cal-Adapt website represents a projection of potential future climate scenarios comprised of local average values for temperature, sea-level rise, snowpack, and other data representative of a variety of models and scenarios, including potential social and economic factors. Below is a summary of some of the potential effects that could be experienced in California as a result of global warming and climate change.

Temperature Increase

The primary effect of adding GHGs to the atmosphere has been a rise in the average global temperature. The impact of human activities on global temperature is readily apparent in the observational record. Since 1895, the contiguous U.S. has observed an average temperature increase of 1.5 degrees Fahrenheit (°F) (NOAA 2019). The 5-year period from 2015–2019 was the warmest on record for the contiguous U.S. (USEPA 2023); of the top 10 hottest years on record in the U.S., seven have occurred since the year 2000, with the top six years all occurring since 2012 (Climate Central 2022). According to the Cal-Adapt website, San Bernardino County could experience an increase in annual average maximum temperature of approximately 5.5 to 9.1°F by 2070–2099, compared to the baseline period of 1961–1990 (Cal-Adapt 2024). Likewise, Kern County could experience an increase in annual average maximum temperature of approximately 5.1 to 8.5°F by 2070–2099, compared to the baseline period of 1961–1990 (Cal-Adapt 2024).

With climate change, extreme heat conditions and heat waves are predicted to impact larger areas, last longer, and have higher temperatures. Heat waves, defined as three or more days with temperatures above 90°F, are projected to occur more frequently by the end of the century. Extreme heat days and heat waves can negatively impact human health. Heat-related illnesses that can occur as a result of extreme heat include a spectrum of illnesses ranging from heat cramps to severe heat exhaustion and life-threatening heat stroke (RCCC 2019).

Wildfires

The hotter and dryer conditions expected with climate change will make forests more susceptible to extreme wildfires. The Fourth Assessment found that if GHG emissions continue to rise, the frequency of extreme wildfires burning over approximately 25,000 acres would increase by nearly 50 percent, and the average area burned statewide each year would increase by 77 percent, by the year 2100. In the areas that have the highest fire risk, wildfire insurance is estimated to see costs rise by 18 percent by 2055 and the fraction of property insured would decrease (Westerling 2018).

Air Quality Degradation

Higher temperatures, conducive to air pollution formation, could worsen air quality in California and make it more difficult to achieve air quality standards. Climate change may increase the concentration of ground-level ozone, which can cause breathing problems, aggravate lung diseases such as asthma, emphysema, chronic bronchitis, and cause chronic obstructive pulmonary disease, but the magnitude of the effect, and therefore, its indirect effects, are uncertain. Emissions from wildfires can lead to excessive levels of particulate matter, ozone, and volatile organic compounds (NOAA 2022a). Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (RCCC 2019).

Precipitation and Water Supply

There is a high degree of uncertainty with respect to the overall impact of global climate change on future water supplies in California. Studies indicate considerable variability in predicting precise impacts of climate change on California's hydrology and water resources. Increasing uncertainty in the timing and intensity of precipitation will challenge the operational flexibility of

California's water management systems, leading to difficulty in managing water resources in the state and more frequent and severe droughts or floods. Warmer and wetter winters would increase the amount of runoff available for groundwater recharge; however, this additional runoff would occur at a time when some basins are either being recharged at their maximum capacity or are already full. Conversely, reductions in spring runoff and higher evapotranspiration because of higher temperatures could reduce the amount of water available for recharge (CNRA 2018).

Hydrology and Sea-Level Rise

Climate changes could potentially affect the amount of snowfall, rainfall, and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high-tide and high-runoff events); sea-level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. Sea-level rise can be a product of global warming through two main processes: expansion of seawater as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply. Sea level has risen 8–9 inches since 1880. In 2020, global sea level set a new record high of 3.6 inches above 1993 levels. The rate of sea-level rise is accelerating; it has more than doubled from 0.06 inches (1.4 millimeters) per year throughout most of the 20th century to 0.14 inches (3.6 millimeters) per year from 2006 to 2015. In many locations along the U.S. coastline, high-tide flooding is now 300 percent to more than 900 percent more frequent than it was 50 years ago. Sea level could rise as much as 8.2 feet above 2000 levels by 2100 (NOAA 2022b). Rising seas could impact transportation infrastructure, utilities, and regional industries.

Agriculture

California has a massive agricultural industry that represents over 13 percent of total U.S. agricultural revenue (CDFA 2020). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, a changing climate presents significant risks to agriculture due to changes in maximum and minimum temperatures, reduction of winter chill hours, extreme heat leading to additional costs for livestock cooling and losses in production, and declines in water quality, groundwater security, soil health, and pollinator species, and increased pest pressures (CNRA 2018).

Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increased concentrations of GHGs are likely to accelerate the rate of climate change. As stated in the *Safeguarding California Plan*, "species and ecosystems in California are valued both for their intrinsic worth and for the services they provide to society. Air purification, water filtration, flood attenuation, food provision, recreational opportunities such as fishing, hunting, wildlife viewing, and more are all services provided by ecosystems. These services can only be maintained if ecosystems are healthy and robust and continue to function properly under the impacts of climate change.

A recent study examined the vulnerability of all vegetation communities statewide in California and found that 16 of 29 were highly or nearly highly vulnerable to climate change, including Western North American freshwater marsh, Rocky Mountain subalpine and high montane conifer

forest, North American Pacific coastal salt marsh, and more." Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. With climate change, ecosystems and wildlife will be challenged by the spread of invasive species, barriers to species migration or movement in response to changing climatic conditions, direct impacts to species health, and mismatches in timing between seasonal life-cycle events such as species migration and food availability (CNRA 2018).

3.8.1.4 Greenhouse Gas Emissions Inventories

U.S. Greenhouse Gas Emissions

In 2022, the United States emitted about 6,343 million $MTCO_2e$, with 75 percent of those emissions coming from fossil fuel combustion for electricity, heat, and transportation. Of the major sectors nationwide, transportation accounts for the highest volume of GHG emissions (approximately 28 percent), followed by electricity (approximately 25 percent), industry (approximately 23 percent), commercial and residential (approximately 13 percent), and agriculture (approximately 11 percent). Between 1990 and 2022, total U.S. GHG emissions decreased by 3 percent, with emissions generally decreasing since peaking in 2007 (USEPA 2024a).

State of California Greenhouse Gas Emissions

The California Air Resources Board (CARB) compiles GHG inventories for the state. Based on the 2021 GHG inventory data (i.e., the latest year for which data are available from CARB), emissions from GHG emitting activities statewide were 381.3 million $MTCO_2e$. From 2000 to 2021, the carbon intensity of California's economy decreased by 51 percent while the gross domestic product increased by 68 percent, and population grew by approximately 16 percent from 2000 levels (CARB 2023). The decline in total emissions is likely due in part to the post–COVID-19 pandemic, most notably from reduced vehicle activity (reductions in heavy- and light-duty travel).

Of the major sectors statewide, transportation accounts for the highest volume of GHG emissions (approximately 39 percent), followed by the industrial sector (approximately 22 percent), the electricity sector (approximately 16 percent), residential and commercial (approximately 14 percent), and agriculture (approximately 8 percent) (CARB 2023).

3.8.2 Regulatory Setting

3.8.2.1 Federal

Clean Air Act

The U.S. Supreme Court held that the U.S. Environmental Protection Agency (USEPA) must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.*, twelve states and cities, including California, together with several environmental organizations sued the USEPA to require the regulation of GHGs as pollutants under the Clean Air Act (CAA) (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and the USEPA had the authority to regulate GHGs.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The current and projected concentrations of the six key 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.
- **Cause or Contribute Finding:** The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings did not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

40 CFR Part 98, Use of Electric Transmission and Distribution Equipment

Pursuant to federal regulations (40 CFR Part 98, Subpart DD), operators of certain electrical facilities, such as SF_6 containing circuit breakers, are required to report SF_6 emissions to USEPA (USEPA 2024b). Circuit breakers associated with the Project that contain SF_6 would be subject to reporting under this regulation.

3.8.2.2 State

A variety of statewide rules and regulations mandate the quantification and, if emissions exceed established thresholds, the reduction of GHGs. CEQA requires lead agencies to evaluate project-related GHG emissions and the potential for projects to contribute to climate change and to provide appropriate mitigation in cases where the lead agency determines that a project would result in a significant addition of GHGs to the atmosphere. Below is a discussion of other state programs, regulations, plans, and goals designed to reduce GHG emissions.

California Renewable Energy Programs

In 2002, California initially established its Renewables Portfolio Standard (RPS), with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. state energy agencies recommended accelerating that goal, and California Executive Order S-14-08 (November 2008) required California utilities to reach the 33 percent renewable electricity goal by 2020, consistent with the Assembly Bill (AB) 32 Scoping Plan (see below). In April 2011, Senate Bill (SB) 2 of the First Extraordinary Session (SB X1-2) was signed into law. SB X1-2 expressly applied the new 33 percent RPS by December 31, 2020, to all retail sellers of electricity and established renewable energy standards for interim years prior to 2020. In 2018, SB 100, the California Clean Energy Act of 2017, was signed into law. This bill established a target to supply the state with 100 percent renewable and zero-carbon energy resources by 2045.

SB 1020, signed on September 16, 2022, revised SB 100 to require that renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to end-use customers by December 31, 2035; 95 percent of all retail sales to end users by December 31, 2040; 100 percent of electricity procured to serve all state agencies by December 31, 2035; and 100 percent of all retail sales to end users by December 31, 2045.

Assembly Bill 32

California AB 32, the Global Warming Solutions Act of 2006, required CARB to establish a statewide GHG emissions cap for 2020 based on 1990 emissions levels. AB 32 required CARB to adopt regulations that identify and require selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions, and CARB is authorized to enforce compliance with the program. Under AB 32, CARB also was required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990, which had to be achieved by 2020. CARB established this limit in December 2007 at 427 million $MTCO_2e$. This is approximately 30 percent below forecasted "business-as-usual" emissions of 596 million $MTCO_2e$ in 2020, and about 10 percent below average annual GHG emissions during the period 2002 through 2004 (CARB 2008). In the interest of achieving the maximum technologically feasible and cost-effective GHG emission reductions, AB 32 permits the use of market-based compliance mechanisms and requires CARB to monitor compliance with and enforce any rule, regulation, order, emissions limitation, emissions reduction measure, or market-based compliance mechanism that it adopts.

Senate Bill 97

In 2007, the California Legislature enacted SB 97, which required an amendment of the CEQA Guidelines to incorporate analysis and mitigation of GHG emissions from projects subject to CEQA. The amendments took effect March 18, 2010. The amendments added Section 15064.4 to the CEQA Guidelines, specifically addressing the potential significance of GHG emissions. Section 15064.4 calls for a "good faith effort" to "describe, calculate, or estimate" GHG emissions and indicates that the analysis of the significance of any GHG impacts should include consideration of the extent to which projects would do any of the following:

- Increase or reduce GHG emissions.
- Exceed a locally applicable threshold of significance.
- Comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions."

The CEQA Guidelines also state that a project may be found to have a less-than-significant impact related to GHG emissions if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (California Code of Regulations Title 14, Section 15064[h][3]). Importantly, however, the CEQA Guidelines do not require or recommend a specific analytical methodology or provide quantitative criteria for determining the significance of GHG emissions.

Climate Change Scoping Plan (AB 32 Scoping Plan)

In December 2008, CARB approved the AB 32 Scoping Plan, outlining the State of California's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan estimates a reduction of 174 million $MTCO_2e$ (about 191 million tons) from the transportation, energy, agriculture, forestry, and high-climate-change-potential sectors, and proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California's energy sources, save energy, create new jobs, and

enhance public health. The Scoping Plan must be updated every 5 years to evaluate the mix of AB 32 policies to ensure that California is on track to achieve the 2020 GHG reduction goal. Appendices C and E of the adopted 2008 AB 32 Scoping Plan include a list of 39 recommended action measures to reduce GHG emissions (CARB 2008). Of these measures, only one is directly relevant to the Project. Measure H-6, "High GWP Gases," is designed to reduce emissions of SF_6 within the electric utility sector and at particle accelerators. This measure requires the use of best achievable control technology for the detection and repair of leaks, and the recycling of SF_6.

CARB released its first Scoping Plan Update in May 2014 (CARB 2014) and subsequent updates in 2017 and 2022, as described below.

Executive Order B-30-15

In April 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Reaching this emission reduction target will make it possible for California to reach its ultimate goal of reducing emissions 80 percent under 1990 levels by 2050, as identified in Executive Order S-3-05. Executive Order B-30-15 also specifically addresses the need for climate adaptation and directs state government to do the following (Office of the Governor 2015):

- Incorporate climate change impacts into the state's 5-Year Infrastructure Plan.
- Update the *Safeguarding California Plan*, the state climate adaption strategy to identify how climate change will affect California infrastructure and industry and what actions the state can take to reduce the risks posed by climate change.
- Factor climate change into state agencies' planning and investment decisions.
- Implement measures under existing agency and departmental authority to reduce GHG emissions.

Executive Order B-30-15 required CARB to update the AB 32 Climate Change Scoping Plan to incorporate the 2030 target. On September 8, 2016, Governor Brown signed Senate Bill 32 (SB 32), which codified the 2030 reduction target (i.e., 40 percent below 1990 levels) called for in Executive Order B-30-15. CARB's 2017 Scoping Plan update (discussed below) addresses the 2030 target.

2017 Scoping Plan Update

CARB approved the 2017 *Climate Change Scoping Plan Update* (2017 Scoping Plan Update) in December 2017. The 2017 Scoping Plan Update outlines the proposed framework of action for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB 2017). Through a combination of data synthesis and modeling, CARB determined that the target statewide 2030 emissions limit is 260 million $MTCO_2e$, and that further commitments will need to be made to achieve an additional reduction of 50 million $MTCO_2e$ beyond current policies and programs. The cornerstone of the 2017 Scoping Plan Update is an expansion of the cap-and-trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2030 limit and 2050 goal set forth by Executive Order B-30-15.

In the 2017 Scoping Plan Update, CARB recommends statewide targets of no more than 6 $MTCO_2e$ per capita by 2030 and no more than 2 $MTCO_2e$ per capita by 2050. CARB acknowledges that because the statewide per-capita targets are based on the statewide GHG emissions inventory that includes all emissions sectors in the state, it is appropriate for local jurisdictions to derive evidence-based local per-capita goals based on local emissions sectors and growth projections.

Assembly Bill 1279 (California Climate Crisis Act)

Signed into law in September of 2022, AB 1279 requires the state to achieve two things by 2045 or sooner: 1) net zero GHG emissions; and 2) a reduction in statewide anthropogenic GHG emissions of 85 percent below 1990 levels. AB 1279 requires CARB to ensure that the 2022 Scoping Plan, described further below, identifies and recommends measures to achieve carbon neutrality, and to identify and implement policies and strategies for CO_2 removal and carbon capture, utilization, and storage technologies.

2022 Scoping Plan for Achieving Carbon Neutrality

The 2022 *Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan), adopted by CARB in December 2022, expands on prior Scoping Plans and responds to AB 1279 by outlining a technologically feasible, cost-effective, and equity-focused path to achieve the state's climate target of reducing anthropogenic emissions to 85 percent below 1990 levels and achieving carbon neutrality by 2045 or earlier (CARB 2022). The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Scoping Plan also discusses the role of local governments in meeting the state's GHG emissions reduction goals because local governments have jurisdiction and land use authority related to community-scale planning and permitting processes, local codes and actions, outreach and education programs, and municipal operations. The efforts of local governments to reduce GHG emissions within their jurisdictions are critical to achieving the state's long-term climate goals. Furthermore, local governments make critical decisions on how and when to deploy transportation infrastructure and can choose to support transit, walking, bicycling, and neighborhoods that allow people to transition away from cars; they can adopt building ordinances that exceed statewide building code requirements; and they play a critical role in facilitating the rollout of zero emission vehicle infrastructure (CARB 2022).

The 2022 Scoping Plan identifies a construction equipment sector action for the Scoping Plan Scenario that commits to 25 percent of energy demand to be electrified by 2030, and 75 percent electrified by 2045 (CARB 2022). Since construction of the Project would be completed prior to 2030, this construction equipment sector action is not directly applicable to the Project.

Regulation for Reducing GHG Emissions from Gas-Insulated Equipment

In 2007, CARB adopted the reduction of SF_6 emissions from electricity transmission and distribution equipment as an AB 32 early action measure, and in 2010, CARB adopted the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear, which

required switchgear owners to reduce their emission rates, reaching a one percent emission rate by 2020. CARB amended the regulation in 2021 to phase out the acquisition of GHG-insulated equipment. Other changes are also adopted to cover other GHGs beyond SF_6 and enhance accuracy of emissions accounting and reporting. The amended regulation became effective January 1, 2022.

Pursuant to Section 95352, *Sulfur Hexafluoride Phase-Out*, of the regulation, no person may acquire SF_6-insulated equipment for use in California unless an exemption is approved by CARB's Executive Officer, the SF_6-insulated equipment was present in California prior to the phase out date, the SF_6-insulated equipment was purchased prior to the phase out date, or the SF_6-insulated equipment manufacturer replaces a defective SF_6-insulated equipment device under the terms of the manufacturer's warranty. For SF_6-insulated equipment with 115 kV, such as that proposed for the Project, the phase-out dates are either January 1, 2025, for equipment with short-circuit current rating of less than 63 kA or January 1, 2028, for equipment greater than or equal to 63 kA (CARB 2025).

3.8.2.3 Local

Eastern Kern Air Pollution Control District

In March 2012, the EKAPCD adopted an addendum to their CEQA guidelines, *Addendum to CEQA Guidelines Addressing GHG Emission Impacts For Stationary Source Projects When Serving As Lead CEQA Agency*, which served to establish a GHG significance thresholds of 25,000 $MTCO_2e$ per year (EKAPCD 2012).

Mojave Desert Air Quality Management District

In February 2020, the MDAQMD's CEQA Guidelines established a threshold of 548,000 pounds per day and 100,000 tons, or 90,718.5 metric tons, per year of CO_2e (MDAQMD 2020).

Kern County

Kern County's adopted 2009 General Plan does not include regulatory goals or policies that address GHG emissions or climate change that would be relevant to the Project (Kern County 2009).

San Bernardino County

San Bernardino County Greenhouse Gas Reduction Plan Update

In September 2021, San Bernardino County adopted their Greenhouse Gas Reduction Plan Update. This plan is created as a comprehensive strategy to reduce community GHG emissions consistent with the state's GHG reduction goals in order to minimize global climate change and to mitigate the impacts of climate change in San Bernardino County. The Greenhouse Gas Reduction Plan Update establishes a GHG reduction target for 2030, aiming for an emissions reduction target of 40 percent below 2020 levels (San Bernardino County 2021). The plan demonstrates San Bernardino County's plan for substantial progress towards consistency with the State of California's statewide policy goals for GHG emission reductions, as enacted by AB 32, SB 32, and achieving the state's goal of carbon neutrality by 2045.

San Bernardino Renewable Energy and Conservation Element

San Bernardino County's Renewable Energy and Conservation Element was adopted in 2017 and updated in 2019. This element is focused on sustainability, public health and wellness, and stewardship of land to promote an environment of prosperity and well-being for those who reside and invest in San Bernardino County (San Bernardino County 2019). The Renewable Energy and Conservation Element includes multiple goals and policies related to GHG emissions and reduction efforts; however, they are not directly applicable to the Project.

City of California City

The City of California City's adopted 2009 General Plan does not include regulatory goals or policies addressing GHG emissions or climate change relevant to the Project (City of California City 2009).

3.8.3 Applicant Proposed Measures and Best Management Practices

3.8.3.1 Applicant Proposed Measures

SCE has identified Applicant proposed measures (APMs) to minimize impacts from the Project. **APM NOI-1** is proposed (i.e., as part of the Project) to reduce noise impacts but one of its bullet measures would also serve to reduce GHG emissions during construction by minimizing unnecessary construction vehicle fuel use, and idling time. If a vehicle would not be required for use immediately or continuously for construction activities, the measure requires its engine to be shut off (see APM NOI-1 in Section 2.12.1).

3.8.3.2 Best Management Practices

SCE has also proposed implementation of best management practices that are based on the California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook*. The Project has not identified best management practices directly related to GHG emissions.

3.8.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to GHG emissions if it would:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.8.5 Direct and Indirect Effects

3.8.5.1 Approach to the Analysis

Neither CEQA Guidelines Section 15064.4 nor any other law requires or endorses a specific analytical methodology or quantitative criteria for determining the significance of GHG emissions.[1] Instead, lead agencies are to make a "good-faith effort" to "describe, calculate, or estimate" GHG emissions, and to consider the extent to which the project would either increase or reduce GHG emissions, exceed a locally applicable threshold of significance, or comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions."

Impacts from GHG emissions associated with the Project were assessed by comparing the anticipated emissions from the construction and operation and maintenance phases of the Project to applicable emissions thresholds for operational stationary sources established by the local air districts with jurisdiction in the Project area (i.e., EKAPCD and MDAQMD). The emissions estimated for the Project were generated using construction and operation equipment and vehicle use assumptions provided by SCE and the methods established in the California Emissions Estimator Model Version 2022.1.1, CARB's Emission Factor model, and the Swiss Federal Office of Civil Aviation's *Guidance on the Determination of Helicopter Emissions* (FOCA 2015). Refer to Appendix F.1 for the detailed emission estimate calculations.

The Project's long-term operational emissions would be primarily stationary-source emissions of fugitive SF_6 from circuit breakers at the Cal City, Edwards, and Kramer substations and Holgate Switchyard. Therefore, this analysis uses the EKAPCD and MDAQMD stationary-source operation thresholds to gauge the significance of the Project's GHG emissions. The thresholds represent levels of GHG emissions that if exceeded are considered by the air districts to result in sufficiently high GHG emissions to be cumulatively considerable and require mitigation. **Table 3.8-1**, *Annual GHG Emission Thresholds*, summarizes the quantitative thresholds that apply to the Project.

TABLE 3.8-1
ANNUAL GREENHOUSE GAS EMISSIONS THRESHOLDS

Jurisdiction	Annual GHG Emissions Threshold (MTCO2e)
EKAPCD Threshold	25,000
MDAQMD Threshold	90,719
SOURCES: EKCAPCD 2012; MDAQMD 2020.	

The EKAPCD and MDAQMD do not have recommended GHG emissions significance thresholds for short-term construction emissions. However, various agencies, including the South Coast Air Quality Management District (SCAQMD), have suggested that amortizing short-term construction emissions over the expected life of a project (e.g., 30 years) and adding those emissions to the

[1] See *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal.4th 204, which identifies three "potential options" for lead agencies evaluating the cumulative significance of a proposed land use development's GHG emissions and explicitly stating that none of the three options came with a "guarantee" that it would be sufficient if later challenged.

long-term operation emissions is appropriate in the evaluation of project-level emission impacts (SCAQMD 2008). Amortizing construction emissions over 30 years represents the estimated useful life of the Project, a methodology consistent with preliminary guidance developed by the SCAQMD and widely used as an industry standard. This approach is consistent with California Office of Planning and Research's *CEQA and Climate Change Advisory Discussion Draft*. As stated therein, "when possible, lead agencies should quantify the project's construction and operational greenhouse gas emissions, using available data and tools, to determine the amount, types, and sources of greenhouse gas emissions resulting from the project" (OPR 2018). Therefore, the total Project construction emissions were amortized over 30 years and combined with the operation emissions before being compared to the annual thresholds established by the EKAPCD and MDAQMD. The emissions are combined with amortized construction emissions and compared to the annual thresholds in Table 3.8-1.

3.8.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact 3.8-1: The Project would generate greenhouse gas emissions. (*Less than Significant*)

Construction Emissions

As presented in Section 2.7.15.3, Schedule, construction of the Project would generate GHG emission over a period of approximately 24 months. The main components of Project construction would include upgrades to the existing SCE-owned Cal City Substation and construction of two new subtransmission lines: the Kramer-Cal City and the Cal City-Edwards-Holgate subtransmission lines. In addition, the Project would include construction of underground distribution getaways and installation of telecommunication cables and improvements at the existing Holgate Switchyard, and the Cal City, Kramer, and Edwards substations. GHG emissions would be generated by the use of off-road heavy-duty construction equipment, on-road vehicle trips generated by workers, vendors, and haul trucks, and up to two light- and medium-duty helicopters. **Table 3.8-2**, GHG Emissions by Construction Activity, summarizes the GHG emissions by construction activity based on the equipment usage and workforce assumptions provided in Table 2-7. The table shows the 24 different phases of construction activity, ranging from long- to short-term construction periods. Construction during these phases would use various off-road heavy-duty construction equipment, including but not limited to forklifts, loaders, graders, cranes, excavators, and generator sets. The full equipment list and quantity based on construction activity is in Table 15, *Equipment List*, of Appendix F.1. Likewise, on-road vehicle trips from workers, vendors, and heavy-duty haul trucks would occur during each of these phases. Furthermore, SCE has proposed to implement APM NOI-1, which would impose idling restrictions and would result in less fuel combustion and energy consumption, thus, reducing the Project's construction-related GHG emissions.

As identified in Table 3.8-2, the Project would generate approximately 9,517 $MTCO_2e$ over an estimated 24-month construction period. Amortized over an assumed 30-year Project lifetime, construction emissions would be approximately 317 $MTCO_2e$ per year.

TABLE 3.8-2
PROJECT GREENHOUSE GAS EMISSIONS BY CONSTRUCTION ACTIVITY

Construction Activity	Total GHG Emissions ($MTCO_2e$)
Staging Areas	1,103
Civil Crew (Road Work, Foundations, Ducts)	1,346
Civil Crew (Road Maintenance)	145
Structure Installation	1,683
Install Conductor/Cable	3,458
ADSS/OPGW Splicing	16
Restoration (at end of construction activities)	73
Cal City Substation Civil Crew (Site Grading)	305
Cal City Substation Civil Crew (Channel Install & Additions)	193
Cal City Substation Civil Crew (Foundation)	272
Cal City Substation Electrical Crew	351
Cal City Substation Maintenance Crew	3
Cal City Substation Test Crew	3
Cal City Substation Test Crew and Wireman (Cutover)	3
Cal City Substation Demolition - Test Crew	2
Cal City Substation Demolition - Maintenance Crew	1
Cal City Substation Demolition - Electrical Crew	88
Cal City Substation Demolition - Civil Crew	105
Holgate Substation Civil Crew	5
Holgate Substation Electrical Crew	16
Kramer Substation Civil Crew (Foundations)	34
Kramer Substation Electrical Crew	101
Edwards Substation Civil Crew (Foundations)	69
Edwards Substation Electrical Crew	142
Total Emissions	***9,517***
Amortized Emissions	**317**

SOURCE: ESA 2024, based on Appendix F.1

Operation and Maintenance Emissions

Operation and maintenance activities of the Project would result in the long-term generation of GHG emissions. The Project's electrical upgrades at the Cal City Substation, Edwards Substation, Holgate Switchyard, and Kramer Substation would result in operational GHG emissions from fugitive emissions that would leak from proposed 115 kV SF_6 gas-insulated circuit breakers. Estimated annual GHG emissions from circuit breaker leaks are 75 $MTCO_2e$ per year.[2] In

[2] The proposed quantity of new SF_6 gas insulated circuit breakers are as follows: 12 at Cal City Substation, 6 at Edwards Substation, 2 at Holgate Substation, and 3 at Kramer Substation. The gas insulated circuit breakers would each have a mass capacity of 61.2 pounds SF_6 and a leak rate of 0.5 percent per year.

addition, Project maintenance and inspection activities would result in an additional 60 vehicle trips per year, which would result in an additional 3 $MTCO_2e$ per year. Therefore, total operation and maintenance emissions for the Project would be 78 $MTCO_2e$ per year.

Impact Conclusion

Table 3.8-3, *Annual GHG Emissions*, summarizes the amortized construction emissions combined with the emissions that would be associated with long-term operation and maintenance activities of the Project. The combined annual GHG emissions estimated for the Project are 395 $MTCO_2e$ per year, which is well below the thresholds of significance established by the EKAPCD and the MDAQMD. Therefore, the Project would not generate, either directly or indirectly, GHG emissions that would have a significant impact on the environment, and the impact would be **less than significant**.

TABLE 3.8-3
ANNUAL GREENHOUSE GAS EMISSIONS

Emission Source	Project GHG Emissions ($MTCO_2e$ per Year)
Construction (Amortized over 30 years)	317
Operation and Maintenance	78
Combined Annual GHG Emissions	**395**
EKAPCD Significance Threshold	25,000
MDAQMD Significance Threshold	90,719
Exceeds Threshold?	**No**

SOURCE: ESA 2024, based on Appendix F.1

Mitigation: None required.

Criterion b) Whether the Project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Impact 3.8-2: The Project could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (*Less than Significant*)

Construction

The 2022 Scoping Plan identifies a construction equipment sector action for the Scoping Plan Scenario that commits to 25 percent of energy demand to be electrified by 2030, and 75 percent electrified by 2045. A similar commitment is not proposed for the Project-related construction equipment. However, construction of the Project would be completed prior to the 2030 compliance date associated with the construction equipment sector action; therefore, it would not be directly applicable to the Project.

Construction of the Project would result in increased GHG emissions compared to baseline conditions; however, the emissions would not exceed regional or quantitative thresholds and would not conflict with applicable plans, policies, and regulations for reducing GHG emissions.

Construction of the Project would incorporate best management practices and standards set by the SCE, consistent with the requirements and intentions of the applicable and state plans, polices, and regulations identified in Section 3.8.2. The amortized construction emissions associated with the Project do not exceed the quantitative significance thresholds adopted by the EKAPCD and MDAQMD. For these reasons, construction of the Project would not conflict with any applicable plan, policies, or regulations, and would result in a **less-than-significant** impact.

Operation

Pursuant to Section 95352, *Sulfur Hexafluoride Phase-Out*, the phase-out dates for SF_6 equipment applicable to the Project are either January 1, 2025, for equipment with a short-circuit current rating of less than 63 kA or January 1, 2028, for equipment greater than or equal to 63 kA. However, on September 26, 2025, CARB's Executive Officer approved an exemption for the Project for 115 kV circuit breakers that have no commercially available replacements for SF_6 technology in the market (SCE 2025). The exemption approval is based on provisions that allow for SF_6 use when no viable non-SF_6 option exists for the required equipment type and is valid for 24 months. SCE is tracking all SF_6 circuit breaker orders for the Project for compliance with Section 95352 and would provide CARB with the required documentation for any additional exemption approvals (SCE 2025). SCE is currently working with its circuit breaker vendor to confirm whether vacuum 33 kV circuit breakers can be used instead of SF_6 insulated 33 kV circuit breakers (SCE 2025), but for the purposes of this analysis, it is assumed that all the SF_6-insulated equipment described in Section 2.5.2, *Substation Improvements*, would be operated as proposed.

As discussed in Impact 3.8-1, operation and maintenance of the Project would result in the generation of GHG emissions, primarily due to leaking SF_6 gas insulated circuit breakers. Regarding the management of SF_6, SCE has developed and would implement SF_6 gas management guidelines as described in *An Asset Management Approach for EPA/CARB SF6 Regulations* (SCE 2012). This document includes an overview of the tools and methods that SCE utilizes to comply with both USEPA's Voluntary SF_6 Emission Reduction Partnership program and CARB's SF_6 regulations. This guidance document identifies storage methods, disposal method alternatives, and recordkeeping requirements. Inventories of SF_6 that would be associated with the Project would be documented and annually reported to USEPA and CARB. SCE has made investments in improving its SF_6 management practices, but also in purchasing state-of-the-art gas-handling equipment that minimizes SF_6 leaks. The new equipment has sealing designs that eliminate possible sources of SF_6 leakage. SCE manages leaks from older equipment by performing repairs and replacing outdated equipment through its infrastructure replacement program (SCE 2023).

Furthermore, the Project's electrical upgrades and improvements serve to support current and long-term forecast of electrical demand in the area. The SCE would provide this additional energy and be required to comply with the state's RPS that requires renewable energy resources and zero-carbon resources to supply 90 percent of all retail sales of electricity to end-use customers by December 31, 2035; 95 percent of all retail sales to end users by December 31, 2040; 100 percent of electricity procured to serve all state agencies by December 31, 2035; and 100 percent of all retail sales to end users by December 31, 2045. In addition, the Project would

provide additional electrical infrastructure that would serve to support the transition from natural gas and fossil fuel reliance and support grid resiliency and modernization, aiming to achieve the 2022 Scoping Plan's carbon neutrality target by 2045.

Since SCE complies with USEPA and CARB regulations and programs regarding the handling, storage, and reporting of SF_6 and the state's RPS, and would not conflict with the 2022 Scoping Plan, the Project would not conflict with applicable plans, policies, and regulations for reducing GHG emissions. Therefore, operation of the Project would not conflict with any applicable plan, policies, or regulations, and would result in a **less-than-significant** impact.

Mitigation: None required.

3.8.5.3 Cumulative Effects Analysis

Criterion a)

Impact C.3.8-1: The Project impact due to the generation of greenhouse gas emissions would not be cumulatively considerable. (*Less than Significant*)

Climate change is a cumulative effect of all natural and anthropogenic sources of GHGs accumulated on a global scale. The GHG emissions from an individual project would not individually generate sufficient GHG emissions to measurably influence global climate change, and thus the assessment of GHG emissions impacts is inherently cumulative. Consideration of a project's climate change impact, therefore, is essentially an analysis of a project's contribution to a cumulatively significant global impact through its emissions of GHGs. While it is possible to examine the quantity of GHGs that would be emitted from individual project sources, it is not currently possible to link these GHGs emitted from a specific source or location to particular global climate changes. As such, the significance presented in this impact is based on a determination of whether the GHG emissions from the Project represent a cumulatively considerable contribution to climate change.

As presented in Section 3.8.5.2, construction and operation of the Project would result in emissions of GHGs from construction equipment and worker trips. Over the entire 2-year construction period of the Project, approximately 9,517 $MTCO_2e$ would be emitted, and over the long-term, approximately 78 $MTCO_2e$ would be emitted during annual operation and maintenance activities. When amortized construction and operation emissions are combined, GHG emissions would be approximately 395 $MTCO_2e$ annually. These emissions would fall well below the EKAPCD and MDAQMD's quantitative thresholds of significance for GHG emissions. Therefore, the Project would not generate, either directly or indirectly, GHG emissions that would have a significant impact on the environment. As a result, the Project's contribution to any cumulative impacts would not be cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion b)

Impact C.3.8-2: The Project impact associated with potential conflicts with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases would not be cumulatively considerable. (*Less than Significant*)

The amortized construction emissions associated with the Project do not exceed the quantitative significance thresholds adopted by the EKAPCD and MDAQMD. For these reasons, construction of the Project would not conflict with any applicable plan, policies, or regulations. In addition, since SCE complies with USEPA and CARB regulations and programs regarding the handling, storage, and reporting of SF_6 and the state's RPS, and would not conflict with the 2022 Scoping Plan, the Project would not conflict with applicable plans, policies, and regulations for reducing GHG emissions. Therefore, the construction and operation impact of the Project associated with any conflicts with any applicable plan, policies, or regulations would not be cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

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3.9 Hazards and Hazardous Materials

This section evaluates the impacts of the Project relative to hazards and hazardous materials. It presents information about the environmental and regulatory setting, identifies the criteria and methods used to evaluate the significance of potential impacts, and provides the results of the impact assessment. The information and analysis presented in this section are based in part on the database search results prepared by Environmental Data Resources, Inc. (see **Appendix I**, *EDR Area /Corridor Report*).

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The CPUC did not receive scoping comments pertaining to hazards and hazardous materials. Possible hazards involving toxic air contaminants are discussed in Section 3.3, *Air Quality*, of this EIR. Possible hazards relative to flooding and seismic risks are discussed in Section 3.7, *Geology and Soils*. Possible hazards relative to water quality are also discussed in Section 3.10, *Hydrology and Water Quality*. Possible hazards relative to noise are also discussed in Section 3.13, *Noise*. Possible hazards relative to wildland fires are also discussed in Section 3.20, *Wildfire*.

3.9.1 Environmental Setting

The study area for the analysis of potential impacts relative to hazards and hazardous materials, unexploded ordnance, and shock hazards is defined as the footprint of the Project sites and alignments, including all areas of temporary and/or permanent ground disturbance, hazardous materials sites, schools, and wildland fires within 0.25 miles from the Project sites and alignments, airports, air traffic, and helicopter use within 2 miles the Project site boundaries and alignments, and haul routes used for the transport of hazardous materials and wastes associated with the Project.

3.9.1.1 Hazardous Materials

Definition of Hazardous Materials

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (California Health and Safety Code Chapter 6.95, Section 25501[n]). The term “hazardous materials” refers to both hazardous substances and hazardous wastes. Under federal and State laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases).

Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been spent, discarded, discharged, spilled, contaminated, or are being stored until they

can be disposed of properly (Title 22 California Code of Regulations [CCR] Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific criteria established in Sections 66261.20 through 66261.24 of the CCR Title 22. Hazardous substances are regulated by multiple agencies, as described in the regulatory setting. below, and cleanup requirements of hazardous material releases are determined on a case-by-case basis according to the applicable regulatory agency (e.g., California Department of Toxic Substances Control [DTSC] or Lahontan Regional Water Quality Control Board [RWQCB]) with lead jurisdiction over a contaminated site.

Wood Treatment Products

There are 241 distribution wood poles along the Project alignments. 151 wooden distribution poles are along the Kramer-Cal City 115 kV Subtransmission Line alignment and 90 wooden poles are along the Cal-City-Edwards-Holgate 115 kV Subtransmission Line alignment. The distribution wood poles could be treated with chemicals such as pentachlorophenol, creosote, and chromated copper arsenate. Typically, these chemicals are applied to utility wood poles during manufacturing to protect wood from rotting due to insects and microbial agents. These chemicals, for certain quantities, are considered hazardous materials, which require specific handling and disposal protocol prescribed by state and federal hazardous materials regulations (see Section 3.9.2, *Regulatory Setting*, below). Additionally, the base of the treated wood poles may be wrapped with copper naphthenate paper, also known as CuNap wrap. This paper has been accepted as a wood preservative for several decades and has been employed in non-pressure treatments of wood and other products. Copper naphthenate is a common preservative and its use has increased recently in response to environmental concerns associated with other wood treatment products.

Hazardous Materials Sites

In California, Government Code Section 65962.5 requires the State Water Resources Control Board and DTSC to maintain regulatory databases listing hazardous materials sites; the list is also referred to as the Cortese List.

The Cortese List identifies sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater. The listed sites can be accessed through the State Water Resources Control Board's GeoTracker database for leaking underground storage tanks (LUSTs), permitted underground storage tanks (USTs), U.S. Department of Defense sites, and Cleanup Program sites and the DTSC EnviroStor database for federal and state response sites; voluntary, school, and military cleanups and corrective actions; and permitted sites. The reporting and statuses of these hazardous materials sites change as identification, monitoring, and clean-up progresses. Typically, a listed site is considered closed or subject to no further action once it has been demonstrated that existing site uses combined with the levels of identified contamination present no significant risk to human health or the environment and the case is closed by the overseeing agency. The databases are cross-connected and can be viewed through either the GeoTracker or the EnviroStor website. In addition, the database search results in Appendix I were checked for additional listed sites (EDR 2021).

The search of the databases identified seven hazardous materials release site cases within 0.25 miles of a Project site or alignment as shown in **Figure 3.9-1**, and discussed below:

Three Surface Impoundments

The Three Surface Impoundments is a wastewater landfill that overlaps with the southwest corner of the construction area for proposed LWS monopole 5026-1 (see Appendix A, page 91) along the Kramer-Cal City subtransmission line alignment (Lahontan RWQCB 2023). The landfill ceased operation in 2020. The closure plan includes bioremediation, landfarming, and surface impoundments to address contaminated soil. The closure includes a final cover consisting of a 2.5-foot-thick engineered monolithic soil layer placed over a 1-foot-thick foundation layer placed over the evaporation waste materials. Any future construction activities are prohibited from disturbing the final cover.

Kramer Potash Plant

The Kramer Potash Plant is a possible former World War II military site approximately 300 feet north of one of the proposed staging areas at Kramer Junction (Staging Area 1-11; see page 93 in Appendix A) (USACE 1998). The facility was shown on a map of California circa 1941 to 1945 in the vicinity of the Kramer-Cal City subtransmission line alignment in Kramer Junction; however, no information was available to confirm the existence of Kramer Potash Plant. This site is listed as inactive and in need of evaluation as of July 1, 2005.

Four Corners Chevron

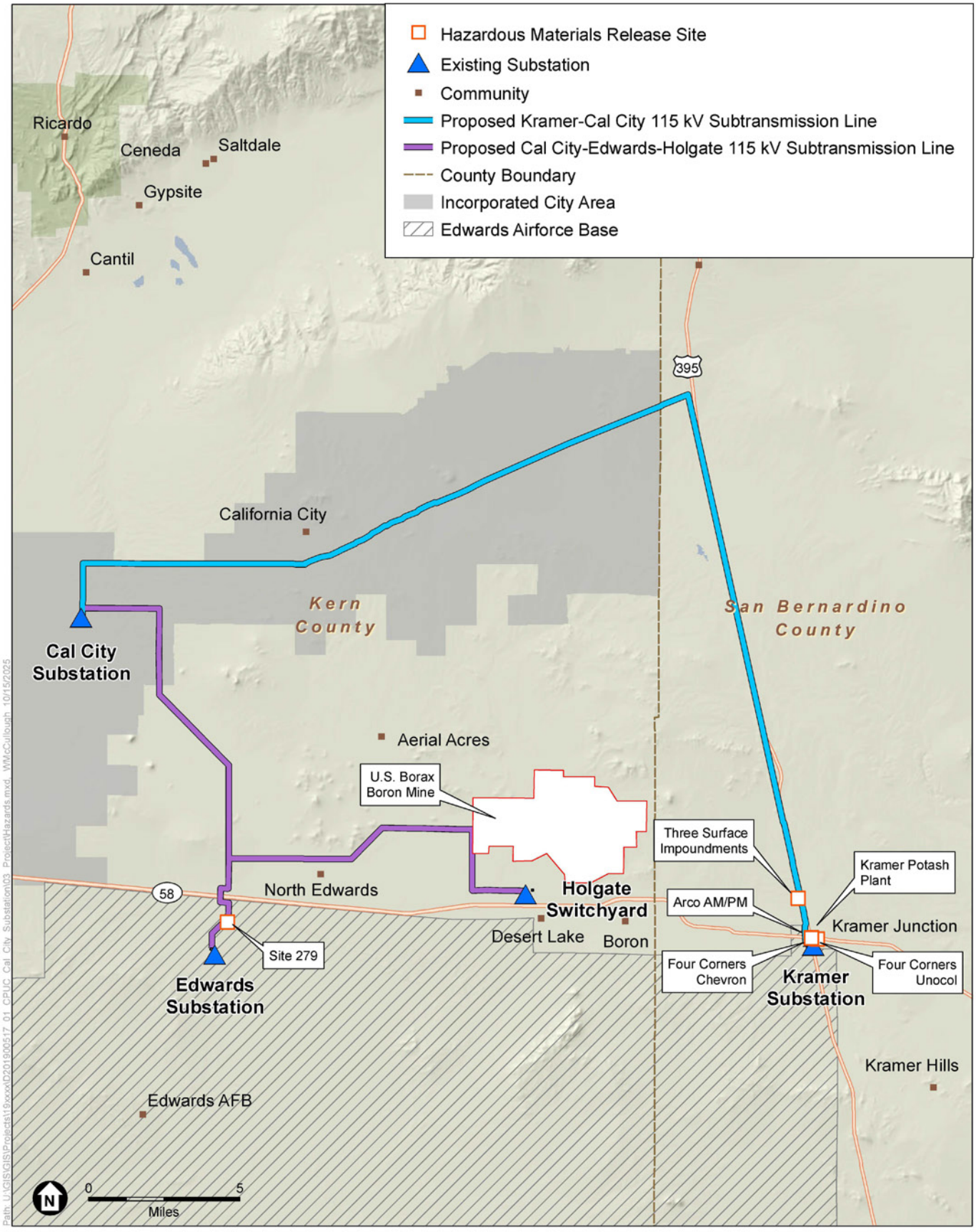
Four Corners Chevron is a closed LUST cleanup site in Kramer Junction approximately 500 feet west of Staging Area 1-10 (Lahontan RWQCB 2019a). Two gasoline underground storage tanks were closed in place, and one was removed in 1985. Subsequent investigation and remedial activities at the site included monitoring well installation, soil vapor extraction, periodic dual-phase (vapor and liquid) extraction, and free product removal. The Lahontan RWQCB issued a No Further Action letter on January 22, 2019, indicating that the RWQCB concluded that this site does not pose a risk to people or the environment. Given its history, residual gasoline may be present in soil at this site.

Four Corners Unocal

Four Corners Unocal is a closed LUST cleanup site located in Kramer Junction approximately 400 feet west of Staging Area 1-12 (see page 94 in Appendix A) in Kramer (Lahontan RWQCB 2018). Two gasoline underground storage tanks and one diesel underground storage tank were removed in 1990. Investigation and remedial activities at the site included monitoring well installation, soil vapor extraction, periodic dual-phase (vapor and liquid) extraction, and free product removal. The Lahontan RWQCB issued a No Further Action letter dated December 27, 2018, indicating that the RWQCB concluded that this site does not pose a risk to people or the environment. Residual gasoline may be present in soil at this site.

Four Corners Arco

Four Corners Arco AM/PM is a former LUST cleanup site in Kramer Junction 400 feet east of Staging Area 1-10 (see page 95 in Appendix A) in Kramer (Lahontan RWQCB 2019b). A release of 1,500 to 2,000 gallons of gasoline occurred in 2015. Cleanup activities at the site between 2016



SOURCES: ESA, 2023; SCE, 2023; EnviroStor, 2024; GeoTracker, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.9-1
Hazardous Material Release Sites

and 2018 included soil vapor extraction to remove the gasoline. Groundwater monitoring results indicated that the gasoline contamination did not reach groundwater. The Lahontan RWQCB issued a No Further Action letter dated February 25, 2019, indicating that the RWQCB concluded that this site does not pose a risk to people or the environment. Soil at this site could contain residual gasoline.

5725 Highway 58

On June 26, 2002, a truck driver backed into another trucker's fuel tank at a store at this address (EDR 2021). This location is about 400 feet east of LWS monopole 5007 and 5008 (see page 94 in Appendix A). The tank was punctured causing the release of 150 gallons of diesel fuel. The affected soil was cleaned up under the jurisdiction of the Kern County Environmental Health Services Department. This facility is not located on any Project component site.

U.S. Borax Boron Mine Facility

The U.S. Borax Boron Mine Facility is a mining facility that had leaks from active and inactive surface impoundments that reached the groundwater (Rio Tinto 2023). Chromium, boron, and arsenic are present in groundwater at the site. The extent of the plume of contaminants extends beneath the proposed Cal City-Edwards-Holgate subtransmission line alignment along Gephart Road. Extraction wells were installed to remove contaminated groundwater and contain the extent of contaminants. The depth to groundwater along Gephart Road ranged from about 208 to 217 feet below the ground surface during remediation activities that occur in January to April 2013.

Edwards Air Force Base

Edwards Air Force Base (EAFB) – Operable Unit (OU) 10 – Environmental Site Restoration Program (ERP) Site 279 was previously used as a staging area for past road work activities at EAFB (EAFB 2000). Approximately 450 cubic yards of waste asphalt, tar, and soil contaminated with tar were removed between December 1999 and January 2000. The remediated area at Site 279 is centered about 150 feet west of Rosamond Boulevard and 200 feet south of the chlorination station. DTSC issued a No Further Action letter in 2001, meaning that DTSC concluded this site does not pose a risk to people or the environment (DTSC 2001). The cleanup was conducted to U.S. Environmental Protection Agency (USEPA) Preliminary Remediation Goals, which are screening levels used by regulatory agencies to assess whether further investigation and cleanup is needed. This also means that residual levels of asphalt and tar may still be present at this site. Google Earth aerial photograph images from June 2023 show darkened soil at this location.

3.9.1.2 Proximity to Schools

The Project would be located within 0.25 miles of one school. California City High School is located approximately 0.25 miles southwest of the proposed new Cal City Substation boundary and 0.10 mile from proposed Staging Area 1-17.

3.9.1.3 Proximity to Airports

The California City Municipal Airport is located at 22636 Airport Way in California City, approximately 2 miles west of the proposed Kramer-Cal City 115 kV Subtransmission Line alignment and approximately 2.0 miles west-northwest of the proposed new Cal City Substation

boundary. However, no portion of the Project alignment is located within the planning boundary of the California City Municipal Airport and the Project area is not within the California City Municipal Airport Compatibility Zones, as noted in the Kern County Airport Land Use Compatibility Plan (ALUCP) (Kern County 2012).

The North EAFB airstrip is located about 0.8 miles west of the proposed Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment. Portions of the Project alignment are located on or adjacent to EAFB, which is not a public airport and does not have an ALUCP. Instead, EAFB has established restricted airspace zones at and around EAFB (EAFB 2021, 2023). The majority of the Project, except for the Cal City Substation, is located in restricted R-2515 airspace, which is the restricted airspace surrounding EAFB where flight testing, training operations, and precision bombing training are conducted. In addition, the Project is in restricted R-2508 airspace, a subset of R-2515 restricted airspace, which involves air combat maneuvering and efficiency flights, both of which involve low flying operations.

3.9.1.4 Wildland Fire Hazard

Within California, fire hazard severity zones are designated by the California Department of Forestry and Fire Protection (CAL FIRE) (2024). CAL FIRE uses a five-tiered ranking system to assess the threat to people based on fuel hazard, wildland fire potential, and housing density. As discussed in more detail in Section 3.20, *Wildfire*, the Project sites and alignments are located mostly in a Local Responsibility Area with "moderate" fire hazard severity; portions are designated as other moderate, other unzoned, or in a Federal Responsibility Area. Table 3.20-1 in Section 3.20, *Wildfire*, provides additional information about the fire hazard severity zones and jurisdictions potentially crossed by the proposed components of the Project. The Kramer-Cal City 115 kV Subtransmission Line and Cal City-Edwards-Holgate 115 kV Subtransmission Line alignments are located within areas with a moderate fire hazard severity. The California Public Utilities Commission (CPUC) High Fire Threat District (HFTD) map additionally indicates that the Project sites and alignments are not within a HFTD (CPUC 2021).

3.9.1.5 Unexploded Ordnance

The Edwards Substation and proposed Cal City-Edwards Holgate 115 kV Subtransmission Line alignment extend into EAFB, where there is the possibility of people encountering unexploded ordnance (UXO) on or near the base. A review of the EDR database report indicates that there is one UXO site located on the parcel adjacent to the eastern border of proposed Staging Area 1-2, at the intersection of Lorraine Avenue and 160th Street in North Edwards (EDR 2021). Further, EAFB has a long history of use as a military installation and UXO items are occasionally found throughout the base.

3.9.2 Regulatory Setting

3.9.2.1 Federal

The primary federal agencies with responsibility for hazards and hazardous materials management include the USEPA, U.S. Occupational Safety and Health Administration (OSHA), and the

U.S. Department of Transportation (DOT). Federal laws, regulations, and responsible agencies related to hazardous materials and hazards management are summarized in **Table 3.9-1**.

TABLE 3.9-1
RELEVANT FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDS AND HAZARDOUS MATERIALS

Classification	Federal Law or Responsible Federal Agency	Description
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, the USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave."
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the "cradle to grave" system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
	Toxic Substances Control Act (TSCA)	Code of Federal Regulation (CFR) Title 40 Chapter 1, Subchapter R – Toxic Substances Control Act – Part 761 Polychlorinated Biphenyls (PCBs) – covers the identification and sampling requirements for PCBs for disposal purposes.
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Materials Transportation	U.S. Department of Transportation (DOT)	DOT has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail [(49 CFR).
	U.S. Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR).
Structural and Building Components (Hazardous Building Materials [asbestos-containing materials, lead-based paint, polychlorinated biphenyls (PCBs])	Toxic Substances Control Act	Regulates the use and management of hazardous building materials and sets forth detailed safeguards to be followed during the disposal of such items.
	USEPA	The USEPA monitors and regulates hazardous materials used in structural and building components and their effects on human health.
Federal Regulation 49 CFR Part 77, Objects Affecting Navigable Airspace	Federal Aviation Administration (FAA)	Proximity to airports triggers the application of Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace, which sets forth criteria and requirements for proposed structures to be filed with the FAA for airspace safety review. Title 14, Part 77 of the CFR states that FAA notification is necessary for construction projects greater than 200 feet in height or those located within 20,000 feet of a public use airport that exceed a 100-to-1 surface ratio from any point on an airport's longest runway measuring more than 3,200 feet. The FAA review determines whether the proposed structures would constitute an obstruction or hazard to aircraft.
Instruction Memorandum Number 2022-036; Standard Stipulations for Fire Prevention and Control for Electric Transmission and Distribution Rights-of-Way	U.S. Bureau of Land Management (BLM)	BLM Instruction Memorandum Number 2022-036 provides guidance on the incorporation of appropriate fire prevention and control stipulations, as required by 43 CFR 2805.12(a)(4), for electric transmission and distribution right-of-way authorizations issued under Title V of the Federal Land Policy and Management Act (FLPMA).

3.9.2.2 State

The primary State agencies with responsibility for hazardous materials management in the region include the DTSC and the Lahontan RWQCB within the California Environmental Protection Agency (CalEPA), California Occupational Safety and Health Administration (Cal/OSHA), California Department of Public Health, California Highway Patrol (CHP), and the California Department of Transportation (Caltrans). State laws, regulations, and responsible agencies related to hazardous materials management are summarized in **Table 3.9-2**.

TABLE 3.9-2
RELEVANT STATE LAWS AND REGULATIONS RELATED TO HAZARDS AND HAZARDOUS MATERIALS

Classification	Law or Responsible State Agency	Description
Hazardous Materials Management	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program); Health and Safety Code Sections 25404 et seq.	Cal EPA adopted regulations in January 1996 that implemented the Unified Program at the local level. The agency responsible for implementation of the Unified Program is called the CUPA. For the Project area, the Kern County Public Health Services Department, Environmental Health Services Division and the San Bernardino County Fire Department, Hazardous Materials Division are the designated CUPAs.
	California Fire Code, Title 24, Chapter 9, California Code of Regulations and California Building Code, Part 2	The California Fire Code regulates the storage and handling of hazardous materials, including the requirement for secondary containment, separation of incompatible materials, and preparation of spill response procedures.
Hazardous Waste Handling	California Hazardous Materials Release Response Plan and Inventory Law of 1985	The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act) requires that businesses that store hazardous materials on-site prepare a Hazardous Materials Business Plan (HMBP) and submit it to the applicable local CUPA.
	California Hazardous Waste Control Act; California Health and Safety Code, Division 20, Chapter 6.5, Article 2, Section 25100, et seq.; DTSC	Under the California Hazardous Waste Control Act, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. DTSC is also the administering agency for the California Hazardous Substance Account Act. California Health and Safety Code, Division 20, Chapter 6.8, Sections 25300 et seq., also known as the State Superfund law, provides for the investigation and remediation of hazardous substances pursuant to State law. In addition, Health and Safety Code 25180 authorizes the DTSC or the local CUPA or the RWQCB to require responsible parties to cleanup spills and releases.
Hazardous Materials Transportation	Titles 13, 22, and 26 of the California Code of Regulations	Regulates the transportation of hazardous waste originating in and passing through the state, including requirements for shipping, containers, and labeling.
	CHP and Caltrans, California Vehicle Code, Chapter 5, Sections 31303 – 31309	These two state agencies are primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies.

Classification	Law or Responsible State Agency	Description
Occupational Safety	Cal/OSHA regulations (Title 8 CCR)	Cal/OSHA has primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the CFR. Cal/OSHA standards are generally more stringent than federal regulations. Requires employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.
Construction Storm Water General Permit (Construction General Permit; Order 2022-0057-DWQ, NPDES No. CAS000002)	Lahontan RWQCB	Dischargers whose project disturbs 1 or more acres of soil or where projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 of more acres, are required to obtain coverage under the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; Order 2022-0057-DWQ, NPDES No. CAS000002). Construction activity subject to this permit includes clearing, grading, grubbing, and other disturbances to the ground such as excavation and stockpiling but does not include regular maintenance activities performed to restore the original line, grade, or capacity of a facility. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific Best Management Practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area.
Underground Infrastructure	California Code of Regulations Section 4216-4216.9	Sections 4216-4216.9, "Protection of Underground Infrastructure," requires an excavator to contact a regional notification center (e.g., Underground Services Alert or Dig Alert) at least two days prior to excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert, the regional notification center for Southern California. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities are then notified and are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area.

Lahontan Regional Water Quality Board and California Department of Toxic Substances Control Cleanup Authorities

The primary agencies with responsibility for the cleanup of hazardous materials release sites include the Lahontan RWQCB and the DTSC. The RWQCB cleanup authority is from California Water Code Sections 13267 and 13304, and from State Water Resources Control Board Resolution No. 92-49, *Policies and Procedures for Investigation, Cleanup, and Abatement of Discharges under Water Code Section 13304*; Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*; and Resolution No. 88-63, *Sources of Drinking Water*. The DTSC cleanup authority is from California Code of Regulations (CCR) at

Title 22 Social Security, Division 4.5, *Environmental Health Standards for the Management of Hazardous Waste*.

California Public Utilities Commission General Orders and Related Codes

California Public Utilities Commission General Order 95—Overhead Electric Line Construction

General Order 95 includes rules and other requirements for overhead line design, construction, and maintenance, the proper application of which would ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation, or use of overhead lines and to the public in general.

California Public Utilities Commission General Order 166—Standards for Operation, Reliability, and Safety During Emergencies and Disasters

The purpose of the standards contained in CPUC General Order 166 is to ensure that jurisdictional electric utilities are prepared for emergencies and disasters in order to minimize damage and inconvenience to the public which may occur as a result of electric system failures, major outages, or hazards posed by damage to electric distribution facilities. The standards require that each publicly traded electric utility prepare an emergency response plan and update the plan annually, conduct annual emergency training and exercises using the utilities emergency response plan, and coordinate emergency plans with state and local public safety agencies.

California Public Utilities Commission Fire Safety Rulemaking Background

In October 2007, devastating wildfires driven by strong Santa Ana winds burned hundreds of square miles in Southern California. Several of the worst wildfires were reportedly ignited by overhead utility power lines and aerial communication facilities in close proximity to power lines. In response to these wildfires, the CPUC initiated Rulemaking (R.) 08-11-005 to consider and adopt regulations to protect the public from potential fire hazards associated with overhead powerline facilities and nearby aerial communication facilities.

Beginning in 2009, the CPUC issued several decisions in R.08-11-005 that together adopted dozens of new fire-safety regulations. Most of the adopted fire-safety regulations consisted of new or revised rules in General Order 95. Several of the adopted fire-safety regulations apply only to areas, referred to as “high fire-threat areas,” where there is an elevated risk for power line fires to ignite and spread rapidly. These high fire-threat areas are designated by several maps that were adopted on an interim basis. Each of the interim maps cover a different part of the state and uses its own methodology for identifying high fire-threat areas, presenting consistency and potential enforcement issues. To address these issues, the CPUC also commenced the development of a single statewide fire-threat map to designate areas where (1) there is an elevated risk for destructive power line fires, and (2) stricter fire-safety regulations should apply.

In May 2015, the CPUC closed R.08-11-005 and initiated successor rulemaking R.15-05-006 to complete the outstanding tasks in R.08-11-005. The general scope of R.15-05-006 was to address the following matters carried over from the scope of R.08-11-005: (1) develop and adopt a statewide fire-threat map that delineates the boundaries of a new HFTD where the previously adopted regulations would apply, (2) determine the need for additional fire-safety regulations in

the HFTD, and (3) revise General Order 95 to include a definition and maps of the HFTD, as well as any new fire-safety regulations. The scope and schedule for R.15-05-006 was divided into two parallel tracks. One track focused on the development and adoption of a statewide fire-threat map. The second track focused on the identification, evaluation, and adoption of fire-safety regulations in the HFTD.

On December 21, 2017, the CPUC issued Decision (D.) 17-12-024 adopting regulations to enhance fire safety in the HFTD, effectively completing the second track of R.15-05-006 described above. On January 19, 2018, the CPUC adopted, via Safety and Enforcement Division's (SED) disposition of a Tier 1 Advice Letter, the final CPUC Fire-Threat Map. The adopted CPUC Fire-Threat Map, together with the map of Tier 1 High Hazard Zones on the U.S. Forest Service-CAL FIRE joint map of tree mortality High Hazard Zones, comprise the HFTD Map where stricter fire-safety regulations apply.

Public Resources Code Sections 4201–4204

Public Resources Code Sections 4201–4202 require:

- The classification of lands within state responsibility areas in accordance with the severity of fire hazard present for the purpose of identifying measures to be taken to retard the rate of spreading and to reduce the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property.
- The classification of lands within state responsibility areas into fire hazard severity zones. Each zone shall embrace relatively homogeneous lands and shall be based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified by the department as a major cause of wildfire spread.
- The designation of fire hazard severity zones and assignation to each zone a rating reflecting the degree of severity of fire hazard that is expected to prevail in the zone.
- The periodic review of zones designated and rated pursuant to this article and, as necessary, the revision of zones or their ratings or repeal the designation of zones.

Public Resources Code Sections 4292 and 4293

Public Resources Code Section 4292 requires a 10-foot clearance of any tree branches or ground vegetation from around the base of power poles carrying more than 110 kV. The firebreak clearances required by Public Resources Code Section 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead end or corner pole. Section 4293 presents guidelines for line clearance including a minimum of 10 feet of vegetation clearance from any conductor operating at 110 kV or higher.

3.9.2.3 Local

CPUC General Order 131-E explains that local land use regulations would not apply to the Project. However, for informational purposes, the plans, policies, and other planning documents pertaining to hazards and hazardous materials that would otherwise be relevant to the Project and alternatives are described below.

Certified Unified Program Agency

As discussed above under state regulations, the CUPA is the agency certified by the DTSC to conduct the Unified Program. The program consists of hazardous waste generator and on-site treatment programs, aboveground and underground storage tank programs, Hazardous Materials Management, Business Plans, and Inventory Statements, and the Risk Management and Prevention Program. The Kern County Public Health Services Department, Environmental Health Services Division is the CUPA responsible for administering the hazardous materials program within Kern County. San Bernardino County Fire Department, Hazardous Materials Division, is the CUPA responsible for administering the hazardous materials and wastes programs within San Bernardino County.

Kern County

Kern County General Plan

The Kern County General Plan Safety Element provides specific policies to identify and reduce hazards to protect and guide future development within the County (Kern County 2009). The primary objective of the Safety Element is to reduce injuries, death, property damage, and economic and social impact from hazards. Related policies include natural hazard protocols and implementation of multiple regulatory plans such as the adopted Kern County, California Multi-Hazard Mitigation Plan, Uniform Fire Code, and Kern County Emergency Plan. There are no hazards and hazardous materials policies that would be directly applicable to the Project.

Kern County Multi-Jurisdiction Hazard Mitigation Plan

Kern County and several participating jurisdictions prepared a Comprehensive Update to the Kern County Multi-Jurisdiction Hazard Mitigation Plan in 2020, originally approved by Federal Emergency Management Agency in 2012 (Kern County 2021, 2022). The purpose of this plan is to guide hazard mitigation planning to better protect the people and property of the County from the effects of natural disasters and hazardous events, such as severe weather, floods, and earthquakes. The plan demonstrates the commitment of each participating jurisdiction to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources.

Kern County Airport Land Use Compatibility Plan

The Kern County ALUCP (Kern County 2012) contains goals, policies, and implementation measures that aim to avoid creating aviation hazards, and to protect the lives and property of nearby residents and other occupants. The Kern County ALUCP includes airport hazard overlay districts for seventeen airports, including the California City Municipal Airport, and military aviation.

Specific policies and measures that address military aviation concerns are included in the Kern County ALUCP to ensure development that encroaches established bases and operations occur in balance with present and future flight operation capabilities that meet mission requirements with public health, safety, quality of life, and economic stability of neighboring communities. There are no policies in the ALUCP applicable to the Project.

San Bernardino County

San Bernardino County Multi-Jurisdiction Hazard Mitigation Plan

San Bernardino County and several participating jurisdictions prepared a Comprehensive Update to the San Bernardino County Multi-Jurisdiction Hazard Mitigation Plan in 2017, originally approved by the Federal Emergency Management Agency in 2011 (San Bernardino County 2017). The purpose of this plan is to reduce and/or eliminate risk and loss of life and property in the unincorporated areas of the County from the effects of hazard events, such as wildfire, earthquakes, and floods. The plan demonstrates the commitment of each participating jurisdiction to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources.

San Bernardino Countywide Policy Plan

The Hazards Element of the San Bernardino Countywide Plan, County Policy Plan identifies potential natural and human-generated hazards, provides direction to address risks to residents, businesses, workers, and visitors, and prioritizes resources and reduces pollution exposure in unincorporated disadvantaged communities (San Bernardino County 2020). The following policies are relevant to the Project and state the following:

> ***Policy HZ-1.7: Underground utilities.*** We require that underground utilities be designed to withstand seismic forces, accommodate ground settlement, and hardened to fire risk.
>
> ***Policy HZ-2.4: Truck routes for hazardous materials.*** We designate truck routes for the transportation of hazardous materials through unincorporated areas and prohibit routes that pass through residential neighborhoods to the maximum extent feasible.

City of California City

City of California City General Plan, Safety Element

The City of California City General Plan 2009-2028 Safety Element contains policies and implementation measures that seek to reduce the potential for the loss of life, injuries, and property damage associated with natural and human-induced hazards, such as fire and aircraft over flight hazards (City of California City 2009). Safety Element policies pertaining to human-induced hazards are as follows:

- Require all generators and processors of hazardous waste develop long-term waste management programs in compliance with all applicable federal, state, county, and local requirements.
- Ensure that hazardous materials used by commercial and industrial land uses are properly transported, handled, and used, and that information on their handling, transport, and use is available to the California City Fire Department and other safety agencies in accordance with the Fire Code.
- Require that new development proposals be consistent with the Kern County Airport Land Use Compatibility Plan in order to eliminate hazards due to land use conflicts with the California City Municipal Airport, the Mojave Airport, EAFB, and other military over flight activities.
- Reduce the risk of potential spills and exposures to hazards and hazardous materials due to ground transportation by roadway and railway systems.

- Coordinate with the State to identify and monitor hazardous sites located within and/or adjacent to the General Plan Planning Area.

3.9.3 Applicant Proposed Measures and Best Management Practices

3.9.3.1 Applicant Proposed Measures

Southern California Edison (SCE) has identified the following Applicant proposed measures (APMs) to minimize impacts on hazards and hazardous materials from the Project. The impact analysis assumes that the APMs would be implemented (i.e., as part of the Project) to reduce impacts to hazards and hazardous materials as discussed below.

- **APM HAZ-1:** SCE will prepare and implement a HMMP/Hazardous Materials Business Plan during project construction. The program will outline proper hazardous materials handling, use, storage, and disposal requirements, as well as hazardous waste management procedures. This plan will be developed to ensure that all hazardous materials and wastes will be handled and disposed of according to applicable rules and regulations. The HMMP will address: the types of hazardous materials to be used during the Project, hazardous materials storage, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous materials release containment/control procedures, hazard communication training, personal protective equipment (PPE) training, and release reporting requirements. It will also include fueling and maintenance procedures for helicopters and construction equipment.

- **APM HAZ-2:** A Soil Management Plan will be developed and implemented for the Proposed Project. The Soil Management Plan will provide guidance for the proper handling, on-site management, and disposal of impacted soil that may be encountered during construction activities.

- **APM HAZ-3:** Prior to construction, SCE shall consult with the FAA regarding helicopter flight plans that will take place during construction. This consultation will would include but not be limited to:

  – Providing locations of helicopter construction staging and work areas

  – Establishing designated flight corridors between staging and work areas

  – Means to ensure external load operations avoid occupied structures and roadways

  – Locations of traffic control where external load operations will cross public roadways

  – Locations where Congested Area Plans may be required for filing with the FAA

  – Identifying any flight restrictions recommended/required by the FAA

  The results of this coordination will be provided to the CPUC.

- **APM HAZ-4:** All workers on the project site shall be required to attend a Worker's Environmental Awareness Training Program (WEAP). The training shall inform all construction personnel of the UXO avoidance measures, including general precautions as well as specific procedures to be followed upon the discovery of UXO. The WEAP training will include, at a minimum, the following topics so crews will understand their obligations:

- Safety and situational awareness in areas where UXO are likely to be encountered
- Identification of UXO
- Work stoppage and work area evacuation
- Communication protocol
- Treatment of UXO, including avoiding disturbance of the UXO and flagging the item with a visible marker, if it may be done safely
- Consequences of non-compliance

3.9.3.2 Best Management Practices

SCE has also proposed implementation of best management practices (BMPs) that are based on California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook* (SCE 2023, 2024). The BMPs listed below are considered part of the Project for the purposes of this CEQA analysis.

- **BMP WM-4, Spill Prevention and Control.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training applicable employees.
- **BMP WM-6, Hazardous Waste Management.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of applicable employees and subcontractors.
- **BMP WM-7, Contaminated Soil Management.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

3.9.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to hazards and hazardous materials if it would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

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

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area;

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

The CPUC has identified additional CEQA impact criteria that are specific to the types of projects evaluated by the CPUC to be considered in addition to the criteria identified in Appendix G of the CEQA Guidelines (CPUC 2019). The Project would also result in a significant impact related to hazards and hazardous materials if it would:

h) Create a significant hazard to air traffic from the installation of new power lines and structures;

i) Create a significant hazard to the public or environment through the transport of heavy materials using helicopters;

j) Expose people to a significant to a significant risk of injury or death involving unexploded ordnances; or

k) Expose workers or the public to excessive shock hazards.

3.9.5 Direct and Indirect Effects

3.9.5.1 Approach to the Analysis

This environmental analysis of the potential impacts related to hazards and hazardous materials from the construction, operation, and maintenance of the Project is based on a review of the results of the site-specific investigations; a review of literature and database research; the Kern County, San Bernardino County, and City of California City general plans; information regarding proposed construction details; and potential uses and associated operations at the Project sites and alignments based on information provided in Chapter 2, *Project Description*.

The Project would be regulated by the laws, regulations, plans, and policies summarized in Section 3.9.2, *Regulatory Setting*. This analysis assumes that the Project would comply with applicable federal, state, and local laws and regulations. This analysis also assumes that local and state agencies will continue to enforce applicable requirements to the extent that they do so now.

After considering the implementation of the Project described in Chapter 2, *Project Description*, and compliance with the required regulatory requirements, the environmental analysis below identifies whether the defined significance thresholds would be exceeded and whether a significant impact would occur. For those impacts considered to be significant, mitigation measures are proposed to reduce the identified impacts.

3.9.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Criterion b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact 3.9-1: The Project would involve the routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment. (*Less than Significant*)

Construction

During the Project's construction phase, construction equipment and materials would be used that include fuels, oils and lubricants, solvents and cleaners, cements and adhesives, paints and thinners, degreasers, cement and concrete, and asphalt mixtures, all of which are commonly used in construction. The limited use of fuels, lubricants, and cleaning solvents (see Table 2-6, *Anticipated Types, Uses, and Volumes of Hazardous Materials*, in Chapter 2, *Project Description*) during construction would be for powering and lubricating internal combustion engines, other construction equipment and hardware, and for cleaning purposes. No herbicides or pesticides are planned to be used during construction.

The Project's routine uses of hazardous materials could result in an accidental spill or leak that could cause an inadvertent release of hazardous materials, which could adversely affect construction workers, the public, and the environment. As discussed in Section 3.8.2, *Regulatory Setting*, in Section 3.8, *Geology, Soils, and Paleontological Resources*, contractors would be required to prepare a storm water pollution prevention plan (SWPPP) for construction activities. The SWPPP would list the hazardous materials proposed for use during construction; describe spill prevention measures; describe fuel and chemical storage procedures; identify protocols for responding to spills immediately; and describe BMPs for controlling site runoff. In addition, the transport of hazardous materials would be regulated by the U.S. Department of Transportation (Caltrans) and the CHP. Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications designed to minimize the risk of an accidental release of hazardous materials during routine use and transportation.

All hazardous waste would be stored, handled, and used in accordance with applicable regulations described in Section 3.9.2, *Regulatory Setting*, to ensure that hazardous materials would be transported, used, stored, and disposed of in a safe manner to protect worker safety, and to reduce the potential for a release of construction-related fuels and other hazardous materials into the environment, including stormwater and downstream receiving water bodies. Contractors would be required to prepare and implement hazardous materials business plans (HMBPs required by the Business Plan Act) that would require that hazardous materials used during construction would be used properly and stored in appropriate containers with secondary containment to contain a

potential release. The California Fire Code also requires measures for the safe storage and handling of hazardous materials.

Safety Data Sheets would be made available to all crew members at the construction sites. SCE crews and/or SCE's construction contractor would implement proper hazardous waste management activities, which would include preparation and implementation of a Project-specific HMBP as specified in APM HAZ-1 (see Section 3.9.1.1) and required by the Business Plan Act. The plan would include safety information regarding the transport, use, and disposal of hazardous waste. In addition, all transport, use, and disposal of hazardous waste would occur in compliance with applicable laws, rules, and regulations. Additionally, BMP WM-4, *Spill Prevention and Control*, BMP WM-6, *Hazardous Waste Management*, and BMP WM-7, *Contaminated Soil Management*, would be implemented, which would prevent or reduce discharge of hazardous materials into stormwater and drainage systems.

Finally, in the event of an accidental spill that could release hazardous materials at a Project site, federal, state, and local agencies would provide a coordinated response and assess the situation as needed. Among those responding would be the Kern County Fire, Rescue & HazMat Branch, the San Bernardino County Fire Hazardous Materials Branch, and the Edwards Air Force Base Fire Department.

The required compliance with the numerous laws and regulations discussed above that govern the transportation, use, handling, and disposal of hazardous materials and implementation of APMs and BMPs would limit the potential for the Project to create hazardous conditions from the routine use or accidental release of hazardous materials. Therefore, assuming compliance with these regulatory requirements and Project commitments, the impact would be **less than significant**.

Operation

Normal operation of the Project substations, switchyard, and subtransmission lines would be controlled remotely through SCE's control systems and manually in the field as required. All existing substations and the switchyard that would be modified by the Project are unmanned and would continue to function controlled remotely. For transformers/switches, substation and switchyard personnel would perform an annual visual inspection and an annual dissolved-gas analysis and fluid quality oil test on all oil-filled compartments in accordance with General Order 174, *Rules for Electric Utility Substations*, which sets forth requirements for electric substation facilities regarding inspection.

Operation and maintenance would involve the treatment of wood poles, the use of fuels, lubricants, and cleaning solvents. All hazardous waste would be stored, handled, and used in accordance with applicable regulations. Safety Data Sheets would be made available to all crew members at the construction sites. SCE crews and/or SCE's construction contractor would implement proper hazardous waste management activities, which would include preparation and implementation of a Project-specific Hazardous Materials Business Plan as specified in APM HAZ-1 (see Section 3.9.1.1). The plan would include safety requirement information regarding the transport, use, and disposal of hazardous waste. In addition, all transport, use, and disposal of hazardous waste would occur in compliance with applicable laws, rules, and regulations.

The required compliance with the numerous laws and regulations discussed above that govern the transportation, use, handling, and disposal of hazardous materials and implementation of APM HAZ-1 would limit the potential for the Project to create hazardous conditions from the routine use or accidental release of hazardous materials. Therefore, assuming compliance with these regulatory requirements and Project commitments, the impact would be **less than significant**.

Mitigation: None required.

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

Impact 3.9-2: The Project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing school. (*Less than Significant*)

California City High School is located approximately 0.25 miles southwest of Cal City Substation and 0.1 mile from proposed Staging Area 1-17. The use and transportation of hazardous materials could result in exposures or inadvertent releases, which could adversely affect children and staff at this school. As discussed in Impact 3.9-1, all hazardous materials associated with the Project would be subject to the regulations that govern the transportation, use, handling, and disposal of hazardous materials, which would limit the potential for the Project to create hazardous conditions from the routine use or accidental release of hazardous materials.

In addition to the routine use of hazardous materials, minor spills of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, could occur during construction. If such spills were to occur within 0.25 miles of a school, they could result in a significant impact. However, with implementation of spill prevention and containment measures BMP WM-4, BMP WM-6, and BMP WM-7, such spills would be limited in volume and would not migrate off-site. Following these BMPs and associated regulations, the hazardous materials impact at California City High School would be **less than significant**.

In addition to hazardous materials, hazardous emissions resulting from construction of the Project would include the temporary and short-term generation of diesel particulate matter (DPM) emissions from the use of off-road diesel equipment and from construction material deliveries and debris hauling using on-road heavy-duty trucks. Impact 3.3-3 in Section 3.3, *Air Quality*, discusses construction emissions of DPM that could expose sensitive receptors to harmful pollutant concentrations. As described in Air Quality Impact 3.3-3, the health (cancer) risk impact from the short-term DPM emissions in the vicinity of Cal City Substation would be less than significant. Therefore, impacts from DPM emissions near California City High School would be **less than significant**.

Mitigation: None required.

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

Impact 3.9-3: The Project would create a hazard to the public or the environment by being located on and adjacent to sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. (*Less than Significant*)

As discussed in Section 3.9.2, *Environmental Setting*, the Project would be located on and adjacent to hazardous materials sites compiled pursuant to Government Code Section 65962.5, referred to as the Cortese List. Specifically, Section 3.9.1, *Environmental Setting, Hazardous Materials Sites*, identifies eight hazardous materials sites located on or close to Project component sites.

Construction

Construction activities associated with the Project, including site preparation, excavation, and construction would occur on or near the previously discussed hazardous materials sites. Construction activities in these areas could potentially encounter hazardous materials which would create a hazard risk to construction workers, the public, and/or the environment.

To prevent potential health hazards to construction workers, the public, and the environment from exposure to hazardous materials from previous land uses, the Project would adhere to multiple APMs and BMPs, detailed in Section 3.9.3.1, *Applicant Proposed Measures*, and Section 3.9.3.2, *Best Management Practices*, respectively. APM HAZ-1 would require SCE to create standards for employee training, hazard recognition, hazardous materials release containment and control procedures, among other hazardous materials standards. APM HAZ-2 would require the development of a Soil Management Plan. The Soil Management Plan would provide guidance for the proper handling, on-site management, and disposal of impacted soil that may be encountered during construction activities. BMP WM-7, Contaminated Soil Management General Plan, will be implemented. BMP WM-7 would reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

In the event that suspected contamination or previously unidentified USTs, for example, are discovered during construction activities, DTSC or the Lahontan RWQCB would be notified for and would assume regulatory oversight of characterization of suspect materials per their regulatory authorities (see Section 3.9.2, *State*, under *Lahontan Regional Water Quality Control Board and California Department of Toxic Substances Control Cleanup Authorities*). Upon confirmation of contamination, a remediation plan pursuant to Section 25180 of the California Health and Safety Code and approved by the appropriate oversight agency or authority must be implemented at the site.

Adherence to these existing federal and state regulations, and the implementation of applicable APMs and BMPs would ensure that potential exposure of people and the environment to existing contaminated soils would be reduced. Therefore, construction activities associated with these

Project components would not be anticipated to disturb contaminated soil that would create a significant hazard to the public or the environment. This impact would be less than significant.

Operation and Maintenance

Operation and Maintenance, as discussed in Chapter 2, *Project Description*, would occasionally require activities such as washing insulators, access road maintenance, etc. These activities could potentially occur in proximity to hazardous materials sites and could create a hazard to the public or the environment if ground disturbance is required. However, any ground-disturbing activities related to operation and maintenance would be subject to the APMs and BMPs outlined in Section 3.9.3, *Applicant Proposed Measures and Best Management Practices*, as well as existing federal and state regulations outlined in Section 3.9.2, *Regulatory Setting*. Adherence to these measures would reduce any impacts to **less than significant**.

Mitigation: None required.

Criterion e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the project area?

Construction and operation and maintenance activities would not result in a safety hazard relative to a public airport. *(No Impact)*

California City Municipal Airport is located at 22636 Airport Way in California City, approximately 2 miles west of the Project alignment along 90th Street and the Cal City Substation. However, no portion of the Project is located within the planning boundary of the California City Municipal Airport. The Project area is not within the California City Municipal Airport Compatibility Zones as noted in the Kern County ALUCP. Therefore, there would be no impact associated with public airports.

Hazards relative to the EAFB are analyzed further below in Impact 3.9-6.

Criterion f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Project operations would not interfere with an adopted emergency response plan. *(No Impact)*

Project O&M would include annual routine maintenance trips, inspection, and as-needed management activities (e.g., vegetation trimming). Normal operations of the substations/switchyard and subtransmission lines would be controlled remotely through SCE's control systems and manually in the field as required. Annual visual inspections would occur at the substations/ switchyard and along the Project alignments. In other words, these activities would be conducted within either substation/switchyard properties, access roadways, or structure pads. In addition, as described in Section 3.17, *Transportation*, O&M activities would be nominal compared to existing traffic conditions in the area, resulting in no impact on emergency response. For these

reasons, Project operations would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact 3.9-4: Project construction could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (*Less than Significant with Mitigation*)

As discussed in Section 3.17, *Transportation*, construction activities for the Project may require temporary road and/or lane closures on public roads in residential areas and the Project would involve the movement of oversized vehicles transporting construction materials that could affect emergency vehicle access along the Project alignments. In addition, helicopters would be used to transport construction equipment that could potentially be ferried across major roads or crossings, which may require temporary road closures that could have a potential negative impact on traffic. As discussed in Chapter 2, *Project Description*, SCE would obtain encroachment permits from the local jurisdictions and Caltrans, as appropriate, for lane or roadway closures. Closures of private driveways would be coordinated with the respective landowners. Furthermore, as stated in Impact 3.9-7, the Project would integrate APM HAZ-3, which would require further communication with the FAA regarding construction helicopter flight plans and locations of traffic control where external load operations would cross public roadways. There are no established evacuation routes in the Project area; however, traffic in the area may be adversely affected, which could cause a significant impact associated with physical interference of an adopted emergency response plan.

As discussed under Impact 3.17-3, in Section 3.17, *Transportation*, it is recommended that SCE be required to implement Mitigation Measure 3.17-2a, *Traffic Management Plan*, to reduce the temporary effects on emergency service provider access due to construction-related lane closures. Implementation of Mitigation Measure 3.17-2a would also reduce the impact of physical interference of an adopted emergency response plan to a **less-than-significant** level.

Mitigation: Mitigation Measure 3.17-2a, *Traffic Management Plan*.

Significance after Mitigation: Less than Significant.

Criterion g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Impact 3.9-5a: Project construction could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. (*Less than Significant with Mitigation*)

Fires can be started from vehicles or equipment if sparks or high heat are emitted, thus construction personnel can be exposed to fire dangers if a fire were to start. As discussed in Section 3.20, *Wildfire*, the Project sites and alignments are located mostly in a Local Responsibility Area with moderate fire hazard severity; portions are designated as other moderate, other unzoned, or in a Federal Responsibility Area. Table 3.20-1 in Section 3.20, *Wildfire*, identifies the Kramer-Cal City 115 kV Subtransmission Line and the Cal City-Edwards-Holgate 115 kV Subtransmission Line

alignments as located within areas with a moderate fire hazard severity. None of the Project sites are near any land designated as a having a high or very high probability for fire (CAL FIRE 2024).

As described in Chapter 2, *Project Description*, Section 2.7.14, *Fire Prevention and Response*, SCE would implement standard fire prevention protocols during construction activities and would comply with applicable laws and regulations. Furthermore, prior to construction, staging areas would be grubbed/trimmed of vegetation and graded before the staging of equipment. In areas where overland travel may occur, dry vegetation would also be trimmed. Such activities would minimize the potential for vehicles or equipment to start a fire. Risk to personnel would most likely come from the inability to avoid or escape a wildland fire, which would have a significant impact. Accordingly, as discussed in Section 3.17, *Transportation*, the Project would implement Mitigation Measure 3.17-2a, *Traffic Management Plan*, in accordance with required encroachment permits, which would address this potential scenario.

SCE participates with CAL FIRE, the California Office of Emergency Services (OES), and various city and county fire agencies in the Red Flag Fire Prevention Program and complies with Public Resources Code Sections 4292 and 4293 related to vegetation management in transmission line corridors. In the event that the National Weather Service issues a Red Flag Warning during construction of the Project, additional measures would be implemented to address smoking and fire rules, storage and parking areas, the use of gasoline-powered tools, the use of spark arresters on construction equipment, road closures, the use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. Work areas within the Project alignment would generally be cleared of vegetation and graded prior to the staging of equipment, minimizing the risk of construction vehicles starting a fire. Impacts would therefore be **less than significant**.

Mitigation: Mitigation Measure 3.17-2a, *Traffic Management Plan.*

Significance after Mitigation: Less than Significant.

Impact 3.9-5b: Project operation and maintenance could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. (*Less than Significant*)

Operation of approximately 70 miles of new subtransmission lines and expansion of the Cal City substation may pose a fire hazard if a conducting object comes near a line or when a live-phase conductor falls to the ground. Additionally, there is risk of fire danger from operating vehicles and other equipment off roadways during maintenance. As stated in Section 3.20, *Wildfire*, Operation and Maintenance of the Project would be conducted in compliance with existing state and federal laws, rules, regulations, and CPUC standards. SCE would also follow state vegetation and tree clearing requirements from CPUC General Order 95 and Public Resources Code Section 4293, which stipulate that vegetation management activities of electrical transmission lines are the expressed responsibility of the person that owns, control, operates or maintains the line. In the case of the Project, SCE would be required to maintain a vegetation distance of 10 feet between transmission lines and vegetation.

While the Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips, Project O&M activities would be located within existing SCE

owned and/or new ROWs where vegetation would be cleared or trimmed as part of regular O&M. Vehicles and equipment would primarily use existing and proposed roads. SCE would continue to implement its standard fire prevention protocols during O&M activities, including the mandated Wildfire Management Plan; comply with applicable laws and regulations; implement additional measures in the event of a Red Flag Warning during operation; and participate with CAL FIRE and other city and county fire agencies in the Red Flag Fire Prevention Program (in compliance with Public Resources Code Sections 4292 and 4293 relating to vegetation management in subtransmission line corridors). Therefore, this impact would be **less than significant**.

Mitigation: None required.

Criterion h) Create a significant hazard to air traffic from the installation of new power lines and structures?

Impact 3.9-6: The Project could create a significant hazard to air traffic from the installation of new power lines and structures. (*Less than Significant with Mitigation*)

Construction of new power lines and structures would require the use of helicopters that could have the potential to create a significant hazard to air traffic. Furthermore, the height of new power lines or structures in a restricted air space may interfere with or create a significant hazard to air traffic. The height of new power lines and structures and the equipment used to install and maintain these structures could potentially interfere with air traffic or military air flights.

As discussed in Section 3.9.1.3, portions of the Project's Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment are located on or adjacent to EAFB, and within restricted airspace (i.e., R-2508 and 2515 restricted airspace). Military flights and construction and maintenance flights for the power lines could potentially result in a safety hazard for people working in the Project area. Project structures and construction equipment such as cranes and helicopters could interfere with the restricted airspace. In addition, construction and operation of the Project would require the use of helicopters that could interfere with R-2515 and/or R-2508 airspace and could result in a safety hazard for people residing or working in the Project area.

Due to the potential safety hazards associated with short-term construction equipment and permanent structures near EAFB airspace, as well as the use of helicopters in restricted airspace, impacts would be potentially significant. Implementation of Mitigation Measure 3.9-6a and Mitigation Measure 3.9-6b would ensure that impacts would be reduced to a **less-than-significant** level.

Mitigation Measure 3.9-6a: EAFB Communication Plan.

SCE shall prepare and implement an EAFB Communication Plan in accordance with standards set forth in the R-2508 User Handbook and the R-2515 User Handbook. SCE will coordinate with both the R-2508 Central Coordinating Facility (CCF) and the R-2515 Airspace Management Office prior to the commencement of subtransmission line construction and operational maintenance activities.

In areas designated as R-2515 Airspace, SCE shall establish flight schedules and paths in accordance with EAFB Aircraft and Air/Ground Support Scheduling Guide available on the R-2515 public website and with coordination with the R-2515 Airspace Management Office. SCE shall also be required to:

- Provide annual briefings to EAFB during the construction of the Project,
- Identify any flight restrictions recommended/required by EAFB,
- Avoid No-Fly zones such as the Air Force Research Lab, the Boron mine property, and the Edwards Main Base.

Mitigation Measure 3.9-6b: EAFB Obstruction Evaluation.

Based on information obtained through preparation of the EAFB Communication Plan and any other follow-up coordination with EAFB, SCE shall prepare an obstruction evaluation for Project structures proposed to be within restricted airspace by EAFB. The evaluation shall be provided to EAFB's R-2508 Central Coordinating Facility (CCF) and/or the R 2515 Airspace Management Office for review and input. EAFB may recommend alterations to Project design, including height reduction, the addition of lighting, or the placement of marker balls/wire spans. SCE shall review the EAFB recommendations for reasonableness and feasibility and in accordance with EAFB requirements and make any necessary design alterations.

Significance after Mitigation: Less than Significant.

Criterion i) Create a significant hazard to the public or environment through the transport of heavy materials using helicopters?

Impact 3.9-7: The Project could create a significant hazard to the public or environment through the transport of heavy materials using helicopters. (*Less than Significant with Mitigation*)

Construction

Light- and medium- duty helicopters would be used to support construction activities for the Project. Activities by helicopters would include transportation of construction workers, delivery of equipment and materials to construction work area, hardware installation, marker ball installation (if applicable), conductor and cable stringing operations, delivery of equipment and materials to structure sites, installation of poles and structures, and removal of existing structures, if necessary. Heavy-duty helicopters would not be used during construction; however, heavy materials may be transported using helicopters during construction, which could potentially create a significant hazard to the public or environment. The hazard would be from potential collisions or accidental releases of heavy materials during flight.

Flight paths would be determined immediately before construction by the helicopter contractor. Flight paths would be filed with the appropriate authorities, including the FAA. Given that the entire Project would be in restricted airspace, as discussed in Impact 3.9-6, SCE would also be required to implement Mitigation Measure 3.9-6a. Mitigation Measure 3.9-6a would require further communication with the EAFB regarding construction helicopter flight plans, occupied

structures and roadways avoidance measures, and locations of traffic control where external load operations would cross public roadways. In addition, APM HAZ-3 would require SCE to notify the FAA of helicopter flight plans. Implementation of Mitigation Measure 3.9-6a: EAFB Communication Plan would reduce this impact to less than significant.

Operation and Maintenance

O&M-related helicopter activities could include transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor or OPGW stringing operations. Helicopters therefore may transport heavy materials during O&M, which could create a significant hazard to the public. Implementation of Mitigation Measure 3.9-6a is recommended in order to reduce this impact.

Mitigation: Mitigation Measure 3.9-6a, *EAFB Communication Plan*.

Significance after Mitigation: Less than Significant.

Criterion j) Expose people to a significant to a significant risk of injury or death involving unexploded ordnances?

Impact 3.9-8: The Project could expose people to a risk of injury or death involving unexploded ordnances. (*Less than Significant*)

Construction

As discussed in Section 3.9.1.6, *Unexploded Ordnance*, the Edwards Substation and proposed Cal City-Edwards Holgate 115 kV Subtransmission Line alignment extend into EAFB, where there is the possibility of people encountering UXO on or near the base. In addition, one UXO site is located on the parcel adjacent to the eastern border of proposed Staging Area 1-2, at the intersection of Lorraine Avenue and 160th Street in North Edwards (EDR 2021). Further, EAFB has a long history of use as a military installation and UXO items are occasionally found throughout the base. Therefore, there is the potential to encounter UXO during Project activities in these areas.

The Project would implement APM HAZ-4 in order to reduce this risk. Workers would be required to attend a training to inform all construction personnel of the UXO avoidance measures, including general precautions as well as specific procedures to be followed upon the discovery of UXO. The training would help workers to identify and avoid UXOs as well as understanding the importance of stopping work to evacuate if a UXO has been identified. With implementation of APM HAZ-4, the impact would be less than significant.

Operation and Maintenance

Once constructed, the subtransmission lines and substations/switchyard would require routine maintenance, inspection, and vegetation management activities conducted by SCE, but would not require additional personnel above existing staffing levels given that most operation would be conducted remotely. Operation and Maintenance would occasionally require the replacement of poles and other structures that would require earthwork in previously disturbed areas. Workers

that would perform these maintenance tasks would be at minimal risk of potentially coming into contact with UXOs. The impact would be **less than significant**.

Mitigation: None required.

Criterion k) Expose workers or the public to excessive shock hazards

Impact 3.9-9: The Project would not expose workers or the public to excessive shock hazards. (*Less than Significant*)

Electrical fields caused by electrical transmission equipment can induce voltages and currents on conductive objects, such as metal roofs or buildings, fences, construction equipment, and vehicles. Overhead subtransmission lines are designed to limit the short circuit current, from conductive items beneath the line, to a safe level (less than 5 milliampere). When a person or animal comes in contact with a conductive object a perceptible current or small electric shock may occur. These small electric shocks cause no physiological harm; however, they may present a nuisance.

The design of the Project would follow the applicable federal and state regulations and standards central to reducing shock hazards. The design would be compliant with Cal/OSHA regulations on electrical safety. These regulations are contained in Title 8 of the California Code of Regulations. Most of the electrical health and safety regulations can be found in the electrical health and safety regulations found in Chapter 4, Subchapter 5, in the Electrical Safety Orders, Sections 2700–2989, which are relevant to high voltage work. Following these safety regulations and other applicable federal and state regulations would ensure a **less-than-significant** impact for exposing workers or the public to excessive shock hazards due to the construction, operation, or maintenance of the Project.

Mitigation: None required.

3.9.5.3 Cumulative Effects Analysis

This section presents an analysis of the cumulative effects of the Project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. Significant cumulative impacts related to hazards and hazardous materials could occur if the incremental impacts of the Project combine with the incremental impacts of one or more cumulative projects.

The geographic area affected by the Project and its potential to contribute to cumulative impacts varies based on the environmental resource under consideration. The geographic scope of analysis for cumulative hazardous materials, unexploded ordnance hazard, and shock hazard impacts encompasses and is limited to, the Project site and its immediately adjacent area. This is because impacts relative to hazards and hazardous materials are generally site-specific and depend on the nature and extent of the hazardous materials release, and existing and future soil and groundwater conditions. For example, hazardous materials incidents tend to be limited to a smaller and more localized area surrounding the immediate spill location and extent of the release

and could only be cumulative if two or more hazardous materials releases spatially overlapped. The geographic scope of analysis for cumulative hazards impacts, such as interference with emergency access, wildfire, air traffic hazards, and transport of heavy materials using helicopters encompasses and is limited to other cumulative projects within 2 miles of the Project site or within EAFB restricted airspace because these types of impacts tend to affect a broader geographic area.

The timeframe during which the Project could contribute to cumulative hazards and hazardous materials effects includes the construction and operations phases. For the Project, the operations phase is permanent. However, similar to the geographic limitations discussed above, it should be noted that impacts relative to hazards and hazardous materials are generally time-specific. Hazardous materials events could only be cumulative if two or more hazardous materials releases occurred at the same time, as well as overlapping at the same location.

Section 3.0.3, *Approach to Cumulative Impacts Analysis*, includes Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, which lists past, present, and reasonably foreseeable future projects in the vicinity of the Project site. The locations of the cumulative projects are illustrated in Figure 3.0-1, *Cumulative Projects within 5 Miles of the Project*. There are several cumulative projects that would be immediately adjacent to the Project, including the Battery Energy Storage System adjacent to Cal City Substation, the Distribution Pappas 33 kV Line and the Ivanpah–Control projects that would be in the same alignment as the proposed Kramer–Cal City 115 kV Subtransmission Line, the Aratina Solar Center adjacent to the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment, and the Transmission Line Easement Edwards Air Force Base adjacent to Kramer Substation.

The Battery Energy Storage System and the Distribution Pappas 33 kV Line projects would already be operational and/or constructed in the vicinity of the Project by the time Project construction would begin, but the other projects listed above are either in the planning phase or have begun construction. Therefore, those cumulative projects could be constructed in a time frame similar to the Project, and the effects of those projects could occur in the same vicinity and at the same time as the effects of the Project.

There are several additional cumulative projects (e.g., several commercial cannabis facilities near Cal City Substation; Beyond Food Mart, the Kramer solar projects, and Core Civic California City Immigration Processing Center are near the Kramer–Cal City 115 kV Subtransmission Line alignment; and the San Bernardino CSG 3 LLC solar project is near Kramer Substation) within 2 miles of the Project site.

Criteria a) and b)

Impact C.3.9-1: The Project impact of routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment would not be cumulatively considerable. (*Less than Significant*)

While there are several cumulative project sites near the Project, they are not close enough to be able to cause a cumulative impact associated with the use or disposal of hazardous materials at the Project sites. Project impacts would not combine with other cumulative projects impacts to

cause or contribute to any on-site cumulative effect at the Project sites. However, some of the potential cumulative projects would likely use the same roadways that would be used by the Project for the routine transport of hazardous materials, including State Route 58, Twenty Mule Team Parkway, and U.S. Highway 395.

Similar to the Project, these cumulative projects would likely result in relatively low levels of the transportation of hazardous materials during construction, operation, and maintenance. All of these projects would be subject to the same regulatory requirements that govern routine transport of hazardous materials, including placarding, load weight limits, and spill prevention and response requirements. In this context, the Project's incremental impact would not combine with the incremental impacts of other projects to be cumulatively considerable. The cumulative impact would be less than significant.

Mitigation: None required.

Criterion c)

Impact C.3.9-2: The Project impact of hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing school would not be cumulatively considerable. (*Less than Significant*)

As discussed in Impact 3.9-2, proposed Staging Area 1-17 is located approximately 0.25 mile from Cal City Substation and 0.1 mile from proposed Staging Area 1-17. In addition, the BESS cumulative project site is also within 0.25 miles of this school. The use, transportation, or accidental spill of hazardous materials by the Project and BESS could result in cumulative exposures or inadvertent releases, which could adversely affect this school. However, with implementation of spill prevention and containment measures BMP WM-4, BMP WM-6, and BMP WM-7, such Project spills would be limited in volume and would not migrate off-site. In this context, the Project's incremental, less-than-significant impact would not combine with the incremental impacts of the BESS to be cumulatively considerable. The cumulative impact would be less than significant.

As described in air quality Impact C.3.3-3, the Project's construction emissions would not combine with the emissions of the BESS to result in a significant cumulative health risk impact. Therefore, the Project impact involving emitting hazardous emissions within 0.25 miles of an existing school would not be cumulatively considerable, and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion d)

Impact C.3.9-3: The Project impact of creating a hazard to the public or the environment by being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 would not be cumulatively considerable. (*Less than Significant*)

As discussed in Section 3.9.1, *Environmental Setting*, the Project would be adjacent to or located in a hazardous materials site compiled pursuant to Government Code Section 65962.5, referred to

as the Cortese List. Specifically, there are eight hazardous materials release sites cases within 0.25 miles of Project site components, and one of the hazardous materials release sites (U.S. Borax Boron Mine) is also the site of a cumulative project (U.S. Borax, Inc. Life of Mine Project Modifications to Use Permit) and there are several hazardous materials release site near cumulative projects located in the vicinity of Kramer Substation and the Kramer–Cal City 115 kV Subtransmission Line alignment. There could be existing previously unidentified hazardous materials in the vicinity of Project and cumulative project sites.

In the case of the Project, implementation of applicable APMs and BMPs would ensure that potential exposure of people and the environment to existing contaminated soils would be reduced. In the case of the cumulative projects, adherence to existing regulatory requirements would ensure that potential exposure of people and the environment to existing contaminated soils during construction and operation and maintenance activities would be reduced. The Project's less-than-significant impact would not combine with the incremental impacts of other projects to be cumulatively considerable. The cumulative impact would be less than significant.

Mitigation: None required.

Criterion e)

Given that no portion of the Project would be located within the planning boundary of the California City Municipal Airport or within the California City Municipal Airport Compatibility Zones as noted in the Kern County ALUCP, there would be no Project impact that could combine with the incremental impacts of other projects to cause or contribute to a cumulative effect. There would be no cumulative impact.

Cumulative hazards relative to the EAFB are analyzed further below in Impact C.3.9-6.

Criterion f)

Project operations would not interfere with an adopted emergency response plan; therefore, the Project would not contribute to a cumulative impact. *(No Impact)*

Impact C.3.9-4: The Project construction impact of impairing implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan would be cumulatively considerable. (*Less than Significant with Mitigation*)

There are no established evacuation routes in the Project area. However, road closures and helicopters ferrying construction equipment across major roads or crossings could have a potential negative impact on traffic. The Project would be required to obtain encroachment permits from the local jurisdictions and Caltrans, as appropriate, for lane or roadway closures. Closures of private driveways would be coordinated with the individual landowners. Furthermore, the Project would integrate APM HAZ-3, which would require further communication with the FAA or EAFB regarding construction helicopter flight plans and locations of traffic control where external load operations would cross public roadways.

However, in the event that construction of the cumulative projects, such as Transmission Line Easement EAFB project or the SCE Ivanpah–Control Project, would require road restrictions or

closures for delivery of oversized loads in the vicinity of Project, the Project impact could be cumulatively considerable. As discussed in Section 3.17, *Transportation*, SCE would be required to implement Mitigation Measure 3.17-2a, *Traffic Management Plan*, to develop a traffic control plan. With the implementation of Mitigation Measure 3.17-2a, the Project impact in combination with cumulative projects would not be cumulatively considerable with respect to emergency access. The cumulative effect would be mitigated to a less-than-significant level.

Mitigation: Mitigation Measure 3.17-2a, *Traffic Management Plan*.

Significance after Mitigation: Less than Significant.

Criterion g)

Impact C.3.9-5a: The Project construction impact relative to contributing to the exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires would be cumulatively considerable. (*Less than Significant with Mitigation*)

As discussed in Section 3.20, *Wildfire*, the Project site is located mostly in a Local Responsibility Area with moderate fire hazard severity; portions are designated as other moderate, other unzoned, or in a Federal Responsibility Area. Wildland fires could occur in the area if fuels are not properly managed on-site. SCE would implement standard fire prevention protocols during construction activities as required by the California Public Resources Code and CAL FIRE. SCE participates with CAL FIRE, the Cal OES, and various city and county fire agencies in the Red Flag Fire Prevention Program and complies with Public Resources Code Sections 4292 and 4293 related to vegetation management in transmission line corridors. Fire hazards would therefore be reduced on-site. As discussed in Impact C.3.9-4 and Impact 3.9-4, risk to personnel would most likely come from the inability to avoid or escape a wildland fire.

Any road closure associated with a cumulative project, such as the Transmission Line Easement EAFB project or the SCE Ivanpah–Control Project, could result in incremental impacts similar to the Project that would cause the Project impact to be cumulatively considerable. Accordingly, as discussed in Section 3.17, Transportation, the Project would implement Mitigation Measure 3.17-2a, Traffic Management Plan, in accordance with required encroachment permits, which would address this potential scenario. Implementation of Mitigation Measure 2.17-2a would reduce the cumulative impact to a less-than-significant level.

Mitigation: Mitigation Measure 3.17-2a, *Traffic Management Plan*.

Significance after Mitigation: Less than Significant.

Impact C.3.9-5b: The Project operation and maintenance impact of exposing people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires would not be cumulatively considerable. (*Less than Significant*)

Operation of approximately 70 miles of new subtransmission lines and expansion of the Cal City substation may pose a fire hazard if a conducting object comes near a line or when a live-phase conductor falls to the ground. Other projects in the area, including the Transmission Line

Easement EAFB project and the SCE Ivanpah–Control Project could pose a fire hazard if a conducting object comes near a line or when a live-phase conductor falls on the ground. Similar to the Project, these cumulative projects would be required to follow similar vegetation and tree clearing requirements as CPUC G.O. 95 and PRC 4293, which stipulate that vegetation management activities of electrical transmission lines are the expressed responsibility of the person that owns, control, operates or maintains the line. These regulations require SCE and other lead agencies to maintain a vegetation distance of 10 feet between transmission lines and vegetation. The Project's incremental, less-than-significant impact would not combine with the incremental impacts of other projects to cumulatively considerable. The cumulative effect would be less than significant.

Mitigation: None required.

Criterion h)

Impact C.3.9-6: The Project significant hazard to air traffic from the installation of new power lines and structures impact would be cumulatively considerable. (*Less than Significant with Mitigation*)

The Project would require the installation of new subtransmission lines and structures and may require the use of helicopters that could have the potential to create a significant hazard to EAFB air traffic. The height of the proposed new power lines or structures in a restricted air space may also interfere with or create a significant hazard to EAFB air traffic. Similar projects in the area, such as the Transmission Line Easement EAFB project and the SCE Ivanpah–Control Project could introduce similar hazards, creating a cumulative impact and causing the Project's impact to be cumulatively considerable. Implementation of Mitigation Measure 3.9-6a and Mitigation Measure 3.9-6b would ensure that Project impacts would be reduced to less than cumulatively considerable. The residual cumulative impact would be less than significant.

Mitigation: Mitigation Measure 3.9-6a, *EAFB Communication Plan*, and Mitigation Measure 3.6-6b, *EAFB Obstruction Evaluation*.

Significance after Mitigation: Less than Significant.

Criterion i)

Impact C3.9-7: The Project impact creating or contributing to a significant hazard to the public or environment through the transport of heavy materials using helicopters would be cumulatively considerable. (*Less than Significant with Mitigation*)

Light- and medium- duty helicopters would be used to support construction activities for the Project. Heavy duty helicopters would not be used during construction; however, heavy materials may be transported using helicopters during construction, which could potentially create a significant hazard to the public or environment. Flight paths would be determined immediately before construction by the helicopter contractor. Flight paths would be filed with the appropriate authorities, including the FAA or EAFB as needed.

Cumulative projects that include transmission lines in the area, such as the Transmission Line Easement EAFB project and the SCE Ivanpah–Control Project may also require transport of heavy materials using helicopters and could introduce similar hazards, creating a cumulative impact and causing the Project's impact to be cumulatively considerable. Implementation of Mitigation Measure 3.9-6a, which would require coordination with EAFB regarding construction helicopter flight plans, would ensure that Project impacts would be reduced to less than cumulatively considerable. The residual cumulative impact would be less than significant.

Mitigation: Mitigation Measure 3.9-6a, *EAFB Communication Plan*.

Significance after Mitigation: Less than Significant.

Criterion j)

There would be no cumulative impact associated with the exposure of people to a significant risk of injury or death involving unexploded ordnances. *(No Impact)*

There are no cumulative projects identified within EAFB that are in the immediate vicinity of the Project sites. Other projects, such as the Transmission Line Easement Edwards Air Force Base and and the Aratina Solar Center that are in or in the the vicinity of EAFB could be subject to similar hazards as the Project, but given their distances from the closest Project component, those projects would not introduce a cumulative impact that that would cause the Project to be cumulatively considerable. Therefore, there would be no cumulative impact. *(No Impact)*

Criterion k)

Impact C.3.9-9: The Project impact of exposing workers or the public to excessive shock hazards would not be cumulatively considerable. (*Less than Significant*)

Power line and electrical equipment fields can induce voltages and currents on conductive objects, such as metal roofs or buildings, fences, construction equipment, and vehicles. Transmission lines are designed to limit the short circuit current, from conductive items beneath the line, to a safe level (less than 5 milliampere). The cumulative projects that involve electrical infrastructure in the immediate vicinity of the Project are the BESS, the Distribution Pappas 33 kV Line Project, the Transmission Line Easement EAFB project, and the SCE Ivanpah–Control Project. The Project and those electrical infrastructure cumulative projects would be required to comply with Cal/OSHA or similar regulations on electrical safety. These regulations are contained in Title 8 of the California Code of Regulations. Most of the electrical health and safety regulations can be found in the electrical health and safety regulations found in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2700-2989, which are relevant to high voltage work.

Following these safety regulations and other applicable federal and state regulations would ensure a less-than-significant impact associated with exposing working or the public to excessive shock hazards due to the construction, operation, or maintenance of projects in the Project area. Given that all projects would be subject to similar standards for electrical safety, the Project's incremental, less-than-significant impact would not be cumulatively considerable. The cumulative effect would be less than significant.

Mitigation: None required.

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3.10 Hydrology and Water Quality

This section evaluates the impacts of the Project on hydrology and water quality. It presents information about the environmental and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to hydrology and water quality.

3.10.1 Environmental Setting

3.10.1.1 Regional Setting

Topography

The Project study area is in the Mojave Desert, a high desert region bounded by the Sierra Nevada and the Transverse Ranges. The area is bordered by the Rand Mountains and the Red Mountains to the north and the Gravel Hills to the east. Most of the study area is relatively flat, ranging between 2,250 and 2,600 feet above mean sea level (amsl). California City, at an average elevation of 2,400 feet amsl, is located on the northern portion of the Antelope Valley, a triangular shaped plain of roughly 2,400 square miles, within the Mojave Desert, bounded by the San Gabriel Mountains to the south, the Tehachapi Mountains on the west, and the Rand Mountains on the north. The topography consists of gently sloping alluvial plains with a series of steep rock buttes, and several arroyos. The Cal City Substation and other Project sites and alignments would be located on a desert plain underlain by a thick sequence of alluvial soils (Geotechnical Solutions Inc. 2022).

Climate

The desert climate is characterized by hot, dry summers and mild, dry winters, with an annual average of approximately 6 inches of precipitation falling mostly as rain in the winter months of January and February. Temperatures in California City average 45 degrees Fahrenheit (°F) in the winter months with an occasional freeze. The average summer temperature is approximately 84°F, but can reach over 110°F, based on data from the nearest weather station at the Mojave California Station (Station ID 045756) (WRCC 2024).

Hydrology

The Project site is in the Antelope-Fremont Valleys Watershed, composed of the Antelope Valley and Fremont Valley sub-watersheds, encompassing 2,158,828 acres. There are no perennial surface waters in the study area. As is typical in the Mojave Desert, there are a series of washes and playas that seasonally convey water from high to low elevations across the landscape during rain events that occur in the winter months. The Fremont Valley Watershed receives surface

water runoff from Lone Tree Canyon, Cache Creek, and other ridges in the region. Most of the surface water in this watershed drains toward Koehn Dry Lake, approximately 20 miles northeast of Mojave. The Antelope Valley watershed receives surface water runoff from the San Gabriel and Tehachapi Mountains, including Big Rock Creek, Littlerock Creek, Oak Creek, and Cottonwood Creek. Most of the surface water drains to Rosamond Lake, located on Edwards Air Force Base (EAFB). The watershed is considered a closed basin, meaning that all waters that enter the watershed either flow toward playa lakes or infiltrate into the groundwater table (Rincon 2023).

California City is bisected by seasonal drainages, the largest of which is Cache Creek, as depicted on **Figure 3.10-1**, *Surface Hydrology and Flood Zones*. Cache Creek is an ephemeral wash/arroyo (dry most of the year) that flows seasonally through the city. Jurisdictional non-wetland features mapped in the study area include vegetated and non-vegetated channels and culverts (see Section 3.4, *Biological Resources*, for discussion of jurisdictional and non-jurisdictional waters). These features, including Cache Creek, are non-tributary features considered intrastate isolated waters of the state, as they do not possess a hydrologic connector or nexus to a traditionally navigable waterway. Playas with undetermined jurisdiction are also present in the vicinity of the Project. Playas were characterized during the reconnaissance level delineation by their lack of vegetation and surface cracking (Rincon 2023).

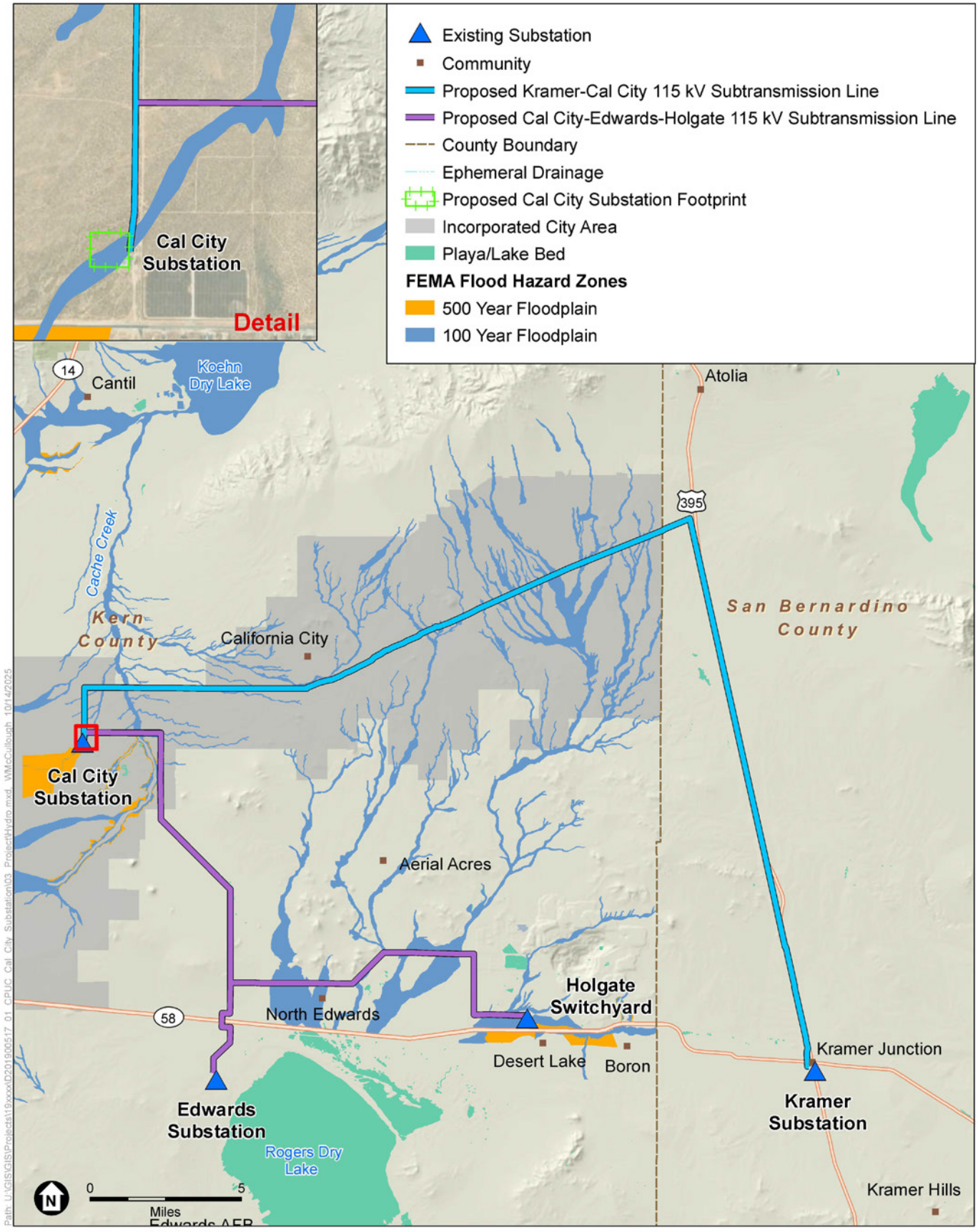
Rogers Dry Lake wetland is located on EAFB south of State Route 58 and the proposed Cal City-Edwards-Holgate 115-Kilovolt (kV) Subtransmission Line alignment. The U.S. Army Corps of Engineers (USACE) determined that Rogers Dry Lake and Harper Dry Lake are isolated with no connection to downstream waterways (USACE 2014).

Groundwater

The Project would cross through the following three groundwater basins: the Fremont Valley, Harper Valley, and Antelope Valley groundwater basins. Most Project components (including Cal City Substation and the north segment of the Kramer-Cal City 115 kV Subtransmission Line alignment in Kern County) are located in the Fremont Valley Groundwater Basin. Depth to groundwater near the Cal City Substation is approximately 250 feet below the ground surface (Geotechnical Solutions Inc. 2022). Below are summaries of the three groundwater basins. Additional detail about water supply and regional groundwater availability is provided in Section 3.19, *Utilities and Service Systems*.

Fremont Valley Groundwater Basin

California City lies within the Fremont Valley Groundwater Basin of the South Lahontan Hydrologic Study Area. The basin is 523 square miles (334,720 acres) of which 203 square miles (129,920 acres) is located under California City. The Fremont Valley Groundwater Basin underlies Fremont Valley in eastern Kern County and northwestern San Bernardino County. The basin is bounded on the northwest by the Garlock fault zone against impermeable crystalline rocks of the El Paso Mountains and the Sierra Nevada. This basin is bounded on the east by crystalline rocks of the Summit Range, Red Mountain, Lava Mountains, Rand Mountains, Castle Butte, Bissel Hills, and Rosamond Hills. The basin is bounded on the southwest by the Antelope Valley Groundwater Basin along a groundwater divide approximated by a line connecting the mouth of Oak Creek through Middle Butte to exposed basement rock near Gem Hill (DWR 2021a).



SOURCES: ESA, 2023; SCE, 2023; USGS, 2023; FEMA, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.10-1
Surface Hydrology and Flood Zones

Antelope Valley Groundwater Basin

The Antelope Valley Groundwater Basin underlies an extensive alluvial valley in the western Mojave Desert. The elevation of the valley floor ranges from 2,300 to 3,500 feet amsl. The basin is bounded on the northwest by the Garlock fault zone at the base of the Tehachapi Mountains and on the southwest by the San Andreas fault zone at the base of the San Gabriel Mountains. The basin is bounded on the east by ridges, buttes, and low hills that form a surface and groundwater drainage divide and on the north by Fremont Valley Groundwater Basin at a groundwater divide approximated by a southeastward-trending line from the mouth of Oak Creek through Middle Butte to exposed bedrock near Gem Hill, and by the Rand Mountains farther east (DWR 2021b).

The California City subbasin is hydrologically connected to the Antelope Valley Groundwater Basin by alluvial filled narrows between the Castle Butte and the Twin Buttes. There is an area of depression named the Dry Koehn Lake. Groundwater in the subbasin flows from the alluvial fans along the mountains towards this depression. This flow stems in part from the Antelope Valley Groundwater Basin, which contributes up to 2,570 acre-feet per year. California City, on average, pumps 3,300 acre-feet (1,075 million gallons) per year from the subbasin providing customers with approximately 75 percent of their potable water supply. As reported in the City of California City 2020 Urban Water Management Plan, the sustainable yield for groundwater extraction is approximately 6,900 acre-feet per year (afy) (City of California City 2023).

Harper Valley Groundwater Basin

The Harper Valley Groundwater Basin underlies Harper Valley in western San Bernardino and eastern Kern counties of the central Mojave Desert. This basin encompasses 640 square miles and is bounded on the east by non-water-bearing rocks of Fremont Peak, Black Mountain, the Gravel Hills, and the Mud Hills. The basin is bounded on the west by a combination of surface drainage divides; portions of the Harper, Kramer Hills, and Lockhart faults; and non-water-bearing rocks of the Kramer Hills and other low-lying basement hills. The basin is bounded on the south by non-water-bearing rocks of Mount General, Iron Mountain, and the Waterman Hills, and by subsurface drainage patterns. The basin is bounded on the north by non-water-bearing rocks of the Rand Mountains (DWR 2021c).

Water Quality

Groundwater quality in the South Lahontan region is variable but is typically characterized as a calcium or sodium bicarbonate type water. In basins with closed drainages (such as those in the Project area), water characteristics can change from calcium-sodium bicarbonate near the margins of the basin to sodium chloride or chloride sulfate beneath a dry lake. The total dissolved solids (TDS) content of groundwater is high in many basins in the region. As reported in the California City Urban Water Management Plan 2020, some of the contaminants affecting groundwater in and near California City include arsenic, gross alpha particle activity, uranium, fluoride, TDS, and boron (City of California City 2023).

Flooding

Seasonal localized flooding occurs in the western portion of California City during winter and spring (City of California City 2009). Cal City Substation is partially located in Zone A, which is a special flood hazard area without an identified base flood elevation level (FEMA 2008). The

Cal City Substation improvement site is partially within the one percent annual chance (100-year) and close to the 0.2 percent annual chance (500-year) floodplains, as depicted on Figure 3.10-1.

Tsunami and Seiche

Tsunamis are ocean waves generated by vertical movement of the sea floor, normally associated with earthquakes or volcanic eruptions. *Seiches* are oscillations of enclosed or semi-enclosed bodies of water that result from seismic events, wind stress, volcanic eruptions, underwater landslides, and local basin reflections of tsunamis. The Project site is not near the ocean or any large water bodies.

3.10.2 Regulatory Setting

3.10.2.1 Federal

Clean Water Act

The federal Clean Water Act (CWA) (U.S. Code Title 33, Section 1251), enacted by Congress in 1972 and amended several times since its inception, is the primary federal law regulating water quality in the United States and forms the basis for several state and local laws throughout the country. Its objective is to reduce or eliminate water pollution in the nation's rivers, streams, lakes, and coastal waters. The CWA authorizes the U.S. Environmental Protection Agency (USEPA) to implement federal water pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the CWA is administered by the USEPA and U.S. Army Corps of Engineers (USACE). At the state and regional levels, the act is administered and enforced by the State Water Resources Control Board (State Water Board) and the nine regional water quality control boards (RWQCBs). Section 402 of the CWA is relevant to the Project and is summarized below.

CWA Section 402: National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402 of the CWA is one of the primary mechanisms for controlling water pollution through the regulation of sources that discharge sediment and other pollutants into waters of the U.S. USEPA has delegated authority of issuing NPDES permits in California to the State Water Board and its RWQCBs. The NPDES permit program is discussed in detail below in Section 3.10.2.2, *State*.

Federal Emergency Management Agency

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) is a federal agency whose overall mission is to support citizens and first responders to ensure that the U.S. builds, sustains, and improves capabilities to prepare for, protect against, respond to, recover from, and mitigate all hazards. FEMA provides information, guidance, and regulation associated with flood prevention, mitigation, and response. Pursuant to Executive Order 11988, FEMA is responsible for management of floodplain areas, defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a one percent or greater chance of flooding in any given year (the 100-year floodplain). Under Executive Order 11988, FEMA requires that local governments covered by the federal

flood insurance program pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain. Through its Flood Insurance and Mitigation Administration, FEMA manages the National Flood Insurance Program, which includes flood insurance, floodplain management, and flood hazard mapping functions. FEMA determines flood elevations and floodplain boundaries and distributes the flood insurance rate maps used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including 100-year floodplains. Figure 3.10-1 shows the flood hazard areas in the vicinity of the Project and alternatives.

U.S. Department of Defense

Air Force Manual 32-7003

With respect to hydrology and water quality, Air Force Manual 32-7003 requires an evaluation of compliance with the federal Clean Water Act and the Rivers and Harbors Act of 1899, as well as protection of floodplains and flood plain boundary determinations per FEMA maps (USAF 2020). The manual establishes requirements for the management of natural resources on air force installations (including EAFB) in accordance with applicable federal, state, and local laws and regulations.

3.10.2.2 State

Porter-Cologne Water Quality Control Act

The California Legislature has assigned the primary responsibility to administer and enforce statutes for the protection and enhancement of water quality to the State Water Board and its nine RWQCBs. The State Water Board provides state-level coordination of the water quality control program by establishing statewide policies and plans for the implementation of state and federal regulations. The nine RWQCBs throughout California adopt and implement water quality control plans that recognize the unique characteristics of each region regarding natural water quality, actual and potential beneficial uses, and water quality problems. The study area is in the South Lahontan Region.

The Porter-Cologne Act (Division 7 of the California Water Code Section 13000 et seq.) provides a framework for protection of California's water quality for use and enjoyment by the people of the state. The act establishes provisions for a statewide program for the control of water quality, recognizing that waters of the state are increasingly influenced by inter-basin water development projects and other statewide considerations, and that factors such as precipitation, topography, population, recreation, agriculture, industry, and economic development vary regionally within the state. The statewide program for water quality control is therefore administered most effectively on a local level with statewide oversight. Within this framework, the act establishes the authority of the State Water Board and the nine RWQCBs. The State Water Board administers water rights, sets state policy for water pollution control, and implements various water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and most enforcement activities.

The Project is proposed in a location under the jurisdiction of the Lahontan RWQCB (Region 6), which covers terrain east of the Sierra Nevada extending from the Oregon border south to the northern Mojave Desert (where the Project is proposed).

Water Quality Control Plan for the Lahontan Basin

The State Water Board sets statewide policy, and the regional boards adopt and implement water quality control plans, which recognize differences in natural water quality, actual and potential beneficial uses, and water quality issues associated with human activities. Region 6 is tasked with implementing the adopted water quality control plan (Basin Plan) for the Lahontan Basin through planning, permitting, and enforcement of established water quality objectives. In accordance with the state Implementation Policy for Water Quality Control, Region 6, the Basin Plan for the Lahontan Basin has identified existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdictional planning area. The existing beneficial uses designated in the Basin Plan for surface and groundwater in the study area are listed in **Table 3.10-1** (Lahontan RWQCB 2023).

TABLE 3.10-1
DESIGNATED BENEFICIAL USES OF WATER BODIES IN THE STUDY AREA

Water Body	Hydrologic Unit (HU)/subunit	Designated Beneficial Uses
Cache Creek	Fremont HU	MUN, AGR, GWR, REC-1, REC-2, WARM, WILD
Cache Creek 2	Fremont HU	MUN, GWR, REC-1, REC-2, WARM, WILD
Minor Surface Waters	Fremont HU	MUN, AGR, REC-1, REC-2, COMM, WARM, WILD
Minor Wetlands	Fremont HU	MUN, AGR, REC-1, REC-2, WARM, WILD
Rogers Lake Wetlands	Antelope HU	MUN, AGR, REC-1, REC-2, WARM, SAL, WILD, WQE, FLD
Minor Surface Waters	Antelope HU	MUN, AGR, GWR, REC-1, REC-2, COMM, WARM, COLD, WILD
Minor Wetlands	Antelope HU	MUN, AGR, GWR, FRSH, REC-1, REC-2, WARM, WILD
Minor Surface Waters	Harper Valley subarea	MUN, AGR, GWR, REC-1, REC-2, WARM, WILD
Minor Wetlands	Harper Valley subarea	MUN, AGR, GWR, FRSH, REC-1, REC-2, WARM, WILD, RARE, WQE, FLD

NOTES: Existing and Potential Beneficial Uses Key: MUN (Municipal and Domestic Supply); AGR (Agricultural Supply); REC-1 (Body Contact Recreation); REC-2 (Non-contact Recreation); WARM (Warm Freshwater Habitat); RARE (Rare Threatened and Endangered Species); COLD (Cold Freshwater Habitat), WILD (Wildlife Habitat); GWR (Groundwater Recharge); FLD (Flood Peak Attenuation/Flood Water Storage); WQE (Water Quality Enhancement).

SOURCE: Lahontan RWQCB 2023

There are no impaired waterways that cross the Project sites or alignments and downstream waters to the Project sites and alignments are not on the state CWA Section 303(d) list.

NPDES General Permit for Discharges of Stormwater Associated with Construction Activities (Order 2022-0057-DWQ)

The *National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2022-0057-DWQ; NPDES Permit CAS000002), commonly referred to as the Construction General Permit, is required for projects that would disturb 1 or more acres of soil during construction. The Construction General Permit requires dischargers to design, install, and maintain effective erosion and sediment controls to minimize the discharge of pollutants through the development and implementation of a site-specific stormwater pollution prevention plan (SWPPP) that includes

specific best management practices (BMPs). The SWPPP is required to include site-specific measures designed and implemented to control all construction activity-related pollutants through temporary and permanent erosion and sediment control BMPs (SWRCB 2023). The SWPPP is intended to prevent sediment and other pollutants from mixing into stormwater and from mobilizing off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP is required to contain a visual monitoring program and a chemical monitoring program for non-visible pollutants. Additional details regarding the Construction General Permit program are provided in Section 3.7, *Geology, Soils, and Paleontology*.

California Water Code Section 13260, Report of Waste Discharge

California Water Code Section 13260 states that persons discharging or proposing to discharge waste that could affect the quality of the waters of the state other than a community sewer system shall file a report of waste discharge (ROWD) containing information that may be required by the RWQCB to begin the application process for waste discharge requirements (WDR) and NPDES permits, with exceptions for solid waste facilities and certain general permits (such as the Construction General Permit, described above). Because the Project proposes dredge and fill activities in non-federal jurisdictional wetlands and waterways, SCE (as Project proponent) intends to file a ROWD to initiate the WDR application process for the Project.

Sustainable Groundwater Management Act and Adjudicated Basins

The Sustainable Groundwater Management Act (SGMA) of 2014 (Water Code Section 10723) provides a framework for sustainable management of groundwater resources. In groundwater basins designated by the California Department of Water Resources as medium and high priority, local public agencies and locally controlled groundwater sustainability agencies are required to develop and implement groundwater sustainability plans (GSPs) or alternatives to GSPs. Each GSP or alternative must include measurable objectives and interim milestones for achieving sustainability goals for the given groundwater basin. GSPs must also include a physical description of the basin, including information on groundwater levels, groundwater quality, subsidence and groundwater/surface water interaction, historical and projected water demand and supply data, monitoring and management provisions, and a description of how the plan will affect other plans.

The Project sites and alignments are in the Fremont Valley, Antelope Valley, and Harper Valley groundwater basins. The portion of the Project (Kramer Substation and new Kramer–Cal City 115 kV line) sites and alignment in San Bernardino County would be in the Harper Valley Groundwater Basin. The basin is part of the larger Mojave Basin, which is an adjudicated basin not subject to a GSP (see below for information about adjudicated basins). The portions of the Project (Kramer-Cal City 115 kV subtransmission line, Cal City Substation) proposed in Kern County would overlie the Fremont Groundwater Basin.

Basins managed under a court ruling that stipulates groundwater rights of those overlying the basin and the appropriators of a basin are known as adjudicated basins. Basins with adjudications

underway at the time SGMA was enacted are not required to form groundwater sustainability agencies or develop GSPs; however, SGMA requires adjudicated basins to file annual reports with the California Department of Water Resources (DWR 2024). The Antelope Valley Groundwater Basin is an adjudicated basin managed by the Western San Bernardino Watermaster.

3.10.2.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Project components; therefore, the Project is not subject to local discretionary regulations. Pursuant to CPUC General Order 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substation, or electric facilities constructed by the public utilities subject to CPUC's jurisdiction. However, in locating such projects the public utilities shall consult with local agencies regarding land use matters." Details below that relate to local regulations are provided only for informational purposes.

Kern County

Kern County General Plan

The following policies in the Land Use, Open Space, and Conservation Element and the Safety Element of the Kern County General Plan pertain to hydrology and water quality (Kern County 2009).

Physical and Environmental Constraints Policies

Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.

Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of [the] General Plan.

Policy 11: Protect and maintain watershed integrity within Kern County.

General Provisions: Surface and Groundwater Policies

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.

Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

Resource Policy

Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.

Kern County Grading Ordinance

The Kern County Grading Ordinance (County Municipal Code Chapter 17.48) requires that a permit for all grading must be obtained prior to the commencement of construction activities. The Kern County Grading Guidelines specify the actions necessary to comply with the Kern County Grading Code requirements. This includes preparation of grading plans that include details about on-site drainage paths, plans and devices installed to minimize runoff, erosion, and sedimentation.

San Bernardino County

San Bernardino County General Plan

The following water quality policies in the San Bernardino County General Plan pertain to hydrology and water quality (San Bernardino County 2020).

Policy NR-2.1: Coordination on water quality. We collaborate with the state, regional water quality control boards, watermasters, water purveyors, and government agencies at all levels to ensure a safe supply of drinking water and a healthy environment.

Policy NR-2.2: Water management plans. We support the development, update, and implementation of ground and surface water quality management plans emphasizing the protection of water quality from point and non-point source pollution.

Policy NR-2.3: Military coordination on water quality. We collaborate with the military to avoid or minimize impacts on military training and operations from groundwater contamination and inadequate groundwater supply.

Policy NR-2.4: Wastewater discharge. We apply federal and state water quality standards for wastewater discharge requirements in the review of development proposals that relate to type, location, and size of the proposed project in order to safeguard public health and shared water resources.

Policy NR-2.5: Stormwater discharge. We ensure compliance with the County's Municipal Stormwater NPDES (National Pollutant Discharge Elimination System) Permit by requiring new development and significant redevelopment to protect the quality of water and drainage systems through site design, source controls, stormwater treatment, runoff reduction measures, best management practices, low impact development strategies, and technological advances. For existing development, we monitor businesses and coordinate with municipalities.

City of California City

City of California City General Plan

The City of California City's General Plan contains the following policies pertaining to water resources.

- Establish a water conservation program encouraging and promoting xeriscaping and municipal recycled water usage.

- Encourage the Antelope Valley East Kern Valley Water Agency (AVEK) and the City Public Works Department to notify all new residential, commercial, and industrial development of water conservation and recycling measures implemented by the agencies which supply water to the area.
- Coordinate with AVEK and the City Public Works Department to implement the water master plan that addresses new infrastructure, as well as improvements and upgrades to the existing water systems in the General Plan Planning Area.

3.10.3 Applicant Proposed Measures and Best Management Practices

3.10.3.1 Applicant Proposed Measures

Southern California Edison (SCE) has identified the following Applicant proposed measures (APMs) to minimize impacts on hydrology and water quality from the Project. The impact analysis assumes the APMs would be implemented (i.e., part of the Project) to reduce impacts on hydrology and water quality as discussed below.

- **APM WET-1: Avoidance and/or Minimization of Impacts on Jurisdictional Waters, Wetlands, and Riparian Habitats.** The Project shall avoid and/or minimize impacts on all state jurisdictional waters, wetlands, and riparian habitat that occur within the Project area, where feasible. All grading, fill, staging of equipment, infrastructure construction or removal, and all other construction activities shall be designed, sited, and conducted outside of state and federally jurisdictional waters, wetlands, and riparian habitat.

  The implementation of appropriate BMPs (e.g., silt fencing, straw wattles, secondary containment, avoidance of fueling within 100 feet of jurisdictional waters) shall be implemented to ensure that indirect impacts on jurisdictional waters, wetlands, and riparian areas are avoided or minimized. BMPs are also necessary to reduce the risk of an unintended release of sediment or other material into jurisdictional waters. New and upgraded roadways shall use at-grade type stream crossings unless installation or repair of culverts is required. Stockpiled and bermed sediment will be redistributed or removed from the site to avoid altering flows. New poles shall be sited outside stream channels.

  If permanent impacts on waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated at a minimum of a 1:1 ratio, or at a ratio determined by the applicable resource agencies (i.e., U.S. Army Corps of Engineers, State Water Resources Control Board/Regional Water Quality Control Boards, and CDFW). Temporary impacts on jurisdictional waters shall be returned to preexisting contours upon completion of the work.

- **APM HAZ-2.** A Soil Management Plan will be developed and implemented for the Proposed Project. The Soil Management Plan will provide guidance for the proper handling, on-site management, and disposal of impacted soil that may be encountered during construction activities.

3.10.3.2 Best Management Practices

SCE has also proposed implementation of BMPs based on California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices* (SCE 2023). The BMPs are considered part of the Project for the purposes of this CEQA analysis (SCE 2024).

Dust

- **BMP WE-1, Wind Erosion Control.** The construction team will apply water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

Erosion

- **BMP EC-1, Scheduling.** The construction team shall reduce the discharge of pollutants to storm drain facilities caused by construction activities by scheduling activities in a manner that will limit exposure of disturbed soils to wind, rain, non-storm water run-off, and storm water run-on and run-off.

- **BMP EC-2, Preservation of Existing Vegetation.** The construction team will protect and preserve existing vegetation in work areas as long as practicable before disturbing them. The construction team shall also preserve and protect existing vegetation adjacent to work areas. This protection and preservation of such vegetation will serve to control erosion and filter out sediment.

- **BMP EC-3, Hydraulic Mulch.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.

- **BMP EC-4, Hydroseeding.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.

- **BMP EC-5, Soil Binders.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring short term temporary protection. Because soil binders can often be incorporated into the work, they are a good alternative to mulches in areas where grading activities will soon resume. Soil binders are also suitable for use on stockpiles. Non-toxic soil binders, equivalent or better in efficiencies than the California Air Resources Board (CARB)-approved soil binders, shall be applied per the manufacturer recommendations to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions. Soil binders will be non-toxic and MSDS will be present at site.

- **BMP EC-6, Straw Mulch.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Straw mulch will be certified weed free.

- **BMP EC-7, Geotextiles and Mats.** The construction team will implement one or more of these measures to stabilize disturbed soil areas (stockpiles, slopes, embankments, conveyances, etc.) and protect these soils from erosion by rain, wind or storm water run-on and run-off where applicable to reduce soil erosion from wind and rain. Plastic micro-filament matting will not be used, only natural fiber mats to prevent trapping of birds and reptiles.

- **BMP EC-8, Wood Mulch.** The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Wood mulch shall be untreated.

- **BMP EC-15, Soil Preparation and Roughening.** The construction team will implement this BMP to assess and prepare surface soils for other BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.

- **BMP EC-16, Non-Vegetative Stabilization.** The construction team will utilize non-vegetative stabilization methods for temporary or permanent stabilization of areas prone to erosion; this would be used only where vegetative options are not feasible.

Runoff Controls

- **BMP SE-4, Check Dam.** The construction team will implement this BMP to reduce scour and channel erosion by reducing flow velocity and increasing residence time within the channel, allowing sediment to settleSE-5, Fiber Rolls. The construction team will implement this BMP to eliminate the erosion of slopes. The rolls are widely used to prevent sediment from running off site.

- **BMP SE-6, Gravel Bag Berm.** The construction team will implement this BMP to eliminate erosion of slopes. This BMP is particularly useful with steep slopes and a high potential for runoff.

- **BMP SE-7, Street Sweeping and Vacuuming.** The construction team will implement this BMP when soils and miscellaneous debris are tracked from the construction site to areas outside the site. This measure prevents sediments from reaching the drop inlets and stormwater system and prevents unsafe driving conditions.

- **BMP SE-10, Storm Drain Inlet Protection.** The construction team will implement this BMP if any runoff from the construction site drains directly into a drop inlet. The protection will prevent debris and soils from clogging drop inlets and storm drain systems.

- **BMP TC-1, Stabilized Construction.** The construction team will implement this BMP to remove all construction site soil and miscellaneous debris prior to leaving the site. The BMP will depend on the soil, site, and type of surface outside the staging area.

- **BMP TC-2, Stabilized Construction Roadway.** A stabilized construction roadway is a temporary access road. It is designed for the control of dust and erosion created by vehicular tracking.

- **BMP WM-3, Stockpile Management.** The construction team will implement this BMP whenever there are stockpiles of asphalt, concrete, wood, or soil. This includes temporary stockpiles and stockpiles existing for periods longer than one working day.

Transporting, Storing, and Handling

- **BMP NS-9, Vehicle and Equipment Fueling.** The construction team will implement this BMP when fueling of equipment occurs on site. The equipment should be monitored before and after fueling. This will prevent any fuel from reaching the construction site soils and possible groundwater. Diapers, pans, or tarps will be used under fueling areas. Spill kits will be on-site at fueling locations. Fueling areas will be located at least 100 feet from drainages.

- **BMP WM-1, Material Delivery and Storage.** The construction team will implement this BMP to prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials on-site, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training applicable employees and subcontractors.

- **BMP WM-2, Material Use.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use on-site, and training applicable employees and subcontractors.

Incidental Leak or Spill

- **BMP WM-4, Spill Prevention and Control.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training applicable employees.

- **BMP WM-6, Hazardous Waste Management.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of applicable employees and subcontractors.

- **BMP WM-7, Contaminated Soil Management.** The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

3.10.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to hydrology and water quality if it would:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

   i) result in substantial erosion or siltation on- or off-site;

   ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

   iii) 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; or

   iv) impede or redirect flood flows;

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.10.5 Direct and Indirect Effects

3.10.5.1 Approach to the Analysis

This analysis considers the potential impacts on hydrology and water quality associated with construction, operation, and maintenance of the Project and alternatives. SCE has committed to implementing stormwater measures and BMPs as part of the Project to limit dust emissions, control erosion, and manage runoff and prevent sediment and other pollutants from entering stormwater. Measures are included (as described in Section 3.10.3) to ensure secondary containment of potentially hazardous materials and limitations on fueling equipment would occur within these substations. The analysis herein assumes that because more than 1 acre of land would be disturbed during construction, a site-specific SWPPP would be implemented as part of the Project acquiring coverage under the Construction General Permit. Additionally, it is anticipated that SCE would submit a ROWD and obtain a WDR permit from the state. The SWPPP and WDR include independently enforceable conditions intended to protect stormwater and non-jurisdictional wetlands and waters, respectively, from contaminated discharges. The analysis assumes that the Project would be compliant with all regulatory requirements and that the requirements would be enforced by the regulatory agencies with jurisdiction.

3.10.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.

The proposed modifications at Kramer and Edwards substations and Holgate Switchyard consist solely of minor modifications within existing facilities with minimal changes to site contours; thus, the activities associated with those Project components would have no impact related to hydrology and water quality and are not discussed in further detail in this EIR. *(No Impact)*

Impact 3.10-1a: Project construction could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. (*Less than Significant with Mitigation*)

As described in the environmental setting, under existing conditions, there are no impaired waterways and no effective TMDLs within the vicinity of the Project that could be compromised by Project activities. The Project is proposed within a closed basin, meaning that surface water drains to ephemeral features or typically dry lakes. Jurisdictional and non-jurisdictional wetland features are present under existing conditions along the proposed subtransmission line alignments and at the Cal City Substation expansion area.

Actions that involve or are expected to involve the discharge of waste (which includes excavated soil to be discharged to land) may be subject to a WDR permit under the Porter-Cologne Act and California Water Code Section 13260 (as described in Section 3.10.2, *Regulatory Setting*). The Project would result in construction that would have the potential to discharge waste that could affect the quality of waters of the state (described in further detail in Section 3.4, *Biological Resources*). SCE has confirmed that a report of waste discharge would be submitted to the State Water Board for discharges of waste to land associated with the Project. It is anticipated that a WDR would be in effect for the Project.

As the Project would include ground-disturbing activities to an area greater than 1 acre, SCE (as Project proponent) would be required to prepare and implement a SWPPP and WDR in accordance with the NPDES Construction General Permit and ROWD requirements, respectively. The SWPPP and WDR would apply to all aspects of the Project and would include BMPs to be implemented to prevent soil erosion and discharge of other construction related pollutants, that could otherwise contaminate nearby drainages such as Cache Creek and the various ephemeral washes (Figure 3.10-1) in the vicinity of the Project sites and alignments. The Project includes BMPs (as listed in Section 3.10.3.2) that would be implemented as necessary during construction. The proposed BMPs are intended to limit erosion, prevent runoff, provide procedures for safe transport, handling, and management of contaminants, provide procedures to be followed in the event of incidental leaks and spills, among other measures. Although SCE has committed to implementing the industry-standard BMPs from the 2019 California Stormwater BMP Manual, these measures are not specific regarding implementation, do not support the requirements of the current Construction General Permit, and their effectiveness depends on site-specific conditions. Therefore, it is not clear if they would be effective in protecting water quality and the potential impact associated with degradation of surface water, runoff, and contributions of pollution into stormwater would be significant.

To ensure that the Project drainage features would be maintained, perform as designed with respect to runoff, and do not result in sedimentation or otherwise substantially degrade surface water or groundwater, Mitigation Measure 3.10-1, which would require the preparation of a Project-specific Erosion Control Plan is recommended to augment BMPs proposed by SCE.

Mitigation Measure 3.10-1a: Erosion Control Plan.

SCE shall develop and submit to CPUC for review and approval a Project-specific Erosion Control Plan at least 60 days prior to the start of construction. The Erosion Control Plan may be part of the Storm Water Pollution Prevention Plan (SWPPP) and WDR permit and shall be kept on-site and be readily available upon request. The Erosion Control Plan shall be in effect for Project sites as determined by the SWPPP and WDR or permit conditions, as applicable, at the discretion of the Regional Water Quality Control Board.

Soil disturbance at structure sites and access roads shall be minimized and designed such that long-term soil erosion is prevented. The Erosion Control Plan shall include, but not be limited to, the following:

- Specific locations for all soil disturbing construction activities including but not limited to new and improved access roads, staging areas, work sites, etc.

- Specific locations of all watercourses, ephemeral and perennial drainages (as applicable) that would be directly affected by soil disturbing activities (such as water crossings, and public storm drains by rights-of-way and access roads).
- Identify specific BMPs to protect drainage structures such as public storm drains downstream of soil disturbing activities.
- Temporary and permanent design features to minimize erosion during construction and (if permanent) during operation of the Project.
- Specific location and type of BMPs proposed to be installed to prevent off-site sedimentation and to protect aquatic resources/drainages.
- Specifications for the implementation and maintenance of erosion control measures and site specific BMPs, including design, installation, maintenance, and effectiveness monitoring details.
- Proposed schedule including intervals for inspection of erosion control/SWPPP measures and schedule for corrective actions/repairs, as necessary. Erosion control/SWPPP inspection reports shall be provided to the CPUC environmental monitor. Inspection and monitoring for erosion control/SWPPP measures shall be performed in compliance with the applicable federal (as required by BLM and/or DoD) and/or the California Construction General Permit and/or WDR conditions, as applicable. The minimum inspection schedule shall be as follows as required by the NPDES Construction General Permit:

Erosion control BMPs shall be inspected at least monthly. BMPs not performing as designed shall be replaced or repaired to restore the BMP function.

BMPs shall be inspected within 72 hours of a forecasted Qualifying Precipitation Event, defined as a rain event that produces 0.5 inch or more of precipitation with a period of 48 hours or more between rain events. BMPs not performing as designed shall be replaced or restored to restore the BMP function.

BMPs shall be inspected within 48 hours after a Qualifying Precipitation Event. BMPs not performing as designed shall be replaced or repaired to restore the BMP function.

- The discharger shall use non-structural and/or structural measures to replicate the pre-construction water balance (for the General Permit, this is defined as the volume of rainfall that ends up as runoff) for the smallest storms up to and including the 85th percentile, 24-hour precipitation event (or the smallest precipitation event that generates runoff, whichever is larger).

SCE shall provide draft and final grading plans to the CPUC for approval that define the locations of the specific features listed above and in the Erosion Control Plan. SCE shall submit evidence of possession of required permits prior to initiating soil disturbing activities. Permits may include NPDES California General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Report of Waste Discharge (ROWD), and associated WDR, CDFW Lake and Streambed Alteration Agreement, and potentially others, as applicable to the Project's use of federal and non-federal lands.

Significance after Mitigation: With implementation of a Project-specific erosion control plan, potential impacts associated with degradation of surface water, runoff, and

contributions of pollution into stormwater would be minimized, and potentially significant impacts would be reduced to **less-than-significant** levels.

Impact 3.10-1b: Project operation could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. (*Less than Significant*)

Once constructed, the Project subtransmission lines, access roads, and substations/switchyard would be operated and maintained in a manner consistent with SCE's current operational and maintenance procedures. As discussed in Section 2.5.1.4, new permanent access roads are anticipated to be required due to the unpredictability of existing unpaved roads in the area. These proposed access routes would require maintenance including cleaning ditches, moving and establishing berms, clearing drain inlets to culverts, repairing culverts, clearing and establishing water bars, controlling dust, and clearing vegetation, among other activities (described in Section 2.9.3.3 and 2.9.3.4). It is estimated that 2.2 afy of water would be used for dust control as part of access road maintenance. The SWPPP and/or WDRs applicable to the Project contain independently enforceable post-construction standards and requirements intended to limit runoff and the associated mobilization of pollutants in stormwater. Compliance with SCE operational and maintenance procedures would also help to reduce potential impacts associated with degradation of surface water, runoff, and contributions of pollution into stormwater. Therefore, the resulting impacts would be **less than significant**.

Mitigation: None required.

Criterion b) Whether the Project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.

Operation of the proposed Kramer, Edwards, and Holgate substation/switchyard improvements would not substantially add impervious surfaces, nor would these components require extensive or ongoing water supplies for their construction, operation, or maintenance. Therefore, operation of these components of the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that sustainable groundwater management of the basin would be impeded. *(No Impact)*

Impact 3.10-2: The Project could decrease groundwater supplies or interfere with groundwater recharge. (*Less than Significant*)

Construction

As noted in Chapter 2, *Project Description*, Section 2.7.8, the Applicant anticipates that water required for construction would be obtained through the City of California City, Antelope-East Kern Water Agency, or Mojave Water Agency. These water agencies source water supplies through a variety of sources including surface water, recycled water, SWP supplies, and groundwater. Therefore, a portion of the anticipated 476 acre-feet of water demand during construction would likely be obtained through groundwater supplies. The annual sustainable yield

of groundwater in California City is approximately 6,900 afy. If the construction demand was met entirely through California City (groundwater) supplies, the Project would access a small portion of the annual sustainable yield (approximately 3.4 percent annually) over the anticipated 24 months of construction.

Because the Antelope and Mojave groundwater basins are adjudicated, there are no effective groundwater sustainability plans; however, groundwater for these basins is managed by watermasters to ensure that demands do not exceed recharge capability nor result in conditions of overdraft. As described in Section 3.19, *Utilities and Service Systems*, there are multiple sources of water supply (including groundwater, surface water, and recycled water) potentially available to serve the Project's construction water requirements.

Construction of the Project would not entail placement of extensive impervious surface area and water requirements could be met through a variety of sources. Therefore, construction-related impacts would not impede sustainable management of groundwater resources. The resulting potential impacts would be **less than significant**.

Operation and Maintenance

Subtransmission Lines

Although foundations would be required to support TSPs along the proposed new subtransmission lines, and ancillary structures such as vault boxes would be impervious, these features represent a small fraction of surface area across the landscape capable of recharging the groundwater basins in the Project area. The landscape encompassing the groundwater basins consists of sparsely developed desert lands with vast areas remaining capable of recharging the groundwater basins. Stormwater falling on new impervious surfaces created by the Project would flow to surrounding pervious areas and infiltrate into the subsurface, as it does now.

The proposed new subtransmission lines would require new access roads, in some cases across undisturbed desert lands. The estimated land area of temporary and permanent disturbance is quantified in Table 2-4. To control dust along the unpaved access roads, it is estimated that the Project would require approximately 2.2 afy of water resources, some of which would presumably come from groundwater resources.

As described in Section 3.19, *Utilities and Service Systems*, the water requirements would be supplied through the City of California City or local water purveyors served by larger wholesalers such as the Antelope Valley-East Kern Water Agency or Mojave Water Agency. Because these water providers are not solely reliant on groundwater, the Project's use of water would not exceed the sustainable yield of the basin, nor would it substantially lower the groundwater table or otherwise interfere with sustainable groundwater management. The impact would be less than significant.

Cal City Substation Improvements

Although the interior fenced portion of the substation expansion (excluding driveways) would not be paved, there are numerous features that would limit infiltration of groundwater associated with the proposed Cal City Substation expansion and upgrade. Because the site is located upon an

ephemeral wash, extensive drainage improvements are proposed including a 62-foot-wide concrete canal intended to channel flows across the site into a rock (riprap) weir to allow for controlled sheet flow to occur across the site. The concrete canal would add extensive impervious surface area to the perimeter of the expansion site. However, the sheet flow at the outfall would return the stormwater to the ground where it would infiltrate into the subsurface, as it does now. Therefore, these components would not prevent recharge nor impede sustainable management of the groundwater basin.

Once constructed, most of the Project components would not result in the addition of extensive impervious surfaces such that groundwater recharge would be prevented. There are no ancillary water facilities proposed or required as part of any portion of the Project.

Therefore, operation of the Cal City Substation improvements would not impede sustainable management of the groundwater basin and the impact would be **less than significant**.

Mitigation: None required.

Criterion c) Whether the Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would: result in substantial erosion or siltation on- or off-site: substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; 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; or impede or redirect flood flows.

The proposed modifications at Kramer and Edwards substations and Holgate Switchyard consist solely of minor modifications within existing SCE facilities with minimal changes to site contours; thus, the activities associated with those Project components would have no impact related to runoff and are not discussed further. *(No Impact)*

Impact 3.10-3a: Project construction of subtransmission lines and Cal City Substation improvements would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. (*Less than Significant with Mitigation*)

As outlined in Chapter 2, *Project Description*, Table 2-4, it is estimated that the Project could result in approximately 695 acres of temporary disturbance and approximately 207 acres of permanent disturbance area, which would alter drainage patterns and site conditions with respect to runoff. Extensive drainage improvements are proposed at the Cal City Substation, including a stormwater detention basin to capture runoff.

Construction of the proposed new subtransmission lines, access roads, and the Cal City Substation expansion would entail ground-disturbing earthwork, vegetation clearing including blade grading, trenching for installation of underground distribution conductor and cable duct banks, excavation for vaults and structure foundations, rehabilitation of existing and development

of new access routes, ground compaction, drilling and micro piling for TSP installations, auguring for direct bury LWS pole installation, and equipment and materials staging on bare ground, among other activities (described in further detail in Section 2.7).

Subtransmission Lines

The proposed new Kramer-Cal City 115 kV Subtransmission Line would include ground disturbance, excavation, and installation of foundations and support structures. Areas of disturbance associated with the subtransmission line and access roads are quantified in Table 2-4. The proposed new subtransmission line would extend approximately 42 miles into areas not currently under a franchise right-of-way (ROW) or easement, as depicted in the maps provided by SCE (Appendix A).

The proposed new Cal City-Edwards-Holgate Subtransmission Line would also entail new areas of soil disturbance associated with access roads, excavation, and staging areas (Table 2-4). The proposed new subtransmission line would extend approximately 28 miles and include a tap line connecting to Edwards Substation. Excavation and auguring would occur to install the new LWS poles, H-frames, and TSPs within a new ROW alignment (as depicted in Appendix A).

As noted in Section 2.7.1.4, multiple watercourse crossings would require construction of permanent improvements such as hardened (riprap) structures placed upstream and downstream of the crossing along existing and proposed new access roads. The proposed new subtransmission lines would extensively alter drainage patterns and site contours. Because extensive disturbance (quantified in Table 2-4) is anticipated for the subtransmission line alignment and associated access roads, the subtransmission lines have the potential to result in erosion and contribute runoff to the storm drains or surface waters in the region during construction. Additionally, in the absence of site controls, such as spoils pile management, and proper handling of potentially hazardous construction substances, stormwater could mobilize pollutants through runoff. This would be considered a potentially significant impact.

As discussed, SCE has also proposed implementation of BMPs based on California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices* (SCE 2023). The BMPs listed in Section 3.10.3.2 would be implemented to reduce runoff, control erosion, and properly manage materials, site fuel use, and otherwise prevent leaks and spills during construction. APM WET-1 would protect drainages by requiring that all grading, fill, staging of equipment, infrastructure construction or removal, and all other construction activities be designed, sited, and conducted outside of state and federally jurisdictional waters, wetlands, and riparian areas. APM HAZ-2 would provide for the proper handling, on-site management, and disposal of impacted soil that may be encountered during construction. These APMs and BMPs would provide pollution source control and other impact minimization measures.

Additionally, Mitigation Measure 3.10-1a is recommended to require an erosion control plan to reduce the impact to less-than-significant levels. The erosion control plan mitigation contains requirements for maintenance, monitoring, and tracking the effectiveness of the erosion control devices to ensure that the measures perform as designed to control erosion and limit runoff.

Cal City Substation Improvements

The proposed improvements to the existing Cal City Substation would entail an approximately 10-acre expansion of the existing 5-acre substation and would include major drainage improvements upon the perimeter of the site, as described in Section 2.7.6.1 and depicted on the site development plan (Figure 2-8).

As discussed in the environmental setting, Cal City Substation is located in a FEMA designated special flood hazard zone with portions within and adjacent to the 100-year flood zone and in close proximity to the 500-year flood zones. Given the level of disturbance and the alteration of the landscape required as part of the substation upgrade, construction has the potential to generate additional sources of polluted runoff and/or redirect flows.

APM WET-1 (described in Section 3.10.3) would be implemented as part of the Project to minimize impacts to wetlands and jurisdictional waters. As noted under Impact 3.10-1a, the Project would also be required to prepare a SWPPP as part of the Construction General Permit. It is likely that the SWPPP would contain measures intended to reduce erosion. However, in the absence of a Project-specific erosion control plan, it is unclear if such measures and the associated BMPs would be effective at minimizing impacts and reducing runoff associated with such an extent of site disturbance. Therefore, construction of the Cal City Substation improvements could result in conditions of uncontrolled erosion and runoff, which would result in an impact that would be potentially significant.

For these reasons, Mitigation Measure 3.10-1a, Erosion Control Plan (described under Impact 3.10-1a), is recommended to ensure that the specific measures and BMPs are maintained, monitored, and tracked for effectiveness and to reduce the impact to a **less-than-significant** level.

> **Mitigation:** Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a)
>
> **Significance after Mitigation:** Less than Significant.

Impact 3.10-3b: Project operation of subtransmission lines and Cal City Substation improvements would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. (*Less than Significant*)

Subtransmission Lines

Once constructed, water would be applied in the unpaved roadways to control dust. The proposed permanent hardened water crossings would be maintained and monitored by SCE consistent with post construction SWPPP requirements and WDRs. As discussed under Impact 3.10-1a, access routes would require maintenance including cleaning ditches, moving and establishing berms, clearing drain inlets to culverts, repairing culverts, clearing and establishing water bars, controlling dust, and clearing vegetation, among other activities.

The various water crossings and storm drain inlets, culverts, and other conveyance structures would be monitored and maintained in a manner that reduces erosion and controls runoff,

consistent with SCE procedures and NPDES permit requirements. With regular maintenance and monitoring of the access routes and implementation of the associated independently enforceable post-construction discharge monitoring requirements, WDR conditions, and SWPPP measures, potential impacts would be less than significant.

Cal City Substation Improvements

As described in Chapter 2, *Project Description*, civil work at the Cal City Substation would include a new concrete-lined drainage channel that would extend along the southerly, westerly, and northerly sides of the expanded substation property. The 62-foot-wide channel would capture flows from the west and south off-site tributary area (run-on) and would route flows around the Project infrastructure, conveying flows to a riprap area where a concrete wet crossing would allow a natural flow path outfall to an existing discharge point at the northeast corner of the property, on 90th Street. Sheet flow would be from west to east. A 5-foot-wide, 1-foot-deep concrete-lined channel would be located along the easterly side of the property between the fence and 90th Street. It is estimated that approximately 3.5 acres of additional impervious surface area would be added as part of the expanded substation. Concrete culverts measuring 2 feet by 4 feet would be installed under each proposed driveway. An approximately 100-foot-long, 50-foot-wide, 5-foot-deep basin would be installed for water quality and reduction of runoff. Engineered (secondary) spill containment structures would also be included as part of the Project for the six proposed transformers.

Because the site (and the Project as a whole) would involve more than 1 acre of disturbance area, a SWPPP would be required to be implemented as part of the Construction General Permit. The SWPPP would also contain post-construction measures and would be maintained in a manner consistent with SCE procedures and the applicable NPDES permit conditions. With adherence to the permit conditions, potential impacts would be **less than significant**.

Mitigation: None required.

Criterion d) Whether the Project in flood hazard, tsunami, or seiche zones, would risk release of pollutants due to project inundation.

The Project is proposed in an inland desert location with no coastal influence as discussed in the environmental setting. Therefore, there is no risk for tsunami. In addition, there are no isolated lakes or large bodies of water of sufficient size in the Project vicinity. Therefore, there are no risks associated with seiches. Because the Project is not located in a tsunami or seiche zone, there is no risk for release of pollutants due to project inundation. *(No Impact)*

In addition, because proposed improvements at Edwards and Kramer substations would not occur in flood hazard zones, there is no risk for release of pollutants due to inundation at these Project sites. *(No Impact)*

The Cal City Substation improvements, the Holgate Switchyard improvements, and portions of the subtransmission alignments would be partially located in the 100-year floodplain (as depicted

on Figure 3.10-1). In the event of inundation, these components of the Project would be at risk for the release of pollutants during the construction and operation and maintenance phases. The discussion below focuses on flood hazard zones in the vicinity of the proposed subtransmission line alignments, Cal City Substation, and Holgate Switchyard as identified on Figure 3.10-1.

Impact 3.10-4a: The Project subtransmission lines and Cal City Substation improvements would be located in a flood hazard zone which would present a risk of release of pollutants due to inundation during flooding. (*Less than Significant with Mitigation*)

As described in Section 2.7.13, to address the potential for contamination of soil or groundwater, SCE would develop and implement a soil management plan in accordance with APM HAZ-2 (see Section 3.10.3.1). The plan would direct that, if encountered, contaminated soil be segregated, sampled, and tested to determine appropriate disposal options. If the soil is classified as hazardous, it would be properly managed on location and transported in accordance with U.S. Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility, as approved by SCE. Should potentially contaminated groundwater be encountered, groundwater samples would be collected and tested to determine appropriate treatment and disposal. Hazardous waste would be transported and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public.

Subtransmission Lines

Portions of the Project's proposed subtransmission lines would be located within a 100-year floodplain. Therefore, some structures proposed as part of the subtransmission lines would be installed within areas subject to inundation during rain events that cause flash flooding as can occasionally occur in winter months in the desert. As discussed under Impact 3.10-3, extensive soil disturbance would occur during construction associated with the subtransmission line access roads and other Project features. The ground-disturbing activity has the potential to release pollutants into stormwater during flooding. The Project includes BMPs (as listed in Section 3.10.3.2) that would be implemented as necessary during construction; however, these measures are not specific regarding implementation and do not support the requirements of the current Construction General Permit. Therefore, it is not clear if they would be effective in reducing the release of pollutants and the potential impact associated with the risk of release of pollutants due to inundation during flooding would be significant.

To ensure that the drainage features in the vicinity of the new subtransmission lines would be maintained, perform as designed with respect to runoff, and do not result in the release of contaminants due to inundation during flooding, Mitigation Measure 3.10-1a (described under Impact 3.10-1a) is recommended to augment the BMPs proposed by SCE.

Cal City Substation Improvements

As depicted in Figure 3.10-1, the Cal City Substation improvements would be located within a FEMA special flood hazard area 100-year floodplain with no identified base flood elevation. Proposed new substation structures require use of potentially hazardous substances (e.g., mineral oil used to maintain transformers). However, as designed secondary containment is proposed for the purpose of capturing any leaks that could occur from the proposed transformers. As described

under Impact 3.10-1, extensive drainage improvements are proposed to allow for controlled stormwater during high flow events. A stormwater detention basin is also proposed for the purpose of capturing stormwater pollutants.

As discussed in further detail in Section 3.9, *Hazards and Hazardous Materials*, SCE has committed to compliance with all regulatory requirements including those regarding the storage, handling, transport, and use of hazardous materials. A hazardous materials management plan would be developed and implemented to ensure that all aspects of the Project would be managed in a manner consistent with regulatory requirements governing hazardous materials. Additionally, APM HAZ-2 contains provisions for soil management to prevent the release of pollutants during construction activities that could otherwise contaminate the land during flood events and seep into surface and groundwater. The substations would be maintained in a manner consistent with regulatory requirements governing site contamination.

Additionally, SCE has proposed BMPs (as listed in Section 3.10.3.2) to limit runoff and control erosion, and to limit the release of contaminants during construction; however, these measures are not specific regarding implementation and do not support the requirements of the current Construction General Permit. Therefore, it is not clear if they would be effective in reducing the release of pollutants and the potential impact associated with the risk of release of pollutants due to inundation during flooding would be significant.

To ensure that the drainage features at Cal City Substation would be maintained, perform as designed with respect to runoff, and do not result in the release of contaminants due to inundation during flooding, Mitigation Measure 3.10-1a (described under Impact 3.10-1a), is recommended to augment the BMPs proposed by SCE.

In addition, SCE has proposed BMP measures to control erosion; however, they are not specific regarding implementation and do not support the requirements of the current Construction General Permit. Therefore, it is not clear if they would be effective in reducing the release of pollutants and the potential impact associated with the risk of release of pollutants due to inundation during flooding at Holgate Switchyard would be significant. To ensure that the drainage features at Holgate Switchyard would be maintained, perform as designed with respect to runoff, and do not result in the release of contaminants due to inundation during flooding, Mitigation Measure 3.10-1a (described under Impact 3.10-1a), is recommended to augment the BMPs proposed by SCE.

> **Mitigation:** Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a)
>
> **Significance after Mitigation:** Less than Significant.

Impact 3.10-4b The Holgate Switchyard located in a flood hazard zone would risk release of pollutants due to inundation during flooding. (*Less than Significant*)

Similar to the Cal City Substation, the Holgate Switchyard is also located in a 100-year floodplain; therefore, there is risk for inundation under existing and proposed conditions. Proposed improvements at the Holgate Switchyard would consist of installing equipment at one existing

115 kV line position and installing two 115 kV SF_6 gas insulated circuit breakers within the switchyard. Existing protection would be upgraded with new relays and protection racks for four 115 kV lines and the north 115 kV bus. Additional protection and telecommunications equipment would also be installed within the existing facility. Because the site would require very limited use of hazardous materials such as fuels, lubricants, and cleaning solvents, there is a low potential for release of these contaminants. As with the substations, SCE would maintain the equipment in a manner consistent with regulatory requirements and existing operational and maintenance procedures including requirements to maintain secondary containment of hazardous material. Because the proposed switchyard expansion would entail limited soil disturbance and the existing facility already implements secondary containment, the impact associated with release of pollutants would be **less than significant**.

Mitigation: None required.

Criterion e) Whether the Project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The Project is not proposed in a location with an effective sustainable groundwater management plan. Therefore, the Project would not conflict with or obstruct implementation of a sustainable groundwater management plan. *(No Impact)*

Impact 3.10-5: The Project could conflict with or obstruct implementation of a water quality control plan. (*Less than Significant with Mitigation*)

The Project would include activities during construction, operation, and maintenance that could result in conditions of runoff or otherwise compromise water quality (as discussed under Impacts 3.10-3a and 3.10-3b). APM WET-1 would be implemented by SCE to avoid and minimize impacts to wetlands and waters, among other BMPs and discharge requirements (described below) intended to limit potential water quality effects.

Construction of the Project would involve disturbance of more than 1 acre of soil; therefore, coverage under the Construction General Permit would be required. All components of the Project would be included in the Project's SWPPP, which is required as part of the Construction General Permit. The SWPPP would include site-specific BMPs to limit discharge of pollutants into stormwater. Coverage under the Construction General Permit and the associated requirements and implementation measures is consistent with Basin Plan requirements for the protection of water quality and beneficial uses of surface and groundwaters (identified in Table 3.10-1). The Project is proposed in a location lacking perennial surface waters and in a closed basin with no outlets to perennial surface waters. There are no waters in the Project vicinity that are subject to TMDLs or are listed on the CWA Section 303d List as being impaired for specific pollutants; therefore, there are no potential conflicts with a TMDL or pollutant impairments on listed waters that could be attributable to the Project.

Because the Project proposes dredge and fill activities in non-federally jurisdictional wetlands and waterways, SCE intends to file a ROWD and initiate the WDR for the Project. The WDR

would contain independently enforceable discharge requirements including conditions intended to limit water quality violations. However, the WDR conditions have not yet been determined. Furthermore, it is not certain that the applicant proposed measures, BMPs, and drainage features would be maintained, perform as designed with respect to runoff, and not result in sedimentation or otherwise substantially degrade surface water or groundwater. Therefore, the Project may conflict with the Basin Plan and result in a potentially significant impact.

Mitigation Measure 3.10-3a (described under Impact 3.10-3a) would ensure that the measures to reduce runoff and control erosion continue to perform as intended. The mitigation contains provisions to require that such measures would be maintained, monitored, and tracked for effectiveness. Therefore, the construction, operation, and maintenance impact related to compromising the beneficial uses of water in the basin and conflicting with the Lahontan Basin Plan would be **less than significant with mitigation**.

> **Mitigation:** Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a).
>
> **Significance after Mitigation:** Less than Significant.

3.10.5.3 Cumulative Effects Analysis

This section presents an analysis of the cumulative effects of the Project when considered in combination with other past, present, and reasonably foreseeable future projects that could result in cumulatively considerable impacts. Significant cumulative impacts related to hydrology and water quality could occur if the incremental impacts of the Project combine with the incremental impacts of one or more cumulative projects. Section 3.0.4, *Approach to Cumulative Impacts Analysis*, includes Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, which lists past, present, and reasonably foreseeable future projects within a 5-mile radius of the Project site.

The geographic area affected by the Project and its potential to contribute to cumulative impacts varies based on the environmental resource under consideration. The geographic scope of analysis for cumulative hydrological and water quality impacts includes a 5-mile radius buffer area surrounding the Project site.

The timeframe during which construction of the Project could contribute to cumulative effects includes the approximate 24-month duration for construction. Because decommissioning is not planned, the operation and maintenance phase is considered permanent or extending in perpetuity.

Criterion a)

Impact C.3.10-1a The Project construction impact on water quality standards, waste discharge requirements, or other Project degradation of surface or ground water quality would be cumulatively considerable. (*Less than Significant with Mitigation*)

As noted under Impact 3.10-1, the Project's construction ground-disturbing activities have the potential to violate water quality standards and generate significant impacts. SCE would be required to obtain NPDES coverage under the state Construction General Permit program and implement a SWPPP and/or WDR. In addition, the Project includes BMPs (as listed in

Section 3.10.3.2) that would be implemented as necessary during construction to limit erosion, prevent runoff, provide procedures for safe transport, handling, and management of contaminants, provide procedures to be followed in the event of incidental leaks and spills, among other measures. However, the effectiveness of the measures is unknown because they are not specific regarding implementation and (as described) do not support the requirements of the current Construction General Permit and the Project impact associated with degradation of surface water, runoff, and contributions of pollution into stormwater would be potentially significant.

When considered with potential similar incremental impacts of the cumulative projects that would occur within a similar timeframe, the Project construction impact associated with degradation of surface water, runoff, and contributions of pollution into stormwater would be cumulatively considerable. Mitigation Measure 3.10-1, which would require the preparation of a Project-specific Erosion Control Plan, is recommended to augment BMPs proposed by SCE. Implementation of Mitigation 3.10-1a would reduce the Project impact to less than cumulatively considerable and the cumulative impact would be reduced to a less-than-significant level.

> **Mitigation:** Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a).
>
> **Significance after Mitigation:** Less than Significant.

Impact C.3.10-1b: The Project operation impact on water quality standards, waste discharge requirements, or other degradation of surface or ground water quality would not be cumulatively considerable. (*Less than Significant*)

The SWPPP and/or WDRs applicable to the Project contain independently enforceable post-construction standards and requirements intended to limit runoff and the associated mobilization of pollutants in stormwater. Compliance with SCE operational and maintenance procedures would also help to reduce the Project's potential impacts associated with degradation of surface water, runoff, and contributions of pollution into stormwater. The Project impact would be less than significant. When considered with potential similar incremental impacts of the cumulative projects that would occur within a similar timeframe, the Project operation impact associated with degradation of surface water, runoff, and contributions of pollution into stormwater would not be cumulatively considerable and the cumulative impact would be less than significant.

> **Mitigation:** None required.

Criterion b)

Operation of the proposed Kramer, Edwards, and Holgate substations/switchyard improvements would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that sustainable groundwater management of the basin would be impeded. Since there would be no Project impact, operation of those Project components would not contribute to a cumulative groundwater impact. *(No Impact)*

Impact C.3.10-2: The Project impact on groundwater supplies or interference with groundwater recharge would not be cumulatively considerable. (*Less than Significant*)

The Project would require groundwater resources during construction, and to a lesser degree during the operation and maintenance phases, primarily for dust control. It is anticipated that this water would be obtained through local sources in a basin that is adjudicated. Use of this water would be subject to availability and would require approval from the City of California City or another local water agency. As noted under impact 3.10-2, use of groundwater is not expected to exceed sustainable yield in the groundwater basin during any phase of the Project, nor is the Project expected to result in substantial additional impervious surface area. Even after construction, most of the land surface in the study area would remain capable of infiltrating and recharging the groundwater table. The Project impact would be less than significant.

Other similar projects in the cumulative scenario (described in Table 3.0-1) may also require water resources for their construction, operation, or maintenance. Because most of these projects are also proposed in an adjudicated basin, use of this water would be subject to availability and approval on a case-by-case basis from the water purveyors extracting groundwater from the basin. When considered together with other similar impacts of the projects identified in Table 3.0-1, the Project impact associated with decreased groundwater supplies or interference with groundwater recharge would not be cumulatively considerable. The cumulative impact would be less than significant.

Mitigation: None required.

Criterion c)

Impact C.3.10-3a: The Project construction impact on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would be cumulatively considerable. (*Less than Significant with Mitigation*)

As discussed under Impact 3.10-3, the Project would involve extensive alteration of the existing drainage patterns associated with approximately 695 acres of disturbance. Construction would potentially result in conditions of runoff and erosion. Because more than one acre of soil would be disturbed during construction, the Project would obtain coverage under the construction general permit and would implement measures to control discharge of pollutants into stormwater. WDR's may also be obtained due to the multiple non-jurisdictional wetlands and watercourses crossed by components of the Project. The Project construction impact would be potentially significant.

Construction of other projects identified in Table 3.0-1 that disturb 1 or more acres of land would presumably also be required to obtain coverage and implement measures to reduce runoff and erosion-related impacts as part of a site-specific SWPPP for those projects. The Construction General Permit has been developed to address cumulative conditions related to stormwater discharges that occur throughout the state. However, when considered together with other similar impacts of the projects identified in Table 3.0-1, the Project impact would be cumulatively considerable. With implementation of Mitigation Measures 3.10-1a, *Erosion Control Plan*, the

Project's incremental construction impact would not combine to result in a cumulatively considerable condition with respect to stormwater quality. Construction-related cumulative impacts would be mitigated to less than significant.

Mitigation: Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a)

Significance after Mitigation: Less than Significant.

Impact C.3.10-3b: The Project operation impact on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would not be cumulatively considerable. (*Less than Significant*)

As discussed above, the Project would be maintained and monitored by SCE in a manner that adheres to regulatory requirements and WDR conditions and/or post construction SWPPP requirements intended to limit runoff and control discharge of pollutants into stormwater. The Project operation impact would be less than significant. Other projects in the cumulative scenario would also be held to similar requirements to minimize stormwater contamination. Therefore, the identified less-than-significant direct and indirect operation effects of the Project would not incrementally combine with incremental impacts of other projects to result in an impact that would be cumulatively considerable. The operation and maintenance-related cumulative impact would be less than significant.

Mitigation: None required.

Criterion d)

As discussed above, in Section 3.10.5, *Direct and Indirect Effects*, there would be no Project impact associated with tsunami and seiches that would contribute to a cumulative impact. In addition, because proposed improvements at Edwards and Kramer substations would not occur in flood hazard zones, there is no risk for release of pollutants due to inundation at these Project sites that could contribute to a cumulative impact. Therefore, these topics would not contribute to cumulative impacts and are not discussed in a cumulative context. *(No Impact)*

Impact C.3.10-4a: The Project impact of risk of release of pollutants due to inundation during flooding at the subtransmission lines and Cal City Substation improvements would be cumulatively considerable. (*Less than Significant with Mitigation*)

Portions of the Project would be in the 100-year floodplain. The Project would implement APMs WET-1, HAZ-2, among other actions and regulatory conditions in place, to limit potential release of contaminants that would otherwise risk release during occasional flood events. However, these measures are not specific regarding implementation and do not support the requirements of the current Construction General Permit. Therefore, it is not clear if they would be effective in reducing the release of pollutants and the Project impact would be potentially significant.

Combined with similar impacts from other projects identified in the cumulative scenario listed in Table 3.0-1, the Project impact associated with the risk of release of pollutants due to inundation during flooding could be cumulatively considerable. Mitigation Measure 3.10-1a, *Erosion*

Control Plan, is recommended to reduce the Project's contribution to the cumulative runoff and release of contaminants impact. With implementation of Mitigation Measure 3.10-1a, the Project's incremental cumulative impact would be mitigated to a less-than-significant level.

Mitigation: Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a)

Significance after Mitigation: Less than Significant.

Impact C.3.10-4b: The Project impact of risk of release of pollutants due to inundation during flooding at Holgate Switchyard would not be cumulatively considerable. (*Less than Significant*)

Similar to the Cal City Substation, the Holgate Switchyard is also located in a 100-year floodplain; therefore, there is a risk for inundation under existing and proposed conditions. However, because the site would require very limited use of hazardous materials such as fuels, lubricants, and cleaning solvents, there is a low potential for release of these contaminants. As would be required at Cal City Substations, SCE would maintain the equipment in a manner consistent with regulatory requirements and existing operational and maintenance procedures including requirements to maintain secondary containment of hazardous materials. The Project impact would be less than significant.

Other projects in the cumulative scenario would also be held to similar requirements to minimize stormwater contamination. In addition, as shown in Figure 3.0-1, Cumulative Projects within 5 Miles of the Project, there are no cumulative projects identified in the vicinity of Holgate Substation. Because the switchyard site would entail limited soil disturbance and the Project would implement secondary containment, the Project impact would not be cumulatively considerable, and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion e)

As noted under Criterion b), the Project would require water resources including groundwater during construction, operation, and maintenance. The Project is not proposed in a location with an effective sustainable groundwater management plan. Therefore, the Project would not conflict with or obstruct implementation of a sustainable groundwater management plan. There would be no impact related to such conflicts attributable to the Project; therefore, there would be no associated cumulative impact. *(No Impact)*

Impact C.3.10-5: The Project impact of conflicting with or obstructing implementation of a water quality control plan would be cumulatively considerable. (*Less than Significant with Mitigation*)

The Project would be generally consistent with the Basin Plan and would protect the identified beneficial uses of surface waters and groundwater listed in Table 3.10-1. As described, although the Project would include substantial disturbance to the landscape and alter drainage patterns, SCE would obtain coverage including a Construction General Permit and WDR to permit this

alteration. These permits would stipulate conditions that the Project would have to comply with during all phases of the Project. As described under Impact 3.10-1a, due to the extensive soil disturbance anticipated to occur with the Project, it is not clear if BMPs as proposed by SCE would be effective in protecting water quality. Therefore, Project impact would be potentially significant.

Other projects identified in the cumulative scenario listed in Table 3.0-1 that would include similar or different levels of disturbance could result in similar impacts as the Project. Therefore, the Project impact would be cumulatively considerable. To ensure the Project drainage features would be maintained, continue to perform as designed with respect to runoff, and not result in cumulatively considerable sedimentation, Mitigation Measure 3.10-1a (described under Impact 3.10-1a) is recommended. With mitigation implemented, the impact of the Project potentially conflicting with or obstruct implementation of a water quality control plan would not be cumulatively considerable. The cumulative impact would be mitigated to less than significant.

> **Mitigation:** Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Impact 3.10-1a)
>
> **Significance after Mitigation:** Less than Significant.

3.10.6 References

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3.11 Land Use and Planning

This section evaluates the impacts of the Project relative to land use and planning. It presents information about the environmental and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The CPUC did not receive scoping comments pertaining to land use and planning.

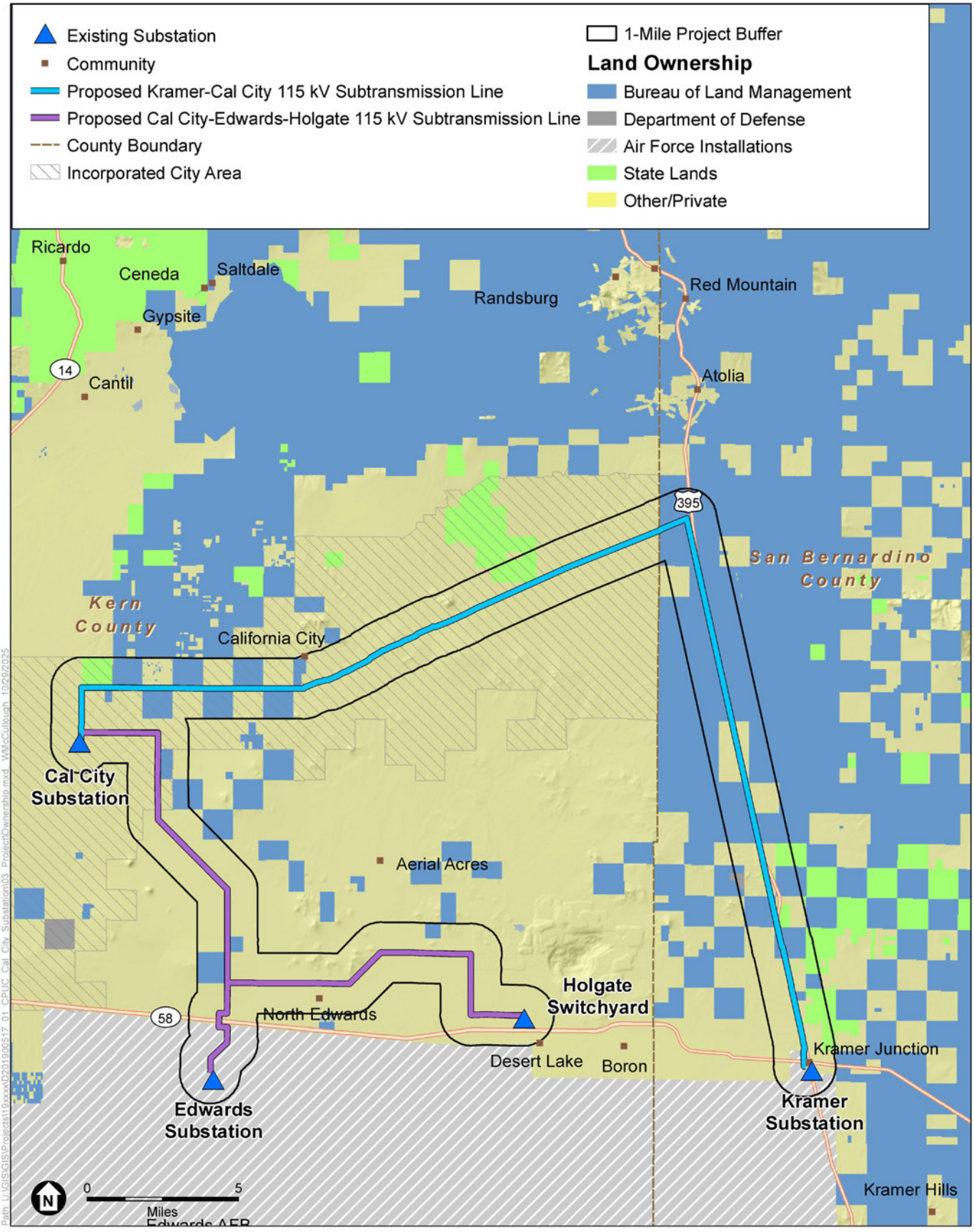
The study area for the analysis of potential impacts associated with land use and planning is defined as the Project sites, including all areas of temporary and/or permanent ground disturbance and the surrounding land uses within which the Project would be constructed and operated.

3.11.1 Environmental Setting

The Project is located in Kern County and San Bernardino County in the Mojave Desert region of California on federal, state, private, and municipal land. These lands include unincorporated areas of Kern County and San Bernardino County, incorporated lands within the City of California City, lands within Edwards Air Force Base (EAFB) controlled by the U.S. Department of Defense (DoD), and public lands under the jurisdiction of the U.S. Bureau of Land Management (BLM) and California Department of Fish and Wildlife (CDFW). **Figure 3.11-1**, *Land Management*, shows the land ownership or management at the Project sites and alignments and within a 1-mile radius buffer area. Lands within the Project sites and 1-mile buffer are primarily under private ownership and BLM management.

Approximately 90 percent of the Project is located within undeveloped open areas, with the remaining 10 percent located within developed areas. As shown in Figure 3.11-1, developed areas include portions of the Project within the city of California City, as well as communities in the unincorporated county areas such as North Edwards and Kramer Junction. Portions of California City surrounding the developed areas are mapped but are undeveloped residential subdivisions. In some of the undeveloped subdivisions, the local transportation network is partially installed with unpaved roads. Throughout the remainder of the Project site, the undeveloped open areas include infrequent rural residences and informal rural roads or off-road vehicle (OHV) paths but are primarily sparsely vegetated and open.

SCE has existing rights-of-way (ROWs), which are a combination of easements, permits, grants, and/or franchise rights along portions of the Project alignment. The Project would be constructed in existing and new ROWs located on federal, state, municipal, and private lands within Kern County, San Bernardino County, and the City of California City. The Project proposes to replace, modify, and install facilities within or near existing SCE facilities and/or ROW along portions of the Project alignments where such existing facilities and/or ROW exist.



SOURCES: ESA, 2023; SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.11-1
Land Management

3.11.1.1 Jurisdictional Setting

The following sections further describe the environmental setting within the City of California City, Kern and San Bernardino counties, and EAFB for both the Project and the Alternatives. **Figure 3.11-2** depicts the General Plan land use designations that have been consolidated into broader categories within the Project alignments and a 1-mile radius buffer. **Figure 3.11-3** shows the consolidated zoning designations within the Project alignments and a 1-mile buffer. Each figure is discussed in further detail in the following sections.

City of California City

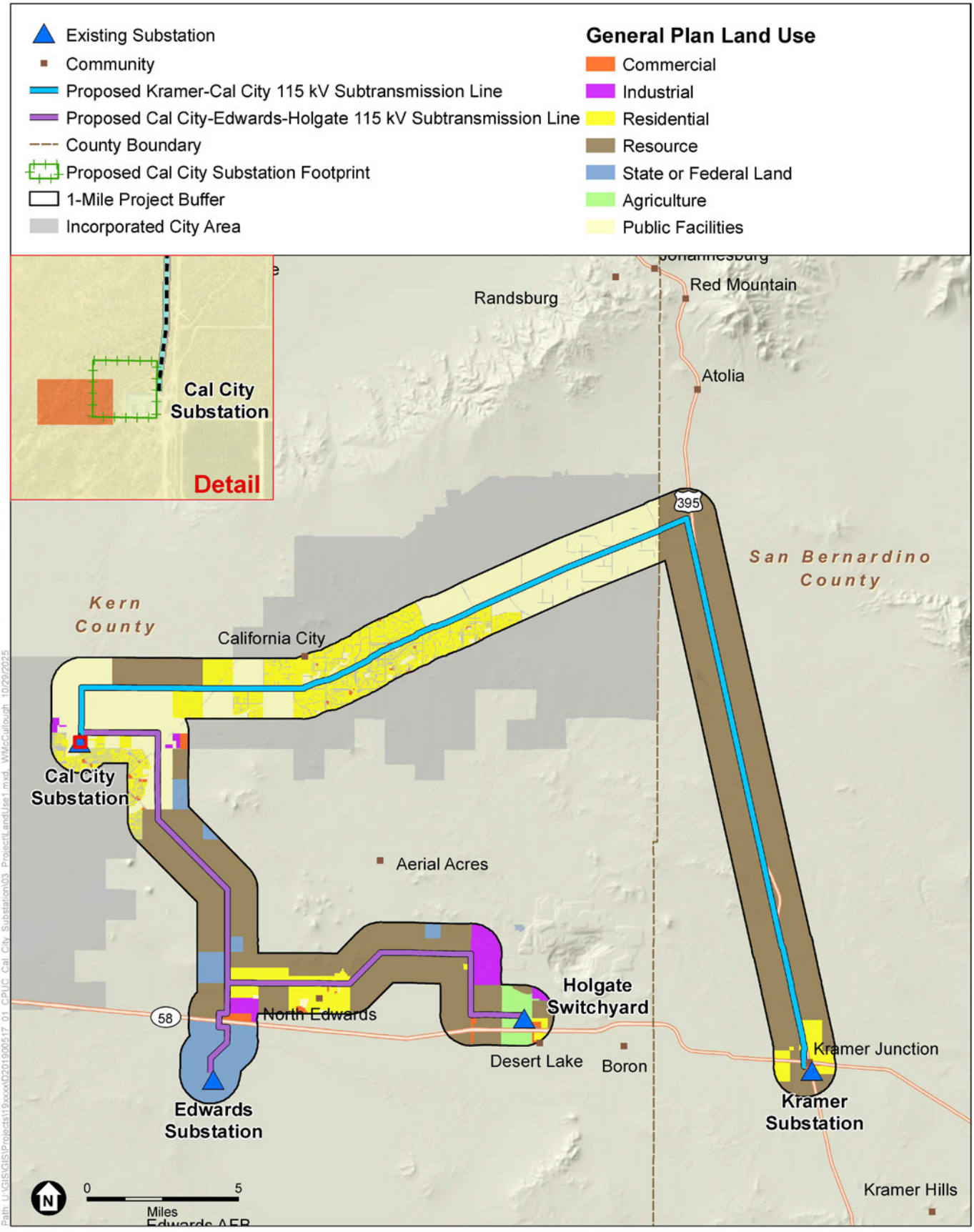
The Cal City Substation expansion area and portions of the new Kramer-Cal City and Cal City-Edwards-Holgate 115 kV subtransmission line alignments are within the City of California City boundaries. The Cal City Substation would be expanded by approximately 10 acres onto adjacent undeveloped land owned by SCE. The Cal City Substation is within Planning Sub-Area 1 of the city's 2009 General Plan (City of California City 2009) but is not within a designated Specific Plan area. Planning Sub-Area 1 comprises the city's central core and surrounding undeveloped land. As shown in Figure 3.11-2, the parcels containing the proposed Cal City Substation expanded footprint are designated for commercial and public facilities land uses in the city's General Plan. The parcels are zoned for commercial and resource conservation development (City of California City 2022), as depicted in Figure 3.11-3. Adjacent land uses surrounding the substation include residences, vacant land, and the California City High School to the south; vacant, residential, and solar energy generation to the east; and vacant land to the north and west.

The portions of the Kramer-Cal City 115 kV Subtransmission Line alignment within California City are on parcels within residential and resource land use designations and are zoned for resource conservation. The Subtransmission Line would traverse mostly vacant land and the occasional rural road, but it would be just south of the Borax Bill Park and Station campground near the Rudnick Boulevard and 20 Mule Team Parkway intersection. The portions of the Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment within California City are also zoned for Agriculture and Residential uses.

Kern County

The Holgate Switchyard improvements and a segment of the new Cal City-Edwards-Holgate 115 kV Subtransmission Line would be within unincorporated Kern County. The Holgate Switchyard and improvements would be on parcels designated for agricultural land uses in the County's General Plan (Kern County 2009) and zoned for agricultural development under the Kern County Zoning Ordinance (Kern County 2022). Parcels adjacent to the Holgate Switchyard are currently vacant, but there is an unincorporated community, Desert Lake, approximately 0.5 miles to the south along State Route 58.

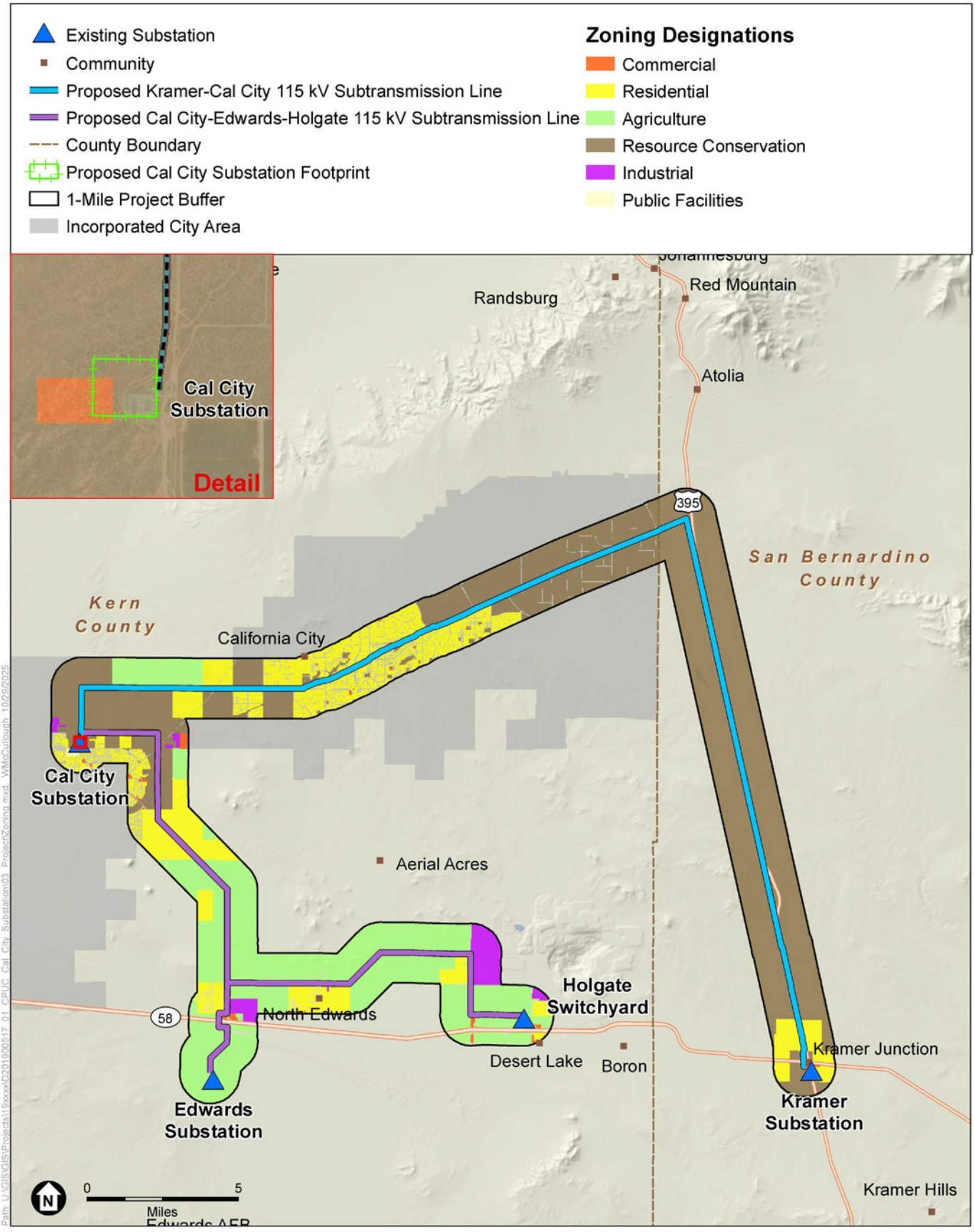
Segments of the new Cal City-Edwards-Holgate 115 kV Subtransmission Line in unincorporated Kern County, including the telecommunication-related components, would be on parcels designated and zoned for agriculture, industrial, and residential uses.



SOURCES: ESA, 2023; SCE, 2023; Kern County, 2024; SB County, 2024 California City, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.11-2
General Plan Land Use Designations



SOURCES: ESA, 2023; SCE, 2023; Kern County, 2024; SB County, 2024 California City, 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.11-3
Zoning Designations

San Bernardino County

The Kramer Substation improvements and portions of the new Kramer-Cal City 115 kV Subtransmission Line would be within unincorporated San Bernardino County. The existing Kramer Substation is within unincorporated Kramer Junction, one of the North Desert Communities (which includes Red Mountain, Hinkley, Hodges, Lenwood, and Barstow Heights). According to the Countywide Plan's North Desert Communities Action Guide, the community of Kramer Junction was formed in the early 1900s around the local railroad junction to support mines in the area (San Bernardino County 2020). Currently, Kramer Junction surrounds the intersection of U.S. Highway 395 and State Route 58. The existing Kramer Substation is adjacent to U.S. Highway 395, with a California Department of Transportation maintenance station directly south, vacant land to the west, a Pilot Travel Center and State Route 58 to the north, and commercial development catering to travelers to the east. The parcels containing the existing Kramer Substation are designated for resource protection under the County's General Plan and are zoned for resource conservation in the County's Development Code (San Bernardino County 2020, 2024).

Segments of the new Kramer-Cal City 115 kV Subtransmission Line alignment, including the telecommunications-related components, are on lands designated and zoned for resource conservation and residential uses under the San Bernardino County General Plan and Development Code. Lands along the subtransmission line alignment are primarily vacant, with limited portions of industrial and commercial uses along U.S. Highway 395.

Edwards Air Force Base

The existing Edwards Substation is located on DoD property on EAFB, at the intersection of Rosamond Boulevard and North Base Road. The existing land surrounding the site is primarily vacant except for a solar energy facility to the south.

Approximately 2.1 miles of the proposed new Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment is within EAFB, along or adjacent to an existing unpaved road, crossing an existing railroad track before paralleling Rosamond Boulevard. Approximately 0.6 mile of the proposed Kramer-Cal City 115 kV Subtransmission Line alignment is located on DoD property within EAFB, adjacent to the Kramer Substation site and surrounding development.

Bureau of Land Management

Portions of the Project are located within or adjacent to lands owned and managed by the BLM, as shown in Figure 3.11-1. The entirety of the Project is within the BLM-managed California Desert Conservation Area (CDCA) and is covered by the Desert Renewable Energy Conservation Plan (DRECP).

Most of the BLM lands are on either side of the U.S. Highway 395 corridor, along the north-south extent of the Kramer-Cal City 115 kV Subtransmission Line alignment. There are also BLM lands along portions of the Kramer-Cal City 115 kV Subtransmission Line alignment within the California City boundaries. Additionally, the new Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment crosses some BLM lands along 140th Street in unincorporated Kern County.

3.11.2 Regulatory Setting

3.11.2.1 Federal

Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) provides a regulatory framework for the management of BLM land and its use of resources. An important aspect of the FLPMA is that it supports multiple uses on public lands. The BLM also regulates rights-of-way (ROWs) for electrical power generation, transmission and distribution systems, systems for the transmission and reception of electronic signals and other means of communication, pipelines (other than oil and gas), railroads, highways, and other facilities or systems developed in the interest of the public under the FLPMA (BLM 2016a).

California Desert Conservation Area Plan

The CDCA Plan is an expanse of land covering approximately 26 million acres in southern California that was designated by Congress in 1976 through the FLPMA, of which approximately 10.4 million acres are administered by the BLM. The CDCA Plan is a comprehensive, long-range plan for the management, use, development, and protection of lands within the CDCA (BLM 1999). The BLM adopted a Land Use Plan Amendment (LUPA), which amended the CDCA Plan in September 2016, as part of the DRECP planning process. The DRECP and the BLM LUPA are discussed in the following sections. For additional detail on the DRECP and the BLM LUPA, refer to Section 3.4, *Biological Resources*.

The CDCA contains Decision Criteria to be used in evaluating electrical utility project applications. The Decision Criteria are:

1. Minimize the number of separate rights-of-way by utilizing existing rights-of-way as a basis for planning corridors.
2. Encourage joint use of corridors for transmission lines, canals, pipelines, and cables.
3. Provide alternative corridors to be considered during processing of applications.
4. Avoid sensitive resources wherever possible.
5. Conform to local plans whenever possible.
6. Consider wilderness values and be consistent with final wilderness recommendations.
7. Complete the delivery-systems network.
8. Consider ongoing projects for which decisions have been made, for example, the Intermountain Power Project.
9. Consider corridor networks which take into account power needs and alternative fuel resources.

Desert Renewable Energy Conservation Plan

The DRECP is a multi-phase collaborative planning effort between the California Energy Commission, CDFW, BLM, and the U.S. Fish and Wildlife Service developed under the California Natural Community Conservation Planning Act (NCCPA). The DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside,

San Bernardino, and San Diego counties where renewable energy development may occur (BLM 2016b). The DRECP is meant to accomplish the following:

- Advance federal and state natural resource conservation goals and other federal land management goals.
- Meet the requirements of the federal Endangered Species Act, California Endangered Species Act, NCCPA, and FLPMA.
- Facilitate the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran Desert regions of southern California.

The DRECP identifies existing utility corridors and recognizes Conservation Management Actions, which restrict siting and construction activities to those existing utility corridors to minimize resource impacts by reducing the need for new, unplanned transmission infrastructure. See Biological Resources Section 3.4.3.1, for further discussion of the DRECP and its goals, objectives, and conservation management actions related to biological resources.

U.S. Bureau of Land Management Land Use Plan Amendment

The BLM LUPA establishes management direction for the permitting of renewable energy and transmission development on approximately 10 million acres of BLM-managed lands in the DRECP area. The LUPA Decision Area includes conservation designations and recreation designations throughout the CDCA, including California Desert National Conservation Lands, Areas of Critical Environmental Concern (ACECs), and Wildlife Allocations (BLM 2016c).

Edwards Air Force Base Integrated Natural Resources Management Plan

The EAFB Integrated Natural Resources Management Plan (INRMP) is the guiding document integrating natural resources stewardship with the EAFB mission (EAFB 2018). It identifies and plans for the comprehensive management of natural resources, land uses, and mission activities within the EAFB boundaries. All projects within EAFB are subject to review under the Air Force Environmental Impact Analysis Process to ensure consistency with the INRMP and proper coordination and planning. Goals and objectives relevant to the Project include:

Section 8.2, Fish and Wildlife Management

Goal 4: Maintain and enhance Quality and Quantity of Habitat.

Objective 4.1: Limit habitat disturbance of unimproved lands.

Objective 4.2: Limit creation of new roads.

Objective 4.3: Minimize dust build up on desert vegetation.

Goal 6. Improve Air Quality.

Objective 6.1: Reduce fugitive dust.

Section 8.13, Cultural Resources Protection

Goal 23: Protect Cultural Resources

Objective 23.1: Comply with cultural resource legal requirements when implementing natural resource projects.

3.11.2.2 State

California Public Utilities Commission, General Order 131-D

The CPUC is the lead agency for CEQA review of the Project and has authority over the discretionary project approval. The CPUC regulates services and utilities and assures California's access to safe and reliable utility infrastructure and services. The CPUC regulates utility construction by investor-owned utilities under its jurisdiction, including the location and relocation of transmission lines. Pursuant to General Order 131-D, the investor-owned utilities' work (as regulated by the CPUC) would not be subject to local land use approval requirements (CPUC 2023). Although local jurisdictions are preempted from using their local land use authority to regulate electric facilities constructed by public utilities, local agency plans would be consulted regarding land use matters.

California Fish and Game Code Wildlife and Natural Areas Conservation Act

The California Fish and Game Code regulates the majority of CDFW's jurisdiction. Pursuant to Section 2700 of the California Fish and Game Code, a public database was established for California's natural areas containing valuable wildlife habitat that supports many of the diverse wildlife communities throughout the state. These areas, while not specifically protected under the California Fish and Game Code, were compiled into a publicly accessible database to increase public awareness of Significant Natural Areas, which are further described in Section 1932 of the California Fish and Game Code (CDFW 2015).

West Mojave Desert Ecological Reserve

The West Mojave Desert Ecological Reserve is an approximately 18,000-acre property that was obtained for the purpose of preserving a representative portion of the West Mojave Desert. The property was designated as an ecological reserve by the California Fish and Game Commission in 1988. The West Mojave Desert Ecological Reserve is managed by CDFW for the protection of special status species. Approximately 0.6 mile of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment is located on two properties within the West Mojave Desert Ecological Reserve.

3.11.2.3 Local

Although the CPUC has jurisdiction over the siting and design of the Project, public utilities are directed to consider local regulations and consult with local agencies pursuant to CPUC General Order 131-D, Section XIV.B (CPUC 2023):

> *Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters.*

Therefore, this section discusses applicable local land use planning documents and policies relevant to the Project.

City of California City

City of California City General Plan 2009-2028

The City of California City General Plan 2009-2028 presents a blueprint for land uses guided by goals, policies, and implementation measures that resolve to enhance and protect the quality of life in California City (City of California City 2009). Relevant General Plan principles for Planning Sub-area 1 include:

Principles for Development within Existing Central Core Area:

- Preserve existing residential neighborhoods whose identity is characterized by the quality and maintenance of existing construction, stability, and reputation as a "special" place in the community.
- In-fill vacant parcels at densities that are consistent with existing land uses, and utilize sustainable principles.
- Provide for redevelopment and the intensification of area which are physically or economically depressed.
- Provide linkages, where feasible, to open space areas and recreational opportunities.

Additionally, Policy 16 in Section 2.8, *Land Use Issues and Opportunities*, speaks to new development within Planning Sub-area 1 but outside the central core:

> ***Policy 16.*** In-fill development in Planning Sub-area 1 around the City's central core area should be encouraged to maximize the availability of infrastructure, public facilities, and public services.

City of California City Code of Ordinances

Title 9, Chapter 2 (Zoning) of the City of California City's Code of Ordinances implements the land use designations specified in the city's General Plan (City of California City 2022). Portions of the Project within California City are on lands zoned for Open Space, Agriculture, Commercial, and Residential uses. Electric distribution substations are permitted in the RA (Residential Agricultural) district with a conditional use permit. Per Section 9-2.102 of the Code of Ordinances, the City's zoning code does not apply to "the construction, installation, operation, and maintenance of … public utility distribution and transmission lines, towers and poles … by a public utility under the jurisdiction of the Public Utilities Commission."

Kern County

Kern County 2009 General Plan

The Land Use, Open Space, and Conservation Element of the Kern County 2009 General Plan provides for a variety of land uses for future economic growth while also assuring the conservation of Kern County's agricultural, natural, and resource attributes (Kern County 2009). The Project is proposed within the Desert Region, in the Mojave – Fremont Valley and Boron areas of Kern County. Land use policies for both areas primarily relate to the provision of adequate services to existing residents, facilitating efficient land use development, and supporting the local economies. Specifically, the Energy Element of the General Plan puts forth general policies and policies for transmission lines relevant to the Project:

General Policies

7. The processing of all discretionary energy project proposals shall comply with California Environmental Quality Act (CEQA) Guidelines directing that the environmental effects of a project must be taken into account as part of project consideration.
8. The County should work closely with local, State, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.
9. The County should develop and implement measures which result in long-term compensation for wildlife habitat, which is unavoidably damaged by energy exploration and development activities.
10. The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

Policies for Transmission Lines

1. The County should encourage the development and upgrading of transmission lines and associated facilities (e.g., substations) as needed to serve Kern County's residents and access the County's generating resources, insofar as transmission lines do not create significant environmental or public health and safety hazards.
2. The County shall review all proposed transmission lines and their alignments for conformity with the Land Use, Conservation, and Open Space Element of this General Plan.
3. In reviewing proposals for new transmission lines and/or capacity, the County should assert a preference for upgrade of existing lines and use of existing corridors where feasible.
4. The County should work with other agencies in establishing routes for proposed transmission lines.
5. The County should discourage the siting of above-ground transmission lines in visually sensitive areas.
6. The County should encourage new transmission lines to be sited/configured to avoid or minimize collision and electrocution hazards to raptors.

Kern County Zoning Ordinance

The Kern County Zoning Ordinance regulates land uses throughout the unincorporated areas of the county and outlines allowable development within each zoning designation. Pursuant to Section 19.08.090, transmission lines and supporting towers and poles for electricity that are owned and operated by a public utility company under the jurisdiction of the CPUC are a permitted use throughout the county (Kern County 2022).

San Bernardino County

San Bernardino Countywide Policy Plan

The Land Use Element of the San Bernardino Countywide Policy Plan functions as a guide to the ultimate pattern of development for San Bernardino County. The Infrastructure and Utilities Element of the San Bernardino Countywide Policy Plan includes the following policies that

provide guidance on where, when, and how infrastructure and utilities are improved and expanded (San Bernardino County 2020).

> ***Policy IU-5.4 Electric transmission lines.*** San Bernardino County supports the maintenance of the existing and development of new electric transmission lines along existing rights-of-way and easements to maintain the stability and capacity of the electric distribution system in southern California.
>
> ***Policy IU-5.6 Dig once approach.*** San Bernardino County encourages infrastructure, telecommunication, and utility planning and projects to coordinate so that improvements are made concurrently or in such a manner that minimizes disruption to rights-of-way and reduces costs.

San Bernardino County Development Code

The San Bernardino County Development Code implements the San Bernardino Countywide Plan (San Bernardino County 2024). Transmission lines and control structures are not allowed uses in the county's Residential and Resource Conservation zones, but Section 85.02.50 of the Development Code provides for alternate review procedures for utility facilities permitted by the CPUC.

3.11.3 Applicant Proposed Measures and Best Management Practices

3.11.3.1 Applicant Proposed Measures

No Applicant proposed measures have been specifically identified by SCE to reduce Project impacts related to land use and planning. However, the Applicant proposed measures listed in Section 2.12.1 would reduce impacts and associated land use plan and regulatory conflicts. These are relevant to criterion b listed in Section 3.11.4, below.

3.11.3.2 Best Management Practices

No best management practices are proposed that relate to land use and planning.

3.11.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to land use and planning if it would:

a) Physically divide an established community; or

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.11.5 Direct and Indirect Effects

3.11.5.1 Approach to the Analysis

This impact analysis considers the land use impacts associated with the construction, operation, and maintenance of the Project. The location of the Project site relative to established communities and the nature of the proposed use were evaluated, including for consistency with local land use and planning documents and requirements, to determine whether the Project would result in a significant change to existing land use and planning conditions.

3.11.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would physically divide an established community.

The Project would not physically divide an established community. *(No Impact)*

As discussed in Section 3.11.1, *Environmental Setting*, the Project would be within the City of California City, Kern and San Bernardino counties, and federal lands controlled by the DoD or BLM, and state land controlled by CDFW. The Project would be mostly within private lands in new ROWs or easements, and on existing SCE owned property. Some of the Project would be alongside existing transmission or subtransmission lines or within existing substation boundaries. This analysis examines the Project components in relation to the nearest established communities.

The proposed Cal City Substation improvements would be located within the incorporated City of California City boundaries and specifically within Planning Sub-area 1, which contains the core of the city's development. The Cal City Substation and the proposed construction equipment staging areas 1-15 through 1-17 would be directly northwest of the existing development in Planning Sub-area 1. However, the expanded substation footprint would be north and west of the existing substation, which would be away from the development and would not bisect any existing developed areas or communities.

The new Cal City-Edwards-Holgate 115 kV Subtransmission Line and new Kramer-Cal City 115 kV Subtransmission Lines would extend from the improved Cal City Substation. The Cal City-Edwards-Holgate Subtransmission Line, beginning at its northerly terminus, would travel around existing development in Cal City Planning Sub-area 1. However, it would not intersect any existing development or established communities within the city boundaries, nor would it as it travels south within unincorporated Kern County to the location where it branches into two segments to reach Edwards Substation and Holgate Switchyard.

From the branching point, the portion of the new Cal City-Edwards-Holgate 115 kV Subtransmission Line that would run east to Holgate Switchyard would be within unincorporated Kern County and just north of the unincorporated community of North Edwards. Although the new subtransmission line would be within 1 mile of existing development in North Edwards, it would not intersect the existing community.

The proposed Edwards Substation improvements and the portion of the new Cal City-Edwards-Holgate 115 kV Subtransmission Line that would be within unincorporated Kern County and EAFB would not be located within or near any established communities or existing development. Where the new Cal City-Edwards-Holgate 115 kV Subtransmission Line would cross State Route 58, it would be west of new development and improvements at the 140th Street and State Route 58 interchange.

The new Kramer-Cal City 115 kV Subtransmission Line, from the Cal City Substation, would travel through undeveloped lands in California City and San Bernardino County and would not be within or adjacent to any existing rural communities. The closest it would pass to existing development within the city is when it would travel just to the east of a rest area near the junction of Randsburg Mojave Road and 20 Mule Team Parkway. The subtransmission line would parallel U.S. Highway 395 and cross State Route 58 to reach the existing Kramer Substation on the west side of Kramer Junction. Kramer Junction is an established rural community in unincorporated San Bernardino County. However, construction or operation of the new subtransmission line and substation improvements would not create a new physical barrier to nearby land uses.

With respect to the entire Project, construction would include overhead conductor installation activities, which would result in temporary closures of roads, lanes of roads, and associated sidewalks or pedestrian paths. The road/lane closures would cause potential traffic detours and delays. However, these restrictions would be temporary and, once Project construction is complete, would operate with minimal traffic disruption after initial construction activities. Pursuant to Mitigation Measure 3.17-1, SCE would prepare and implement a Traffic Management Plan to reduce construction-related traffic disruptions (see transportation Impact 3.17-3 in Section 3.17.5.2).

Once constructed, Project operation and maintenance activities would be similar to those currently performed by SCE for the existing facilities and would use access roads established during construction of the Project. As such, Project operation and maintenance would not physically divide an established community or otherwise impede pedestrian or vehicular access to community features or services.

The proposed substation improvements and new subtransmission lines would be consistent with the existing character of the Project site and would not remove existing access from an established community. The Project would not include the construction of components that would physically separate or divide portions of an established community from the remainder of the community. Therefore, no impacts would occur under this criterion.

Criterion b) Whether the Project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Although the Project would be exempt from local land use and zoning regulations and discretionary permitting as discussed in Section 3.11.2.3, *Local Setting*, General Order 131-D, Section XIV.B requires that in locating a project “the public utility shall consult with local

agencies regarding land use matters." The CPUC has consulted with local agencies regarding land use matters (see Appendix B, *Scoping Report*) that would be affected by the Project and has provided the following land use consistency analysis for informational purposes only. The Project's consistency with applicable federal and state plans, policies, or regulations is considered and also discussed.

Federal and State Land Use Plans

Edwards Air Force Base Integrated Natural Resources Management Plan

The Project components within EAFB would be either within the existing Edwards Substation site or on undeveloped land adjacent to existing roads within an existing utility corridor. The Project components on DoD land, and any resulting environmental impacts, are considered throughout this EIR. Applicant proposed measures (as described in Section 2.12.1) would be applied to reduce fugitive dust; protect biological, cultural, and tribal cultural resources; and minimize other environmental effects, resulting in consistency with regulatory requirements, applicable goals, and objectives of the EAFB INRMP. For additional discussion and analysis, see Sections 3.3, *Air Quality*; 3.4, *Biological Resources*; 3.5, *Cultural Resources*; and 3.18, *Tribal Cultural Resources*, respectively.

California Desert Conservation Area, West Mojave Plan, and Desert Renewable Energy Conservation Plan

The Project would be consistent with the CDCA Decision Criteria as it would: minimize the number of separate ROWs where possible by collocating with existing ROWs; provide an alternative transmission corridor for consideration; avoid sensitive resources where possible; conform to local plans; and enhance the regional subtransmission network. The Project would also be consistent with the DRECP since the subtransmission lines that would travel through BLM-owned lands would, in part, traverse through the Renewable Energy Development Focus Areas (DFAs) as identified in the LUPA. The LUPA states that the BLM intends to, "commit staff and prioritize projects that provide needed transmission to the DFAs" and "prioritize transmission associated with DFAs" to promote and facilitate renewable energy development within these areas. Further discussion and analysis regarding the applicability of the CDCA and DRECP LUPA and associated measures is provided in Biological Resources Section 3.4.6.2, under Criterion f. As discussed there, the Project would not conflict with these plans and there would be no impact.

Local Land Use Plans

No local land use plans, policies, or regulations requiring discretionary approval would apply to the Project because, pursuant to General Order 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of such facilities. Consequently, the Project would not conflict with any applicable local land use plan, policy, or regulation of an agency with jurisdiction over the Project sites and alignments.

However, as discussed in Section 3.11.1, *Environmental Setting*, although the Project would be exempt from local land use and zoning regulations and discretionary permitting, General Order 131-D, Section XIV.B requires that in locating a project "the public utility shall consult with local

agencies regarding land use matters." Therefore, the following land use consistency analysis is for informational purposes only.

California City General Plan and Zoning Ordinance

The California City General Plan Land Use Plan designates part of the Cal City Substation site as Community Commercial. The remainder of the substation site and portions of the new subtransmission line alignments within city boundaries are on lands under the *Controlled Development*, *Public Parks & Recreation*, or *Public Schools* use designation.

The Cal City Substation site is zoned Open Space and Residential Agriculture (O/RA) and Community Commercial (C-2) and portions of the new subtransmission lines within city boundaries are on parcels zoned as O/RA. Electric substations, telecommunications equipment, and transmission lines are not permitted or conditionally permitted uses within the C-2 District. Electric distribution substations are conditionally permitted uses within the O/RA District. However, Section 9-2.102 (Scope) of the city's zoning regulations states that Chapter 2 (Zoning) of the City's Code of Ordinances "does not apply to the construction, installation, operation, and maintenance of … public utility distribution and transmission lines, towers and poles and to underground facilities for private gas, water, electricity, or telephone and telegraph services by a public utility under the jurisdiction of the Public Utilities Commission."

Beginning at the Cal City Substation, the new Kramer-Cal City Subtransmission Line, including the optical ground wire (OPGW) for telecommunication-related upgrades, would travel north to parallel 90th Street, then east to parallel Rudnick Boulevard and 20 Mule Team Parkway before entering San Bernardino County. The Cal City-Edwards-Holgate Subtransmission Line, beginning at its northerly terminus, would travel around existing urban development in Cal City Planning Sub-area 1. Its proposed east-west path along Lindberg Road and then its north-south path east of the developed city core would travel across undeveloped lands, improved roads, and unimproved roads, to exit the city boundaries into unincorporated Kern County.

Existing access roads along the new subtransmission line alignments would be used where present, in some cases requiring safety improvements. New access roads would be required along some portions of the new subtransmission line alignments within city boundaries, to provide adequate access to the construction site and for future operation and maintenance activities. New OPGW and fiber optic cable to support telecommunication upgrades would be installed along the length of the subtransmission lines. A construction staging area would be located along the Kramer-Cal City Subtransmission Line alignment, at approximately 20 Mule Team Parkway and Pomona Street.

With respect to applicable land use policies and regulations, the Project is within California City Planning Sub-area 1 but outside the City's central core area. The Project would be consistent with Land Use Issues and Opportunities Policy 16, as the Project would increase the availability of infrastructure, public facilities, and public services to the region. However, per Section 9.2-102 of the city's zoning ordinance, the Project components are exempt from the city's zoning regulations. Therefore, the Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect within the City of California City boundaries. There would be no impact.

Kern County General Plan and Zoning Ordinance

The Kern County General Plan designates the Holgate Switchyard site as Extensive Agriculture and it is zoned Limited Agriculture (A-1). Portions of the proposed Cal City-Edwards-Holgate Subtransmission Line alignment within county boundaries are on lands designated as Resource Management, Heavy Industrial, and Residential at varying allowable housing densities. The portions of the subtransmission line alignment within county boundaries are on parcels zoned as Limited Agriculture (A-1), Heavy Industrial (M-3), and Residential at varying allowable parcel sizes.

The new Cal City-Edwards-Holgate Subtransmission Line would be located just north of the unincorporated North Edwards community, along Suckow Street. Nearly all of the land along the new subtransmission line alignment is vacant, but it passes next to (west of) the Rio Tinto Borax Mine and infrequent, sporadic rural residential properties. Existing access roads would be used for Project construction and operation where possible, with safety improvements made as necessary, but new access roads would be constructed, particularly to the east of the 140th Street and State Route 58 interchange, and to the northeast of North Edwards. Construction staging areas are proposed to be northwest and southwest of North Edwards, but outside of existing developed areas, as well as where the subtransmission line alignment branches off to connect to the Edwards Substation.

With respect to applicable land use policies and regulations, the Project would be consistent with the policies of Section 5.4.7, *Transmission Lines*, in the General Plan's Energy Element, because the Project would upgrade existing substations and the switchyard, and the new subtransmission lines would be collocated in existing utility corridors where feasible. Utility substations, transmission lines, and supporting infrastructure for electricity and telecommunication services owned and operated by a public utility company or other company under the CPUC's jurisdiction are permitted uses within the A-1, M-3, and Residential zoning districts. The Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect within Kern County boundaries. There would be no impact.

San Bernardino General Plan and Zoning Ordinance

The San Bernardino County Policy Plan designates the Kramer Substation site as Commercial on its Land Use Map and the site is zoned Rural Commercial (CR). Portions of the new Kramer-Cal City Subtransmission Line alignment within county boundaries are on lands designated as Commercial, Rural Living, and Resource/Land Management and are zoned as CR, Rural Living (RL) at varying densities, and Resource Conservation (RC).

Land along the proposed Kramer-Cal City Subtransmission Line alignment within San Bernardino County is mostly vacant, but the subtransmission line would pass near a small number of rural industrial operations like the Kramer Solar Plant as it travels west of the U.S. Highway 395 corridor, crossing over local rural roads that intersect U.S. Highway 395. The east–west part of the alignment parallels Cuddeback Road, traveling over vacant land in the unincorporated county before crossing over the California City border. New access roads would be required along the east-west alignment as well as the majority of the north-south alignment adjacent to U.S. Highway 395, and a portion of the alignment west of U.S. Highway 395 within Kramer Junction.

Construction staging areas are proposed within Kramer Junction, to the north and south of State Route 58. Additionally, a small staging area is proposed adjacent to U.S Highway 395, at approximately postmile 57.

The Project would be consistent with applicable policies of the County of San Bernardino General Plan Infrastructure and Utilities Element, as it would result in the development of a new subtransmission line in the county along existing ROWs and easements. The Project would be consistent with Policies IU-5.4 and IU-5.6 in the Countywide Policy Plan, because the Project would improve the electric infrastructure and would place a new transmission line along existing utility rights-of way and easements along U.S. Highway 395. The San Bernardino County Development Code allows utility facilities as a conditionally permitted use within the CR, RL, and RC zoning districts. Utility facilities would be conditionally permitted uses along the proposed subtransmission line alignment. The Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect within San Bernardino County boundaries. There would be no impact.

The subtransmission lines and related Project components would not be subject to local land use policies or regulations pursuant to CPUC General Order 131-D. Even if that were not the case, the Project components would be consistent with the local land use policies and regulations applicable to the Project. Additionally, the Project would be consistent with applicable federal and state plans and policies. Therefore, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. *(No Impact)*

3.11.5.3 Cumulative Effects Analysis

Criteria a, b

As presented in Section 3.11.5, the Project would result in no impacts under all land use and planning-related CEQA criteria. Because the Project would have no impacts on land use and planning, it would not cause or contribute to any cumulative impact.

3.11.6 References

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3.12 Mineral Resources

This section evaluates the impacts of the Project on mineral resources. It presents information about the environmental and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to mineral resources.

3.12.1 Environmental Setting

3.12.1.1 Regional Setting

The Project is in the Mojave Desert, which is characterized by isolated mountain ranges and large areas of desert plains (CGS 2002). The Project is in unincorporated sections of both Kern County and San Bernardino County as well as the city of California City and Edwards Air Force Base (EAFB). Most of the Project (approximately 90 percent) is in undeveloped areas and the rest is on developed land in California City and EAFB. The Project is in the Mojave Geomorphic Province, which has historically been mined for gold, copper, and zinc, along with two plugged oil wells (CGS 2002; USGS 2007).

3.12.1.2 Local Setting

State Classified Mineral Resources

In accordance with the Surface Mining and Reclamation Act of 1975, the California Department of Conservation, Division of Mines and Geology, currently known as the California Geological Survey (CGS), has mapped non-fuel mineral resources of the state to show where economically significant mineral deposits are either present or likely to occur based on the best available scientific data. These resources have been mapped using the California Mineral Land Classification System, which includes the following six Mineral Resource Zones (MRZs):

- **MRZ-1:** An area where adequate information indicates that no significant mineral deposits[1] are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2a:** An area where adequate information indicates that significant measured or indicated mineral reserves are present.
- **MRZ-2b:** An area where geologic information indicates that significant inferred resources or demonstrated subeconomic resources are present.

[1] Deposits that are marketable under present technologic and economic conditions or which can be estimated to exist in the foreseeable future, and that contain more than $5 million worth of aggregate material in 1978-equivalent dollars.

- **MRZ-3a:** An area likely to contain undiscovered mineral deposits similar to known deposits in the same producing district or region (hypothetical resources).
- **MRZ-3b:** An area judged to be a favorable geologic environment for mineral resource occurrences, but where mineral discoveries have not been made in the region (speculative resources).
- **MRZ-4:** An area where geologic information does not rule out either the presence or absence of mineral resources.

The California Geologic Energy Management Division (CalGEM) oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells in California, and tracks all known oil and gas wells. Below are summaries of the MRZs, other mineral resources, and oil well sites that are in Kern County and San Bernardino County.

Kern County

The Kern County General Plan's Conservation Element designates specific MRZs for active extraction or resource conservation sites (Kern County 1982); the CGS also designates specific MRZs (CGS 1999). Active mines are defined as U.S. mineral and metal operations that are monitored by the National Minerals Information Center of the U.S. Geological Survey (USGS), surveyed by the USGS, and considered to be currently active as of 2003 (USGS 2024a, 2024b). The nearest mapped MRZ in Kern County is the Rio Tinto Borax Mine (MRZ-2a and MRZ-2b) just east of the proposed Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment and Holgate Substation. Therefore, the Project alignment would not cross areas designated as MRZs. Mineral resources for Kern County within 1 mile of the Project sites and alignments are listed in **Table 3.12-1**.

Based on a review of published sources and data from the USGS Mineral Resources Data System (MRDS), the Project alignments do not cross any active mineral extraction activity sites in Kern County (CDMR 2016; USGS 2024a, 2024b). The active Rio Tinto Borax Mine is just east of the Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment and Holgate Switchyard. This open pit mine produces primarily borates along with other aggregate materials, including sand and gravel (CDMR 2016).

Based on a review of data from the CalGEM, two plugged oil wells are located within 1 mile of the Project alignments in Kern County, as detailed in **Figure 3.12-1** and listed in **Table 3.12-2**. Both of these oil wells are plugged and are no longer in use (DPG 1922; DNR 1932).

San Bernardino County

The Natural Resources Element of the San Bernardino Countywide Policy Plan delineates specific policies related to mineral resource extraction and preservation within the county. The nearest mapped MRZ is approximately 2 miles southeast of the Kramer Junction and is designated as MRZ-3 for industrial minerals. Therefore, the Project alignment would not cross nor be proximate to areas designated as MRZs in San Bernardino County (San Bernardino County 2020). Mineral resources for San Bernardino County within 1 mile of the Project components are listed in Table 3.12-1.

Based on a review of data from the DOC CalGEM, there are no oil or natural gas wells located within 1 mile of the Project alignment within San Bernardino County (DPG 1922; DNR 1932).

TABLE 3.12-1
MINERAL RESOURCES WITHIN 1 MILE OF THE PROJECT

Mineral Prospect/ Past Mining Activity	Status[1]	Commodity	Distance to Nearest Project Component (Miles)	Nearest Project Component/Alignment
Kern County				
Rio Tinto Borax Mine	Producer	Boron-Borates, sand and gravel	< 0.1	Cal City-Edwards-Holgate line
Russel I[2]	Prospect	Boron-Borates	1.0	Cal City-Edwards-Holgate line
Marshall Bond	Prospect	Boron-Borates	0.8	Cal City-Edwards-Holgate line
Balling I	Prospect	Boron-Borates	0.8	Cal City-Edwards-Holgate line
Leopold	Prospect	Boron-Borates	0.3	Cal City-Edwards-Holgate line
California Department of Transportation #113	Unknown	Sand and Gravel	0.1	Cal City-Edwards-Holgate line
Vanuray Prospect[2]	Past Producer	Uranium	1.0	Cal City-Edwards-Holgate line
Kohler	Prospect	Boron-Borates	0.2	Cal City-Edwards-Holgate line
Unnamed Quarry	Past Producer	Stone, Crushed/Broken	< 0.1	Cal City-Edwards-Holgate line
San Bernardino County				
395 Hill Deposit	Prospect	Boron-Borates	0.3	Kramer-Cal City line
Boron Pit[3]	Producer	Sand and Gravel	0.3	Kramer-Cal City line
Unnamed Prospect[4]	Prospect	Feldspar and Perlite	0.8	Kramer-Cal City line
Unnamed Shaft	Prospect	Gold and Silver	0.7	Kramer-Cal City line
Rho Colemanite Deposit	Prospect	Boron-Borates	0.3	Kramer-Cal City line

NOTES:

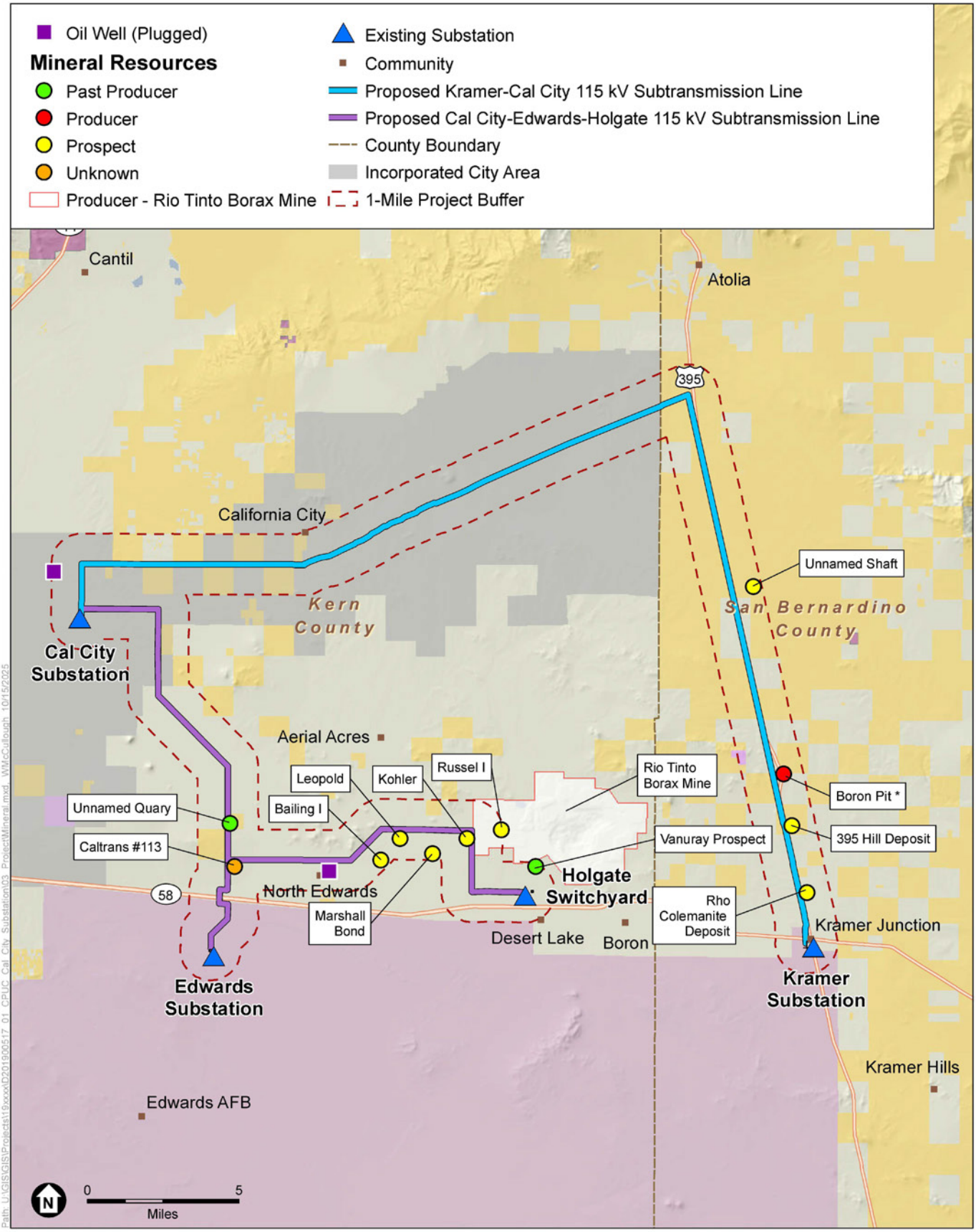
1. Mineral Prospect/Past Mining Activity status is determined by the USGS and reported in its MRDS. This data system describes metallic and non-metallic mineral resource deposits and their status at the time the data were added to the MRDS database. The status terms listed in the table include Prospect: Development beyond the occurrence stage (e.g., surface trenching, adits, shafts, drill holes, geophysics, geochemistry, or geological mapping) where enough data has been gathered to estimate grade and tonnage; Producer: A mine that was in production at the time the data were entered, including intermittent and seasonal producers; Past Producer: A former producer that was closed at the time of data entry with no known plans to re-open; and Unknown: The grade, tonnage, and extent of the mineralization are unknown and there has been no production and little or no activity since discovery (other than routine claim maintenance).
2. The Russel I and Vanuray Prospect are within the Rio Tinto Borax Mine.
3. The Boron Pit record is mislocated and is actually at the Rio Tinto Borax mine.
4. The location of the Unnamed Prospect was inspected on June 22, 2023; there were no indications of any prospecting activity. This location is mislocated and the actual location is unknown.

SOURCES: USGS 2024a, 2024b; CDMR 2016

TABLE 3.12-2
OIL WELLS LOCATED WITHIN 1 MILE OF THE PROJECT

Mineral Prospect/ Past Mining Activity	Status	Distance to Nearest Project Component (Miles)	Nearest Project Component/ Alignment
National Security Oil Company	Plugged	0.8	Kramer-Cal City line
Kendall Development Co., Limited	Plugged	0.3	Cal City-Edwards-Holgate line

SOURCE: CalGEM 2024



SOURCES: ESA, 2023; SCE, 2023; USGS, 2023; FEMA, 2024

* Note: Field inspection did not identify any evidence of the "Boron Mine." This record may be mislocated and likely refers to the Rio Tinto Borax Mine.

Cal City Substation 115 kV Upgrade Project

Figure 3.12-1
Mineral Resources and Oil Wells in the Project Vicinity

3.12.2 Regulatory Setting

3.12.2.1 Federal

Surface Mining Control and Reclamation Act of 1977

The Surface Mining Control and Reclamation Act of 1977 (United States Code Title 30, Sections 1201–1328) established a program for regulating surface coal mining and reclamation activities. It also established mandatory, uniform standards for these activities on state and federal lands, including a requirement that adverse impacts on fish, wildlife, and related environmental values be minimized. Additionally, it created the Abandoned Mine Reclamation Fund for use in reclaiming and restoring land and water resources adversely affected by mining practices.

3.12.2.2 State

California Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act (SMARA) of 1975 (Chapter 9, Division 2, Section 2710 et seq. of the Public Resources Code) requires the State Mining and Geology Board to adopt state policies for reclaiming mined lands and conserving mineral resources. Title 24 of the California Code of Regulations, Division 2, Chapter 8, Subchapter 1 contains these policies.

In accordance with SMARA, the State has established the California Mineral Land Classification System to help identify and protect mineral resources in areas that are subject to urban expansion or other irreversible land uses that would preclude mineral extraction. Protected mineral resources include construction materials, industrial and chemical mineral materials, metallic and rare minerals, and nonfluid mineral fuels.

3.12.2.3 Local

Kern County General Plan

The Kern County General Plan Land Use, Open Space & Conservation Element includes the following policies related to mineral resources:

> ***Policy 14:*** Emphasize conservation and development of identified mineral deposits.
>
> ***Policy 17:*** Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.

San Bernardino County General Plan

The San Bernardino General Plan include the following policies related to mineral resources:

> ***Policy NR-6.1: Mineral resource areas.*** We prioritize the conservation of land area with mineral resources by prohibiting or discouraging development of land that would substantially preclude the future development of mining facilities in areas classified as Mineral Resource Zone (MRZ) 2a, 2b, or 3a.
>
> ***Policy NR-6.2: Mining operations and reclamation.*** We require and monitor mineral extraction activities to ensure that the operation and reclamation of mined lands is consistent with the State Surface Mining and Reclamation Act of 1975 (SMARA).

Policy NR-6.3: Conservation of construction aggregate. We encourage the continued operation of existing mining facilities and streamline the permitting of new mining facilities (consistent with the Policy Plan and other local, state, and federal regulations) to establish aggregate resources that are sufficient to satisfy 50 years of county demand.

3.12.3 Applicant Proposed Measures and Best Management Practices

3.12.3.1 Applicant Proposed Measures

No Applicant proposed measures have been identified by SCE to reduce Project impacts related to mineral resources.

3.12.3.2 Best Management Practices

No best management practices have been identified by SCE to reduce Project impacts related to mineral resources.

3.12.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact on mineral resources if it would:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

3.12.5 Direct and Indirect Effects

3.12.5.1 Approach to the Analysis

To evaluate impacts of the Project on mineral resources, the locations of Project components were compared with maps of known mineral resources of value to the state, region, and local jurisdictions to determine whether Project components would occur on or otherwise limit access to these resources.

3.12.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state.

There are two oil wells within 1 mile of the Project alignments that are both plugged, so oil is not currently being extracted and the former wells would not be affected by any Project activities. *(No Impact)*

The only mineral resources identified as active "producer" within 1 mile of a Project components are the Rio Tinto Borax Mine, which is identified as currently producing boron-borates and sand and gravel and is 1.0 mile from the Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment; and the Boron Pit, which is identified as currently producing sand and gravel and is 0.3 mile from the Kramer-Cal City 115 kV Subtransmission Line alignment. The Boron Pit, however, was not found during a visual inspection of the area conducted by Environmental Science Associates in June 2023. The Project would not result in the loss of these active mineral resource producers. The mineral resources in the vicinity of the Project alignments identified as "prospects" would also not be crossed by the alignments and therefore the Project would not result in the loss of these mineral resource prospects. *(No Impact)*

The Project could also have a significant impact on mineral resources if would cross into an MRZ designated by either Kern County or San Bernardino County. The nearest MRZ in Kern County is 3 miles east of the proposed Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment. Therefore, the Project alignment would not cross into area designated as MRZ by Kern County (Kern County 1982). The nearest mapped MRZ in San Bernardino County is approximately 2 miles southeast of Kramer Junction. Therefore, the Project would not cross into areas designated as MRZs in San Bernardino County (San Bernardino County 2020). Due to the Project not entering designated MRZs, there would be no impact on any MRZ. *(No Impact)*

Criterion b) Whether the Project would 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.

The Project would have a significant impact if the Project were to result in the loss of availability of locally important mineral resource recovery sites delineated by local general plans. As Discussed in Impact 3.12-1, no segment of the Project would traverse areas mapped as MRZ within Kern or San Bernardino counties. Therefore, the Project would not have an impact on any mineral resource recovery sites because the sites delineated by local general plans are too far away from the Project to be affected. *(No Impact)*

3.12.5.3 Cumulative Effects Analysis

Criteria a) and b)

As stated above in Section 3.12.5.2, *Direct and Indirect Impacts of the Project*, there would be no Project impacts on mineral resources. Therefore, there would be no cumulative impact to mineral resources as a result of the Project. *(No Impact)*

3.12.6 References

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3.13 Noise and Vibration

This section evaluates the impacts of the Project on noise and vibration. It presents information about the environmental and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The information and analysis presented are based in part on the noise and vibration analysis contained in the March 2023 Proponent's Environmental Assessment (PEA) prepared by Rincon Consultants, Inc. as supplemented by Environmental Science Associates (ESA 2024). See **Appendix J**, *Noise and Vibration*.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to noise and vibration.

3.13.1 Environmental Setting

3.13.1.1 Noise Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power).

When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum. The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. Consequently, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and high frequencies instead focusing on the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). All sound pressure levels reported in this analysis are A-weighted.

Noise Exposure and Ambient Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels

rarely persist consistently over a long period of time. In fact, noise varies continuously with time with respect to the contributing sound sources of the noise environment. Noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. Background noise levels change throughout a typical day, but do so gradually, corresponding with the addition and subtraction of distant noise sources and atmospheric conditions. The addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) makes noise constantly variable throughout a day.

These successive additions of sound to the noise environment vary the noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a noise environment and evaluate noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. Different noise descriptors discussed in this analysis are summarized below:

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the sound level that would contain the same acoustic energy as the varying sound level, during a period of time (i.e., the average noise exposure level for the given time period).

L_{dn}: The energy average of the A-weighted sound levels occurs during a 24-hour period, and accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10 p.m. and 7 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

CNEL: The Community Noise Equivalent Level (CNEL) is a 24-hour L_{eq} that adds a 5 dBA penalty to noise occurring during evening hours from 7 p.m. to 10 p.m., and a 10 dBA penalty to sounds occurring between the hours of 10 p.m. to 7 a.m. to account for the increased sensitivity to noise events that occur during the quiet late evening and nighttime periods.

L_{max}: The instantaneous maximum noise level measured during a period of interest.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers at industrial plants often experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way the new noise compares to the existing noise levels that one has adapted, which is referred to as the "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient

noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response.
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected.
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. A ruler is a *linear* scale; it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A *logarithmic* scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1; 10; 100; 1,000; 10,000; etc., doubling the variable plotted on the x-axis. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, when a 70 dBA ambient noise level is combined with a 60 dBA noise source, the resulting noise level equals 70.4 dBA.

Nighttime noise has a higher potential to affect sleep. Noise can make it difficult to fall asleep, can create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages, and can cause awakening.

Scientists have attempted to determine if high noise levels can adversely affect human health apart from auditory damage. These research efforts have covered a broad range of potential impacts from cardiovascular response from fetal weight to mortality. While a relationship between noise and health effects seems plausible, it has yet to be convincingly demonstrated that is, shown in a manner that can be repeated by other researchers while yielding similar results. In a review of 30 studies conducted worldwide between 1993 and 1998, a team of international researchers concluded that, while some findings suggest that noise can affect health, improved research concepts and methods are needed to verify or discredit such a relationship. The team of international researchers called for more study of the numerous environmental and behavioral factors that can confound, mediate, or moderate survey findings. Until science refines the research process, a direct link between a single source noise exposure and non-auditory health effects remains to be demonstrated (Lercher et al. 1998).

Noise Attenuation

Sound level naturally decreases with more distance from the source. This basic attenuation rate is referred to as the geometric spreading loss. The basic rate of geometric spreading loss depends on

whether a given noise source can be characterized as a point source or a line source. Point sources of noise, including stationary mobile sources such as idling vehicles or on-site construction equipment, attenuate (lessen) at a rate of 6.0 dBA per doubling of distance from the source. In many cases, noise attenuation from a point source increases to 7.5 dBA for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as excess ground attenuation. The basic geometric spreading loss rate is used where the ground surface between a noise source and a receiver is reflective, such as parking lots or a smooth body of water. The excess ground attenuation rate (7.5 dBA per doubling of distance) is used where the ground surface is absorptive, such as soft dirt, grass, or scattered bushes and trees. Widely distributed noises such as a street with moving vehicles (a "line" source) would typically attenuate at a lower rate of approximately 3.0 dBA for each doubling of distance between the source and the receiver. If the ground surface between source and receiver is absorptive rather than reflective, the nominal rate increases to 4.5 dBA for each doubling of distance. Atmospheric effects, such as wind and temperature gradients, can also influence noise attenuation rates from both line and point sources of noise. However, unlike ground attenuation, atmospheric effects are constantly changing and difficult to predict.

Trees and vegetation, buildings, and barriers reduce the noise level that would otherwise occur at a given receptor distance. However, for a vegetative strip to have a noticeable effect on noise levels, it must be dense and wide. For example, a stand of trees must be at least 100 feet wide and dense enough to completely obstruct a visual path to the roadway to attenuate traffic noise by 5 dBA (Caltrans 2013). A row of structures can shield more distant receivers depending upon the size and spacing of the intervening structures and site geometry. Similar to the vegetative strips discussed above, noise barriers, which include natural topography and soundwalls, reduce noise by blocking the line of sight between the source and receiver. Generally, a noise barrier that breaks the line of sight between a source and receiver will provide at least a 5-dBA reduction in noise.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is typically expressed in units of inches per second (in/sec). The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration (FTA 2018). Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

Some common sources of ground-borne vibration are trains, heavy trucks traveling on rough roads, and construction activities such as blasting, pile driving, and operation of heavy earth-moving equipment. The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. In

residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV).

3.13.1.2 Existing Ambient Noise Environment

The Project would be constructed in mostly rural areas, open space, adjacent to industrial areas (such as near the Borax plant), and adjacent to several residential areas. Existing noise sources in the area include household power equipment, air conditioners, vehicles on roadways, trains on a railroad, aircraft overflights, and the operation of industrial equipment. In order to evaluate existing ambient noise in the Project area, Southern California Edison (SCE) had a noise measurement collected near the Cal City Substation and along the Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment as shown in **Figure 3.13-1**. These locations were selected because they are considered representative of other sensitive receptor locations throughout the vicinity of the Project and alternatives. Existing ambient noise levels were measured in a 24-hour series of 4-minute equivalent sound level measurements (Leq, A-weighted).

ESA reviewed SCE's raw noise monitoring data and found the data to be inconsistent with no clear distinction between average daytime and nighttime levels. This may have been the result of sporadic and undefined elevated noise sources throughout the measurement periods in the vicinity of the measurement locations such as military aircraft overflights, and/or local residential mechanical equipment or vehicles. For a more meaningful summary of the data to inform the impact analysis, ESA used the data to estimate the daily 1-hour L_{eq} minimum, the daytime (i.e., 7 a.m. to 10 p.m.) L_{eq}, and the L_{dn} for each measurement location. The summary results of SCE's noise monitoring data are shown below in **Table 3.13-1**. Primary known noise sources in the vicinity of the noise monitoring locations are vehicle traffic along Claymine Road, Mendiburu Road, and Hacienda Boulevard. Additionally, noise sources may include railroad activity adjacent to State Route 58 (SR 58), aircraft noise from California City Municipal Airport and Edwards Air Force Base, and local residential activities.

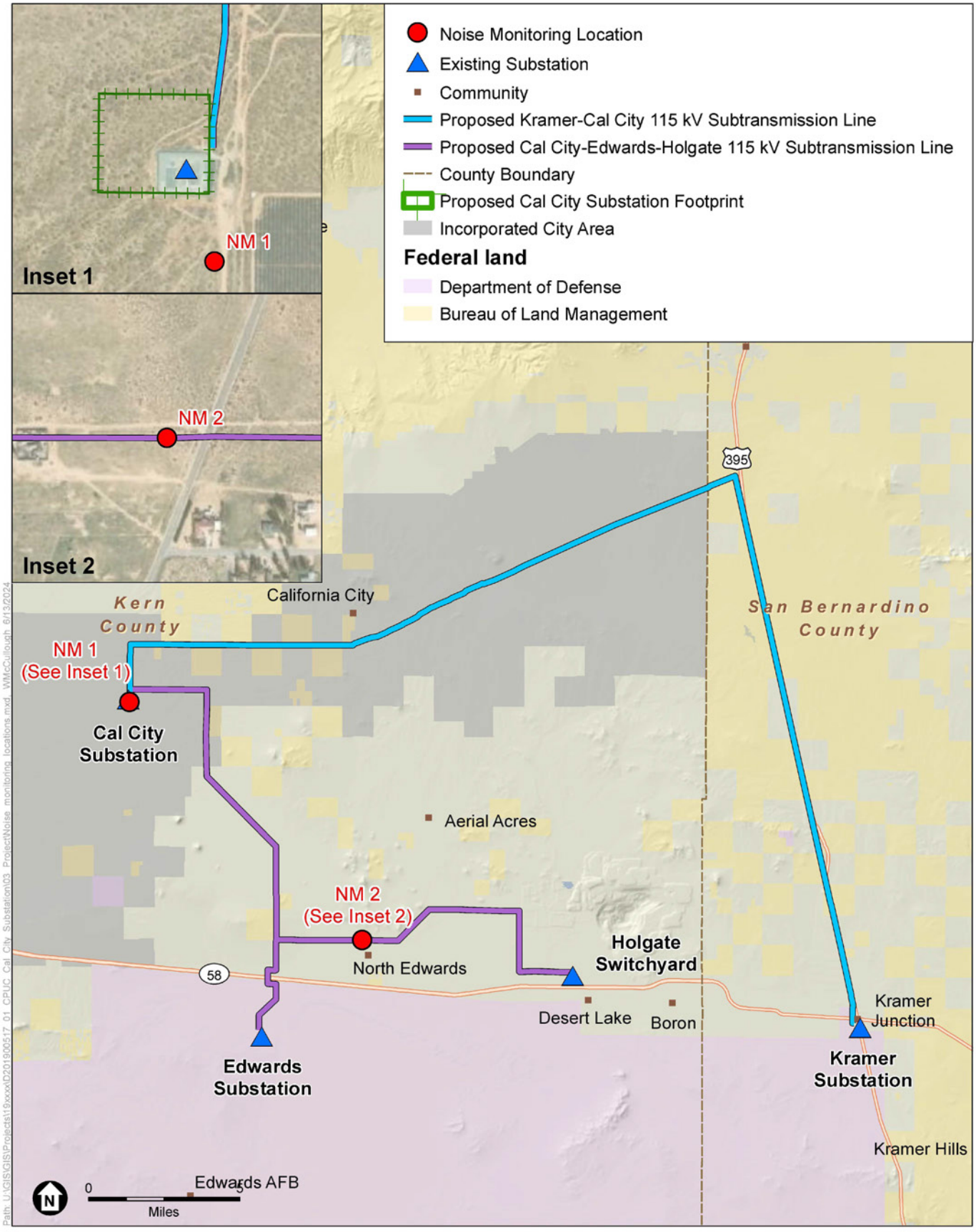
TABLE 3.13-1
NOISE MONITORING RESULTS

Noise Measurement	Location	Date	1-hr L_{eq} Minimum (dBA)	L_{eq} Daytime (dBA)	L_{dn} (dBA)
NM 1	Approximately 300 feet south of the Cal City Substation, along the substation's existing access road and approximately 440 feet north of the intersection of Mendiburu Road and Hacienda Boulevard.	March 1 to 2, 2022	37	60	67
NM 2	Approximately 165 feet west of the intersection of Suckow Road and Claymine Road	March 3 to 4, 2022	46	59	67

NOTES: NM = noise measurement.

1-hr L_{eq} minimum is the lowest 1-hour average time-weighted sound level measured, Leq daytime is the average sound level measured during daytime hours of 7 a.m. to 10 p.m. Ldn is the energy average of the A-weighted sound levels occurring during a 24-hour period, and accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10 p.m. and 7 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

SOURCE: ESA 2024 based on SCE 2023 (see Appendix J).



SOURCES: SCE 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.13-1
Noise Monitoring Locations

3.13.1.3 Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate are also sensitive to noise. Commercial and industrial uses are considered the least noise sensitive. Below are descriptions of the sensitive receptors near the Project sites and alignments. The summaries of sensitive receptors provided below are not intended to list every specific individual sensitive receptor but are intended to provide an overview of the types of uses in the vicinity of the Project and the alternatives sites and alignments.

Sensitive receptors near the Project sites and alignments include residences within the vicinity of the Kramer-Cal City 115 kV Subtransmission Line and Cal City-Edwards-Holgate 115 kV Subtransmission Line alignments. The locations of sensitive receptors within 1,000 feet of the Project are shown in **Figure 3.13-2**. The nearest residence to the proposed Kramer-Cal City 115 kV Subtransmission Line alignment is east of the intersection of Twenty Mule Team Parkway and Rudnick Road and is approximately 140 feet southeast from the nearest construction area proposed for the Project, and the nearest residence to Staging Area 1-10 is approximately 380 feet to the west from the center of the staging area. The nearest sensitive receptor to the Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment is a residence at Claymine Road and Hillcrest Avenue approximately 330 feet south, and the Church of Jesus Christ of Latter-day Saints approximately 330 feet southeast from Staging Area 1-3. The nearest residence to the proposed Cal City Substation upgraded footprint is approximately 850 feet to the south-southeast. The nearest residence to the proposed Staging Area 1-17 near the proposed Cal City Substation upgrade is approximately 280 feet to the southeast. There are no receptors within 1,000 feet of the other existing substations/switchyard (Edwards Substation, Holgate Switchyard, and Kramer Substation).

3.13.1.4 Existing Airport and Airstrips

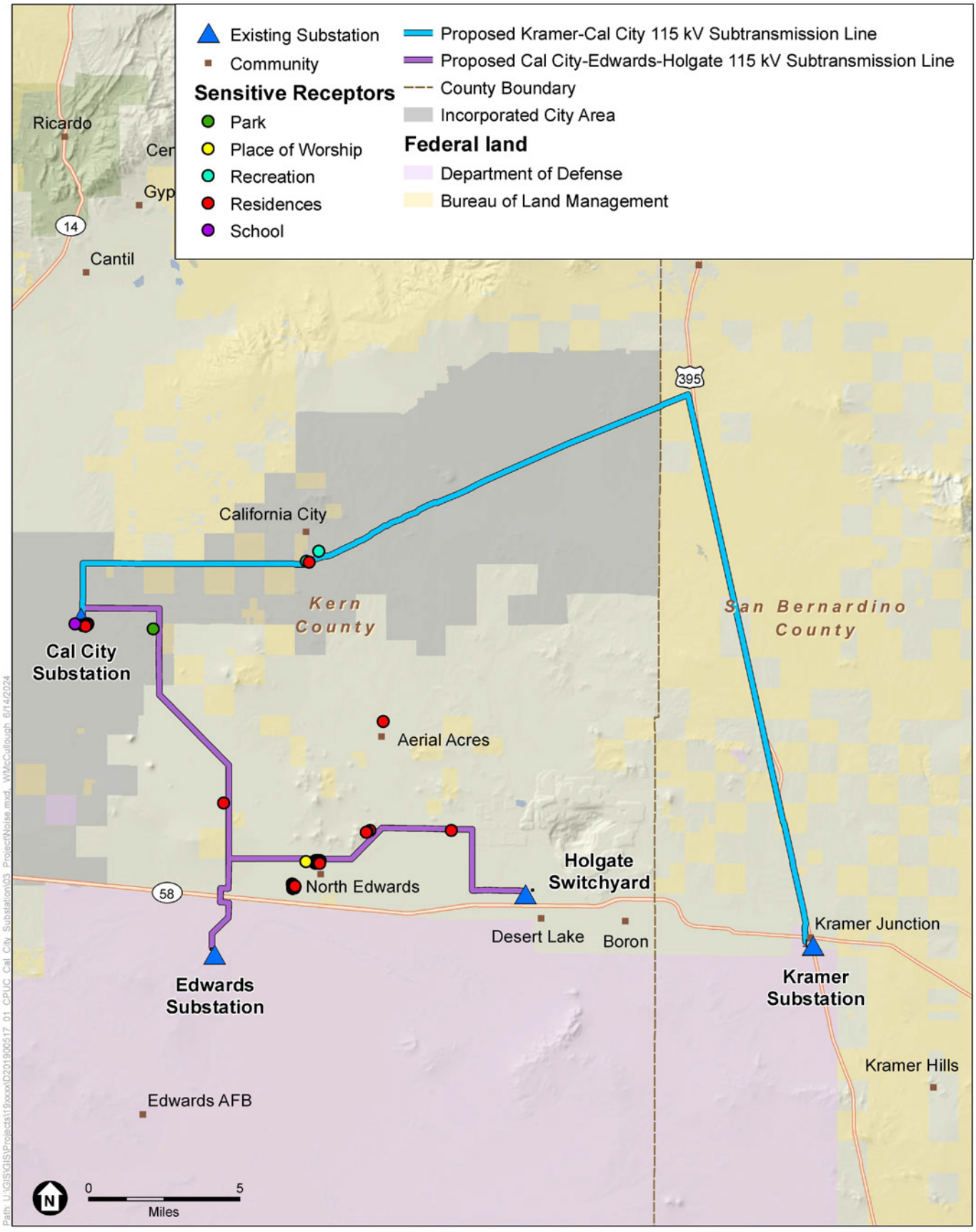
The closest airports to the Project are the California City Municipal Airport, approximately 2 miles west of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment, the Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment, Cal City Substation improvements; and the Mojave Air & Space Port, approximately 1 mile east of Edwards Substation.

3.13.2 Regulatory Setting

3.13.2.1 Federal

U.S. Environmental Protection Agency

Although no federal noise regulations exist, the U.S. Environmental Protection Agency (USEPA) has published noise guidelines to protect public health and welfare (USEPA 1974). The USEPA guideline recommends an LDN of 55 dBA to protect the public from the effect of broadband environmental noise outdoors in residential areas and farms, and other outdoor areas where people spend widely varying amounts of time, and other places in which quiet is a basis for use (USEPA 1974).



SOURCES:SCE 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.13-2
Noise-Sensitive Receptors

Federal Transit Administration Criteria

The Federal Transit Administration (FTA) has adopted vibration criteria that are used to evaluate potential building damage impacts from construction activities. **Table 3.13-2** shows FTA's vibration damage criteria.

TABLE 3.13-2
CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	PPV (in/sec)
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

NOTES: in/sec = inches per second; PPV = peak particle velocity.
SOURCE: FTA 2018.

In addition, FTA has adopted standards related to human annoyance for groundborne vibration impacts for the following three land use categories: Vibration Category 1, High Sensitivity; Vibration Category 2, Residential; and Vibration Category 3, Institutional. FTA defines these categories as follows:

- **Category 1:** Buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes.
- **Category 2:** All residential land uses and any buildings where people sleep, such as hotels and hospitals.
- **Category 3:** Institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment but still have the potential for activity interference.

Under conditions where there is an infrequent number of events per day, FTA has established standards of 65 VdB for Category 1 buildings, 80 VdB for Category 2 buildings, and 83 VdB for Category 3 buildings.[1] Under conditions where there is an occasional number of events per day, FTA has established standards of 65 VdB for Category 1 buildings, 75 VdB for Category 2 buildings, and 78 VdB for Category 3 buildings.[2] No standards have been adopted or recommended for commercial and office uses.

3.13.2.2 State

Government Code Section 65302 encourages counties and cities to implement a noise element as part of the general plan. In addition, the California Governor's Office of Planning and Research

[1] FTA defines "infrequent events" as fewer than 30 vibration events of the same kind per day.

[2] FTA defines "occasional events" as between 30 and 70 vibration events of the same source per day.

has developed guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

The California Occupational Safety and Health Administration (Cal/OSHA) has published Occupational Noise Exposure Regulations (9 CCR Sections 5095-5099) that set employee noise exposure limits.

3.13.2.3 Local

CPUC General Order 131-D explains that local land use regulations would not apply to the Project or its alternatives. As such, the following local policies and ordinances pertaining to noise that would otherwise be relevant to the Project and alternatives are described below for informational purposes only.

Kern County

Kern County General Plan

Kern County General Plan includes the following policies and implementation measure related to noise and vibration (Kern County 2009):

> ***Policy 1:*** Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.
>
> ***Policy 7:*** Employ the best available methods of noise control.
>
> ***Implementation Measure F:*** Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB Ldn and interior noise levels in excess of 45 dB Ldn.

Kern County Municipal Code

Section 8.36.020 of the Kern County Municipal Code prohibits construction activities between 9 p.m. and 6 a.m. on weekdays and 9 p.m. and 8 a.m. on weekends; however, the development services agency director or their designated representative may exempt some construction work for a limited time. There are no specific noise level criteria for construction activities or exterior operational noise levels (Kern County 2007).

Kern County Airport Land Use Compatibility Plan

The Kern County Airport Land Use Compatibility Plan was established to provide for appropriate development of areas surrounding public airports in Kern County. The Kern County Planning and Community Development Department's comprehensive land use plans are intended to minimize the public's exposure to excessive noise and safety hazards and to ensure that approaches to airports are kept clear of structures that could pose an aviation safety hazard (Kern County 2012).

San Bernardino County

San Bernardino Countywide Policy Plan

The San Bernardino Countywide Policy Plan includes the following policies related to noise (San Bernardino County 2020a):

Policy HZ-2.8: Proximity to noise generating uses. We limit or restrict new noise sensitive land uses in proximity to existing conforming noise generating uses and planned industrial areas.

Policy HZ-2.9: Control sound at the source. We prioritize noise mitigation measures that control sound at the source before buffers, soundwalls, and other perimeter measures.

San Bernardino County Municipal Code

Section 83.01.080(g) of the San Bernardino County Municipal Code limits construction activities to between 7 a.m. and 7 p.m. Monday through Saturday and does not allow construction on Sundays or federal holidays (San Bernardino County 2020b). Noise standards for stationary noise are limited to the levels provided in Section 83.01.080(c) and are listed below in **Table 3.13-3**.

TABLE 3.13-3
SAN BERNARDINO COUNTY NOISE STANDARDS FOR STATIONARY NOISE SOURCES

Noise Zone	Time	Allowable Noise Level (dBA)
Residential	7 a.m.–10 p.m.	55
	10 p.m.–7 a.m.	45
Professional Services	7 a.m.–10 p.m.	55
	10 p.m.–7 a.m.	55
Other Commercial	7 a.m.–10 p.m.	60
	10 p.m.–7 a.m.	60
Industrial	7 a.m.–10 p.m.	70
	10 p.m.–7 a.m.	70

SOURCE: San Bernardino County 2020b

Noise standards for noise from mobile sources are limited to the levels provided in Section 83.01.080(d) and are listed below in **Table 3.13-4**.

TABLE 3.13-4
SAN BERNARDINO COUNTY STANDARDS FOR ADJACENT MOBILE NOISE SOURCES

Land Uses		L_{dn} (or CNEL) dBA	
Category	**Uses**	**Interior[1]**	**Exterior[2]**
Residential	Single-Family, Duplex Units	45	65
	Mobile Home	45	65
Commercial	Hotel, Motel, and Transient Lodging	45	65
	Commercial Retail, Bank, and Restaurants	50	N/A
	Office Building, Research and Development, and Offices	45	65
	Amphitheater, Hall, Auditorium, and Theater	45	65
Industrial	Hospital, School, Church, and Library	45	65
Open Space	Park	N/A	65

NOTES: "N/A" = Not applicable. An exterior noise level of up to 65 dBA L_{dn} (or CNEL) is allowed, provided that exterior noise levels are substantially mitigated through a reasonable application of the best available noise-reduction technology, and interior noise exposure does not exceed 45 dBA L_{dn} (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level would necessitate the use of air conditioning or mechanical ventilation.

1. The indoor environment excludes bathrooms, kitchens, toilets, closets, and corridors.
2. The outdoor environment is limited to hospital/office building patios, hotel and motel recreation areas, mobile home parks, multi-family private patios or balconies, park picnic areas, private yards of single-family dwellings, and school playgrounds.

SOURCE: San Bernardino County 2020b

City of California City

City of California City General Plan

The City of California City General Plan includes the following policy related to noise (City of California City 2009):

> ***Policy N-9:*** The City shall require noise attenuation measures (such as setbacks, clustering, berming, and sound walls) as conditions of project approval prior to or as part of construction in areas subject to excessive noise. Examples of cases that may require such attenuation measures shall include but not be limited to the following:
>
> (a) Commercial and residential development where noise levels exceed adopted standards in the Noise Element.
>
> (b) Residential and other noise-sensitive land uses with direct exposure to roadway generated noise and/or railroad noise.
>
> (c) Between residential and other noise-sensitive land uses and commercial or industrial land uses.
>
> ***Policy N-14:*** The City shall restrict the hours of activity per Title 5, Article 4, *Noise and Vibration*, Section 5-1.407, of the California City Municipal Code:
>
> (a) Noise sources associated with or vibration created by construction, repair or remodeling of real property or during authorized seismic surveys under the following conditions:
>
> (1) The activities occur between the hours of 6:00 a.m. and 8:00 p.m. between May 15 and September 15 of each year or between the hours of 7:00 a.m. and 8:00 p.m. during the remainder of the year.
>
> (2) The activities do not take place on Sundays or federal holidays.

City of California City Noise Ordinance

Noise standards for operational exterior noise are provided in Section 5-1.405 of the City of California City Noise Ordinance as listed below in **Table 3.13-5**.

TABLE 3.13-5
CITY OF CALIFORNIA CITY EXTERIOR NOISE STANDARDS

Land Use Type	Time Interval	Allowable Exterior Noise Level (dBA)
Single-, double-, or multiple-family residential (i.e., R-1, R-2, R-3, and R-4) more than 600 feet from a major roadway	10 p.m.–7 a.m.	45
	7 a.m.–10 p.m.	50
Single-, double-, or multiple-family residential (i.e., R-1, R-2, R-3, and R-4) within 600 feet of a major roadway	10 p.m.–7 a.m.	50
	7 a.m.–10 p.m.	55
Commercial (i.e., C-1, C-2, etc.)	10 p.m.–7 a.m.	60
	7 a.m.–10 p.m.	65
Industrial or manufacturing (i.e., M-1, M-2, etc., or 1-1, 1-2, etc.)	Any time	70

SOURCE: City of California City 2022.

Section 5-1.407 of the City of California City Noise Ordinance exempts noise sources associated with or vibration created by construction, repair, or remodeling of real property or during authorized seismic surveys under the following conditions:

- The activities occur between the hours of 6 a.m. and 8 p.m. between May 15 and September 15 of each year or between the hours of 7 a.m. and 8 p.m. during the remainder of the year.
- The activities do not take place on Sundays or federal holidays.
- The noise level created by such activities does not exceed 60 dBA plus the limits specific herein as measured on residential property.
- A vibration does not endanger the public health, welfare, and safety.

Section 5-1.410 of the City of California City Noise Ordinance limits vibration to 0.05 in/sec RMS vertical velocity at any point on adjoining property. However, construction-related vibration is exempt from this standard.

3.13.3 Applicant Proposed Measures and Best Management Practices

3.13.3.1 Applicant Proposed Measures

SCE has identified the following Applicant proposed measure (APM) to minimize impacts of noise from the Project. The impact analysis assumes that the APM would be implemented (i.e., part of the Project) to reduce impacts related to noise and vibration as discussed below.

- **APM NOI-1:** SCE shall employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors during construction:
  - Construction activities shall be confined to daytime, weekday and weekend hours established by Kern County, San Bernardino County, and the City of California City. In the event construction is required beyond those hours, SCE will notify the appropriate local agency or agencies regarding the description of the work, location, and anticipated construction hours.
  - Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
  - Stationary noise sources (e.g., generators, pumps) and staging areas shall be shielded by an enclosure, temporary sound walls, acoustic blankets, or other barrier where noise levels are above 80 dBA at sensitive receptor locations. Heights and specifications of noise barriers will be designed to reduce construction noise to below 80 dBA (FTA 2006).
  - Construction traffic and helicopter flight shall be routed away from residences and schools.
  - Unnecessary construction vehicle use and idling time shall be minimized. If a vehicle is not required for use immediately or continuously for construction activities, its engine shall be shut off.

3.13.3.2 Best Management Practices

No best management practices have been identified by SCE to reduce Project impacts related to noise and/or vibration.

3.13.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, the Project would result in significant noise impact if it would:

a) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b) Generate excessive groundborne vibration or groundborne noise levels; or

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

3.13.5 Direct and Indirect Effects

3.13.5.1 Approach to the Analysis

Construction Noise Impacts

Equipment and vehicle noise during construction of the Project is the primary concern in evaluating short-term noise impacts. Construction noise contour levels were calculated for the Project by SCE (SCE 2023; see PEA Table 5.13-7, *Construction Activity Noise Generation*). To supplement SCE's analysis, Environmental Science Associates (ESA) used SCE's identified distances of exposure to calculate the associated L_{eq} noise levels at the nearest residences, including setback from the center of the Project site (ESA 2024; see Appendix J). Noise from equipment and vehicles associated with the construction activities of the Project were estimated using the Federal Highway Administration's Roadway Noise Construction Model (RCNM). Because RCNM assumes distance attenuation rates associated with hard sites, post-processing calculations were used to adjust the attenuated noise levels to account for the soft site conditions that exist between the closest work areas and sensitive receptors. Soft sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees. An excess ground attenuation value of 1.5 dBA per doubling of distance is normally assumed (Caltrans 2013). When added to the geometric spreading, this results in an overall drop-off rate of 7.5 dBA per doubling of distance for a point source. Both RCNM output files and post processing calculations are provided in Appendix J.

Short-term construction noise levels have been evaluated relative to ambient noise levels and local standards of the applicable jurisdictions (i.e., Kern County, San Bernardino County, City of California City). For construction activities within California City, pursuant to Section 5-1.407 of the City of California City Noise Ordinance, if noise levels would exceed 60.4 dBA, which is the logarithmic addition of 60 dBA plus the applicable exterior noise limit of 50 dBA, the Project would not be exempt from the noise standards listed in Table 3.13-5 and would result in a significant impact under CEQA Criterion (a). In addition, where the applicable local jurisdictions (i.e., in unincorporated Kern County and San Bernardino County) do not have noise level standards for construction activities, the Project construction noise impacts are assessed relative to the recommendations of the FTA. For a general assessment, the FTA recommends estimation of the combined 1-hour L_{eq} for the two noisiest pieces of construction equipment for each phase of construction for comparison to the daytime and nighttime levels of 90 dBA and 80 dBA,

respectively. The FTA recommends that the distances used to estimate construction noise levels at the closest sensitive receptors should be based on middle of the construction site. These noise levels are where adverse community reaction could occur at residential land uses (FTA 2018). Additional details regarding methodology are included in the individual impact analyses below.

Operation and Maintenance Impacts

During operation, noise from corona discharge along the subtransmission lines, substation noise, and general operation and maintenance activity noise would be the primary concerns associated with long-term operational noise. In its PEA, SCE provided a noise estimate for operations of the proposed Cal City Substation improvements associated with the eight new transformers and ground banks using National Electrical Manufacturer Association (NEMA) noise ratings (SCE 2023); however, ESA could not recreate the provided estimated noise level (i.e., 77 dBA at 1 foot). Therefore, ESA supplemented SCE's analysis by converting the provided sound power levels to sound pressure levels and combining the eight source levels, which results in a sound pressure level of approximately 85 dBA at 3 feet. Therefore, SCE's estimate appears to be underestimated. The nearest residences would be located approximately 850 feet to the south-southeast of the existing substation footprint. To estimate the noise level at 850 feet, the basic rate of geometric spreading loss for a point source was used to a distance of 50 feet and the excess ground attenuation rate was used from approximately 50 feet out to the receptor location distance of 850 feet (ESA 2024). The potential for long-term operational noise to substantially increase ambient noise levels is evaluated by comparing Project noise levels with measured ambient noise levels and thresholds established by the local jurisdictions. Additional details regarding methodology are included in the individual impact analyses below.

Vibration Impacts

The FTA thresholds for potential architectural damage and human annoyance to groundborne vibrations are also used in this analysis. The architectural damage threshold for the most sensitive buildings is 0.12 in/sec PPV for buildings extremely susceptible to vibration damage and the human annoyance threshold applicable to all residential land uses and any buildings where people sleep, such as hotels and hospitals, is 75 VdB (FTA 2018).

3.13.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Construction Noise Time-of-Day Restrictions (*No Impact*)

No local land use plans, policies, or regulations requiring discretionary approval would apply to the Project because the CPUC has sole and exclusive jurisdiction over the siting and design of such facilities pursuant to General Order 131-D. However, the local regulatory standards described above have exemptions for the type of work proposed for the Project. Kern County, San Bernardino County, and City of California City identify allowable hours during the day for noise related to

construction activities. These hours are summarized in **Table 3.13-6**. Construction would be limited to the allowable hours within these jurisdictions.

TABLE 3.13-6
ALLOWABLE HOURS FOR CONSTRUCTION NOISE

Jurisdiction	Weekdays	Saturdays	Sundays	Federal Holidays
Kern County	6 a.m.–9 p.m.	8 a.m.–9 p.m.	8 a.m.–9 p.m.	Not specified
San Bernardino County	7 a.m.–7 p.m.	7 a.m.–7 p.m.	Construction not allowed	Construction not allowed
City of California City[1]	6 a.m.–8 p.m.	6 a.m.–8 p.m.	Construction not allowed	Construction not allowed

NOTES:
1. 6 a.m. and 8 p.m. between May 15 and September 15 or between 7 a.m. and 8 p.m. during the remainder of the year.
SOURCES: Kern County 2007; San Bernardino County 2020a; City of California City 2022.

As discussed in Section 2.7.17.3, *Schedule*, construction activities would adhere to the allowable construction work hours specified in Table 3.13-6, or as allowed by following the recommended provisions of a variance if necessary, if SCE determines that work would be necessary outside the allowed periods (e.g., to deliver an oversized load or to cause or respond to planned or unplanned outages during nighttime hours). All construction activity for the Project would be consistent with the time-of-day restrictions established by local ordinances, as discussed above. Although nighttime construction is not anticipated, it may occasionally be needed to meet Project milestones. If work outside the stablished hours is necessary, such work would be compliant with APM NOI-1 and would be scheduled consistent with the appropriate local agency or agencies consistent with APM NOI-1.

Therefore, there would be no conflict with applicable local noise policies or ordinances related to time-of-day restrictions for construction. No impact would occur. For discussion of noise impacts that would be associated with nighttime construction, if required, refer to Impacts 3.13-1 and 3.13-2.

Operation and Maintenance Activity Noise (*No Impact*)

Operation and maintenance (O&M) activities would generally be similar to existing O&M activities conducted by SCE for existing substations and associated subtransmission lines and infrastructure. Maintenance activities would include periodic inspections within the substations, switchyard, and throughout the subtransmission line rights-of-way. These activities would require use of a light duty truck and other equipment that would temporarily increase noise levels in the immediate vicinity of the Project. SCE would inspect the subtransmission and distribution overhead facilities in a manner consistent with CPUC General Order 165, which would be a minimum of once per year via ground. As a practical matter, given the low level of vehicle trips that would be required for inspecting the new subtransmission lines, ambient roadside noise levels would not increase due to operation of the Project. Generally, roadway traffic volumes must double to result in a (3 dBA) increase in roadside noise levels, which would not occur from occasional O&M activities, and therefore, would not result in a noticeable increase in roadside noise levels. There would be no substantial long-term maintenance-related noise level increases. No impact would occur.

For short-term noise impacts associated with O&M activities involving helicopters, refer to Impact 3.13-1.

Operational Subtransmission Line Corona Noise (*No Impact*)

The term corona is used to describe the breakdown of air into charged particles caused by the electrical field at the surface of a conductor. Audible noise levels generated by corona discharge vary depending on weather conditions as well as on the voltage of the line. Wet weather conditions often increase corona discharge due to accumulation of raindrops, fog, frost, or condensation on the conductor surface, which causes surface irregularities that promote corona discharge.

According to the Electric Power Research Institute (EPRI), noise levels 25 feet directly below 138 kV transmission lines under wet conditions tend to be approximately 37 dBA (EPRI 1978). Noise levels under the Project subtransmission line conductors would be expected to be lower as the voltage would be 115 kV rather than 138 kV; nevertheless, for the purpose of this analysis the noise level of 37 dBA is used to represent worst case corona noise levels that would occur directly below the Project subtransmission line conductors during wet weather conditions. At the closest residences that would be approximately 140 feet from the proposed the Kramer-Cal City and Cal City-Edwards-Holgate subtransmission line alignments, the maximum noise level would be approximately 32 dBA Leq, which over a period of 24 hours equals an L_{dn} of approximately 39dBA. These noise levels would be below the most stringent standards for exterior/stationary noise established in the local general plan or noise ordinance (i.e., exterior nighttime limit of 45 dBA Leq), and below the USEPA recommended 55 dBA L_{dn} to protect the public from the effect of environmental noise outdoors in residential areas. In addition, these noise levels would be below the existing 1-hour L_{eq} minimum and L_{dn} ambient noise levels of 37 dBA and 67 dBA, respectively, in the Project area (see Table 3.13-1). There would be no substantial long-term corona noise-related noise level increases. No impact would occur.

Operational Substation Upgrades (*No Impact*)

Transformer banks account for the majority of noise generated by substation infrastructure operations. Transformer noise is caused, in part, by a phenomenon called magnetostriction, which causes the transformer to be magnetically excited and vibrate, producing a “humming” type sound. The Cal City Substation upgrade site is in the City of California City and the upgrade would include six new transformers with a National Electrical Manufacturer Association (NEMA) rating of 69 dBA and two 33 kV ground banks with a NEMA rating of 54 dBA (SCE 2023). Converting these sound power levels to sound pressure levels and combining the eight source levels results in a sound pressure level of approximately 85 dBA at 3 feet (ESA 2024). The nearest residences would be located approximately 850 feet to the south-southeast of the existing substation footprint. The calculated combined noise level of the transformers and ground banks at the nearest residence would be approximately 30 dBA L_{eq} and 36 dBA L_{dn}.

These noise levels would be below the City of California City nighttime exterior noise level standard (i.e., 45 dBA) and below the USEPA recommended 55 dBA L_{dn} to protect the public from the effect of environmental noise outdoors in residential areas. In addition, these noise levels would be well below the existing 1-hour L_{eq} minimum and L_{dn} ambient noise levels of 37 dBA and

67 dBA, respectively, measured near Cal City Substation (see Table 3.13-1). Therefore, operational noise levels associated with the Cal City Substation improvements would have no impact.

Operations of other substation/switchyard upgrades would not occur within 1,000 feet of a sensitive receptor and would result in noise levels increases less than estimated for Cal City Substation because they would require less equipment to be installed. There would be no substantial long-term substation- or switchyard-related noise level increases. There would be no impact.

Construction Noise Levels

Construction activities would require a variety of heavy equipment, such as backhoes, dozers, flatbed boom trucks, air compressors and generators, mobile cranes, and concrete trucks that would generate varying noise levels depending on the particular type of construction equipment. On-site construction activities (i.e., construction activities within the proposed alignments, staging areas, and substation/switchyard sites) would create both intermittent and continuous noises. Off-site construction noise sources would consist of passing trucks and other construction-related vehicles. Examples of intermittent construction noise sources would be from passing off-road equipment, loading operations, and from grading and drilling activities. Continuous noise sources would include sustained idling of equipment and/or the operation of pumps and generators at constant rates. In addition, installation of new poles and stringing of conductor cable would require up to two helicopters to assist in some locations. One light-duty helicopter would be used during cable/conductor installation and one medium-duty helicopter would be used for structure installation.

The City of California City noise ordinance has an exemption limit of 60 dBA plus the applicable limits specified in Table 3.13-5, which is 50 dBA for daytime exposure of residences. The logarithmic addition of those two noise levels is 60.4 dBA. There are no applicable local noise level standards available to judge the significance of short-term construction noise levels in unincorporated Kern County or San Bernardino County. In lieu of local quantitative standards for construction noise in those jurisdictions, this analysis provides a quantitative evaluation of daytime construction noise effects based on the general assessment methodology and criteria set forth in the FTA guidelines for residential land uses, which is an hourly 90 dBA L_{eq} (FTA 2018) during daytime hours.

Typical L_{max} noise levels from equipment types that would be used to construct the Project are listed in **Table 3.13-7**. To calculate the Leq values for each piece of construction equipment, the RCNM uses “acoustical usage factors” applied to the Lmax values to incorporate the fraction of time each piece of construction equipment would operate at full power (i.e., its loudest condition) during a construction activity. As described above in Section 3.13.5.1, *Approach to Analysis*, this analysis combines the noise levels for the two loudest pieces of construction equipment to estimate the L_{eq} values at the nearest sensitive receptors. In addition to these equipment noise levels, construction activities involving helicopter operations would be expected to generate noise levels of up to approximately 88 dBA L_{eq} at a distance of 150 feet (USFS 2022). See Impacts 3.13-1 and 3.13-2, below, for the impact discussions relative to the estimated construction equipment and helicopter activity noise L_{eq} values.

TABLE 3.13-7
TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	L_{max} Noise Level (dBA) at 50 feet
Backhoe	78
Concrete mixer	83
Pump truck	81
Crane, mobile	81
Dozer	82
Drill rig	84
Excavator	81
Generator	81
Gradall	83
Grader	85
Man lift	75
Loader	79
Paver	77
Roller	80
Scraper	84
Tractor	84
Trucks	75 to 81

SOURCE: FHWA 2006

Impact 3.13-1: Project construction activities and helicopter O&M activities would generate a temporary increase in ambient noise levels that would exceed the City of California City Noise Ordinance. (*Significant and Unavoidable*)

The distance to the nearest sensitive receptors in California City and the associated estimated construction equipment noise levels are provided in **Table 3.13-8**. As shown in the table, construction of the Kramer–Cal City 115 kV Subtransmission Line would generate temporary noise levels of up to 71.7 dBA L_{eq} at the nearest sensitive receptor at 140 feet from the Project site, which is a single residence near Borax Bill Park. SCE has proposed to implement APM NOI-1, which requires shielding of stationary sources and staging areas, but only when noise levels at a sensitive receptor location would be above 80 dBA. Construction noise at the residence would exceed the City of California City noise ordinance exemption limit of 60.4 dBA for construction activities (logarithmic addition of 60 dBA plus the applicable exterior noise limit of 50 dBA) and, therefore, would generate a substantial temporary increase in ambient noise levels that would be in excess of standards established in the City of California City noise ordinance. The impact on this residence would be significant.

The next closest residences in California City to a Kramer–Cal City 115 kV Subtransmission Line alignment construction site are along Denhart Avenue at a distance of approximately 1,400 feet. At this distance, the noise level would not exceed the City of California City noise ordinance threshold. In addition, as shown in Table 4.13-8, the construction noise levels at the closest sensitive receptors to the Cal City–Edwards–Holgate 115 kV Subtransmission Line and the Cal

City Substation improvements construction activities would be less than the City of California City noise ordinance exemption limit of 60.4 dBA, which would result in a less-than-significant impact. Therefore, the significant impact associated with construction equipment noise is limited to the residence near Borax Bill Park. Implementation of **Mitigation Measure 3.13-1a**, **Construction Noise Reduction Plan**, would reduce noise exposure to the residence near Borax Bill Park from construction equipment activities to the extent feasible.

TABLE 3.13-8
CONSTRUCTION EQUIPMENT NOISE ESTIMATES WITHIN CITY OF CALIFORNIA CITY

Construction Activity	Phase Noise Level (Leq at 50 feet dBA)	Distance to Closest Receptor (ft)	Adjusted Noise Level at Nearest Receptor (Leq dBA)
Kramer–Cal City 115 kV Subtransmission Line			
Staging Area	81.6	620	54.3
Civil Crew (Road Work, Foundations, Ducts)	82.7	140	71.5
Civil Crew (Road Maintenance)	81.4	140	70.2
Structure Installation	76.6	140	65.4
Install Conductor/Cable	79.6	140	68.4
All-Dielectric Self-Supporting/Optical Ground Wire (ADSS/OPGW) Splicing	74.0	140	62.8
Restoration (at end of construction activities)	82.3	140	71.1
Cal City–Edwards–Holgate 115 kV Subtransmission Line			
Staging Areas	81.6	620	54.3
Civil Crew (Road Work, Foundations, Ducts)	82.7	1,050	49.6
Civil Crew (Road Maintenance)	81.4	1,050	48.3
Structure Installation	76.6	1,050	43.5
Install Conductor/Cable	79.6	1,050	46.5
All-Dielectric Self-Supporting/Optical Ground Wire (ADSS/OPGW) Splicing	74.0	1,050	41.0
Restoration (at end of construction activities)	82.3	1,050	49.2
Cal City Substation Improvements			
Staging Areas	81.6	620	54.3
Civil Crew (Site Grading)	84.0	780	54.2
Civil Crew (Channel Install & Additions)	84.0	780	54.2
Civil Crew (Foundation)	83.0	780	53.2
Electrical Crew	82.4	780	52.6
Maintenance Crew	71.0	780	41.2
Test Crew	71.0	780	41.2
Test Crew and Wireman (Cutover)	74.0	780	44.2
Demolition - Test Crew	74.0	780	44.2
Demolition - Maintenance Crew	71.0	780	41.2
Demolition - Electrical Crew	82.4	780	52.6
Demolition - Civil Crew	83.0	780	53.2

SOURCE: SCE 2023; ESA 2024; See Appendix J.

Regarding construction and O&M helicopter activity in California City, helicopter noise was modeled from the nearest staging areas (helicopter landing area) and along the Project alignments. Helicopter noise at Staging Area 1-6 in City California City would result in a noise level of 40.8 dBA at 34,340 feet to the nearest residence, this would be below the City of California City noise ordinance threshold of 60.4 dBA. However, helicopters may also be used at the staging areas near Cal City Substation and along the transmission line alignment to deliver equipment and materials to construction sites, install poles and structures, and remove existing poles. As described in Project Description Section 2.7.1.5, *Helicopter Access*, helicopters would be flown only during daytime hours (i.e., the period from 30 minutes before sunrise to 30 minutes after sunset), except for emergency occurrences.

In addition, SCE has proposed to implement APM NOI-1, which requires helicopter flights to be routed away from residences and schools; however, APM NOI-1 does not specify how far away from residences and schools the helicopter activities must occur. These activities within 3,600 feet of residences in California City would exceed the City of California City noise ordinance exemption limit of 60.4 dBA, which would result in a significant impact (see Appendix J for helicopter noise estimate calculations). Implementation of **Mitigation Measure 3.13-1b, Construction Helicopter Flight Restrictions**, would reduce helicopter noise exposure levels to California City residences to a less-than-significant level.

Mitigation Measure 3.13-1a: Construction Noise Reduction Plan.

SCE and/or its contractors shall develop a Construction Noise Reduction Plan for the residence near Borax Bill Park. The Plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities. The Plan shall include, but not be limited to, the following measures for construction activities:

- Provide the residence with a “hotline” telephone number, which shall be attended during active construction working hours in order to register complaints. All complaints shall be logged noting date, time, complainants’ name, nature of complaint, and any corrective action taken.
- Use construction noise barriers such as temporary sound walls, acoustic blankets, or other barriers to shield construction noise at the residence from activities involving heavy equipment. Heights and specifications of noise barriers shall be designed to ensure that the line of sight is broken between the active construction activities and the residence.
- If nighttime construction activities are proposed to occur within 400 feet of the residence, SCE shall offer to provide the residents with temporary relocation for the duration of such activities.

Mitigation Measure 3.13-1b: Construction and O&M Helicopter Flight Restrictions.

SCE shall ensure that Project helicopter construction and O&M activities do not occur within 3,600 feet of residences in California City or at any location during nighttime hours (i.e., 7 a.m. to 7 p.m.).

Significance after Mitigation: Although several components of Mitigation Measure 3.13-1a would likely reduce the annoyance that would be associated with increased ambient noise levels associated with loud construction activities, it is not

possible to firmly substantiate that implementation of Mitigation Measure 3.13-1a would achieve the noise level reductions needed to mitigate the construction equipment noise impact in California City to a less-than-significant level. Although implementation of Mitigation Measure 3.13-1b would reduce construction and O&M helicopter activity noise levels in California City to less-than-significant levels, it cannot be substantiated that Mitigation Measure 3.1-1a would be effective at reducing the construction noise level at the residence near Borax Bill Park to below the California City construction noise ordinance exemption level. Therefore, the impact would be **significant and unavoidable**.

Impact 3.13-2: Project construction activities would generate a temporary increase in ambient noise levels in unincorporated jurisdictions. (*Less than Significant*)

The distance to the nearest sensitive receptors in unincorporated Kern and San Bernardino counties and the associated estimated construction equipment noise levels are provided in **Table 3.13-8**. In unincorporated Kern and San Bernardino counties, the closest sensitive receptors to construction equipment activities associated with the proposed subtransmission lines would be at distances of at least 315 feet. At this distance, the noise would be up to approximately 63 dBA, which would not exceed the FTA recommended 1-hour L_{eq} daytime or nighttime limits of 90 dBA or 80 dBA, respectively, which would result in a less-than-significant construction equipment noise impact in Kern and San Bernardino counties.

TABLE 3.13-9
CONSTRUCTION EQUIPMENT NOISE ESTIMATES WITHIN UNINCORPORATED JURISDICTIONS

Construction Activity	Phase Noise Level (Leq at 50 feet dBA)	Distance to Receptor (ft)	Noise Level at Nearest Receptor (Leq dBA)
Unincorporated Kern County			
Staging Areas	81.6	330	61.1
Civil Crew (Road Work, Foundations, Ducts)	82.7	315	62.7
Civil Crew (Road Maintenance)	81.4	315	48.3
Structure Installation	76.6	315	56.6
Install Conductor/Cable	79.6	315	59.6
All-Dielectric Self-Supporting/Optical Ground Wire (ADSS/OPGW) Splicing	74.0	315	54.0
Restoration (at end of construction activities)	82.3	315	62.3
Unincorporated San Bernardino County			
Staging Areas	81.6	380	59.6
Civil Crew (Road Work, Foundations, Ducts)	82.7	845	52.0
Civil Crew (Road Maintenance)	81.4	845	50.7
Structure Installation	76.6	845	45.9
Install Conductor/Cable	79.6	845	48.9
All-Dielectric Self-Supporting/Optical Ground Wire (ADSS/OPGW) Splicing	74.0	845	43.3
Restoration (at end of construction activities)	82.3	845	51.6

SOURCES: SCE 2023; ESA 2024; See Appendix J.

There are no sensitive receptors within 1,000 feet of the proposed construction activity sites at Edwards or Kramer substations, or Holgate Switchyard. Since the nearest residential receptors are over 1,000 feet away, construction noise levels at those receptors would be less than those described in Table 3.13-9 and would not result in a substantial temporary increase in ambient noise levels. Therefore, the construction noise impact associated with the proposed improvements at Edwards and Kramer substation, and Holgate Switchyard would be less than significant.

Helicopter construction activities would also occur in the unincorporated areas of Kern and San Bernardino counties. The closest helicopter activities to a sensitive receptor location would be at Staging Area 1-10 in San Bernardino County, which would result in a noise level of approximately 86 dBA at 200 feet from the nearest receptor. This would be below the threshold of 90 dBA for unincorporated jurisdictions. Helicopter noise along the Project alignments in unincorporated jurisdictions during the structure and cable installation construction phases would occur at greater distances from sensitive receptors than 200 feet. Therefore, the helicopter construction activity noise impact in the unincorporated jurisdictions would be less than significant.

Mitigation: None required.

Criterion b) Whether the Project would generate excessive groundborne vibration or groundborne noise levels.

Impact 3.13-3: The Project would generate groundborne vibration or groundborne noise levels. (*Less than Significant*)

The types of construction-related activities associated with propagation of ground-borne vibration would primarily include the use of vibratory rollers for compacting, vibratory hammers for sheet piles, and drilling for pile installation. No impact pile driving or blasting activities are proposed for construction of the Project.

As discussed under Section 3.13.2, *Regulatory Setting*, the FTA vibration threshold for potential architectural damage to buildings extremely susceptible to vibration damage is 0.12 in/sec and the FTA human annoyance threshold for all residential land uses is 75 VdB. A matrix of typical vibration levels from various construction activities at 25 feet is presented in **Table 3.13-10**. There are no historic structures, hospitals, or laboratories located within the vicinity of the Project construction site.

O&M activities of the Project would remain generally the same as existing activities by SCE for existing substations and the associated subtransmission lines and infrastructure. There would be up to 60 additional annual vehicle trips for maintenance and inspection activities. Vibration from operation of a loaded truck at 25 feet would be approximately 0.076 in/sec PPV. This level of vibration would be below FTA's 0.12 in/sec PPV criterion for building damage to the most sensitive buildings. O&M vehicle trips would not result in a noticeable increase in roadside vibration levels. Loaded truck trips are the only Project activity that would generate vibrations during operation. Therefore, O&M activities associated with the Project would not generate excessive groundborne vibration or groundborne noise levels and this impact would be **less than significant**.

TABLE 3.13-10
VIBRATION LEVELS FOR CONSTRUCTION ACTIVITY

Construction Operation	Vibration Metric	Reference Vibration Level (at 25 feet)
Vibratory Roller	Inches/sec (PPV)	0.21
Vibratory Roller	VdB	94
Vibratory Caisson	Inches/sec (PPV)	0.089
Vibratory Caisson	VdB	87
Bulldozer (large)	Inches/sec (PPV)	0.089
Bulldozer (large)	VdB	87
Bulldozer (small)	Inches/sec (PPV)	0.003
Bulldozer (small)	VdB	58
Jackhammer	Inches/sec (PPV)	0.035
Jackhammer	VdB	79
Truck (loaded)	Inches/sec (PPV)	0.076
Truck (loaded)	VdB	86

SOURCE: FTA 2018.

Kramer–Cal City 115 kV Subtransmission Line (Includes Distribution Underbuild, Wood Pole Removal and Telecommunication)

The use of a vibratory roller would be the highest contributor of vibration during construction of the Kramer–Cal City 115 kV Subtransmission Line. The nearest existing off-site building, near the intersection of Twenty Mule Team Parkway and Rudnick Road, is approximately 140 feet southeast from the nearest construction area for the Project where a vibratory roller could be used. At a distance of 140 feet, a vibratory roller typically generates a vibration level of 0.02 in/sec PPV, which is equivalent to approximately 72 VdB. At this distance, vibration levels would be well below the building damage threshold (0.12 in/sec PPV) and would be well below FTA's 80 VdB criterion for infrequent (construction-related) events at residential receptors during nighttime hours when people would be likely to be sleeping. Project vibration levels from use of a vibratory roller at other nearby but further set back buildings would be similar to or less than that estimated for construction of the New Kramer–Cal City 115 kV Subtransmission Line. Accordingly, Project impacts from vibratory roller use on nearby buildings during construction of the Kramer–Cal City 115 kV Subtransmission Line would be **less than significant**.

Cal City–Edwards–Holgate 115 kV Subtransmission Line (Includes Distribution Underbuild, Wood Pole Removal and Telecommunication)

The use of a vibratory roller would be the highest contributor of vibration during construction of the Cal City–Edwards–Holgate 115 kV Subtransmission Line. The nearest existing off-site building is the Church of Jesus Christ approximately 330 feet southeast from the nearest Project construction area where a vibratory roller could be used. At a distance of 330 feet, a vibratory roller generates a vibration level of approximately 0.004 in/sec PPV, which is equivalent to approximately 60 VdB. At this distance, vibration levels would be well below the building damage threshold (0.12 in/sec PPV) and would be well below FTA's 80 VdB criterion for infrequent (construction-related) events at residential receptors during nighttime hours when

people would be likely to be sleeping. Accordingly, Project impacts from vibratory roller use on nearby buildings during construction of the Cal City–Edwards–Holgate 115 kV Subtransmission Line would be **less than significant**.

Cal City Substation Improvements (Includes Distribution Getaways and Telecommunication)

The use of a vibratory roller would be the highest contributor of vibration during construction of the Cal City Substation improvements. The nearest existing off-site building on Mendiburu Road, is approximately 780 feet southeast from the nearest construction area where a vibratory roller could be used. At a distance of 780 feet, a drill typically generates vibration levels of 0.001in/sec PPV, which is equivalent to approximately 42 VdB. At this distance vibration levels would be well below the building damage threshold (0.12 in/sec PPV) and would be well below FTA's 80 VdB criterion for infrequent (construction-related) events at residential receptors during nighttime hours when people would be likely to be sleeping. Accordingly, Project impacts from vibratory roller use on nearby buildings during construction of the Cal City Substation improvements would be **less than significant**.

Other Existing Substation Improvements (Includes Telecommunication)

The use of a vibratory roller would be the highest contributor of vibration during Project construction. The nearest existing off-site building would be more than 1,000 feet away from the nearest construction areas. No existing structures that would be potentially vulnerable to vibration are located in the immediate vicinity of the other Project substation sites such that any damage related to groundborne vibration from construction activities would occur. Vibration impacts during construction of the other existing substation improvements would be **less than significant**.

Mitigation: None required.

Criterion c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, whether the Project would expose people residing or working in the project area to excessive noise levels.

Neither the subtransmission lines or substations are located within 2 miles of a public airport or public use airport, and the Project would not expose people residing or working in the Project area to excessive airport or airstrip noise levels. *(No Impact)*

The nearest public airports are the California City Municipal Airport (located approximately 2 miles east of the proposed New Kramer–Cal City subtransmission line alignment, the New Cal City-Edwards-Holgate subtransmission line alignment, Cal City Substation Improvements), and the Edwards Air Force Base (located approximately 1 mile to the west of the Edwards substation, the nearest of the other existing substation improvements). Even though several Project components are located within 2 miles of these two existing airports, the Project would not involve the development of noise-sensitive land uses that would be exposed to excessive aircraft noise. Workers that would construct the Project would be exposed to periodic short-term aircraft overflight noise associated with these airports; however, the average construction activity noise

levels that the workers would be exposed to would be far greater than the average overflight noise levels that they would be exposed to. Therefore, there would be no impact.

3.13.5.3 Cumulative Effects Analysis

The geographic scope of analysis for cumulative noise impacts encompasses sensitive receptors within approximately 1,000 feet of the Project site that are also within approximately 1,000 feet of a cumulative project. The geographic scope of analysis for cumulative vibration impacts encompasses sensitive receptors within approximately 100 feet of the Project site that are also within approximately 100 feet of a cumulative project. These screening threshold distances were developed based on equations for stationary-source noise and vibration attenuation (Caltrans 2013 and FTA 2006). Beyond these distances, the contributions of noise and vibration from other projects would be greatly attenuated through both distance and intervening structures and their contribution would be expected to be minimal. The temporal scope for cumulative noise and vibration impacts is the construction and operation/maintenance phases of the Project. Section 3.0.3, *Approach to the Cumulative Impacts Analysis*, presents the list of reasonably foreseeable future projects in the Project vicinity (see Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*) that could contribute to cumulative noise and vibration impacts.

Criterion a)

As discussed in Section 3.13.5.2, the Project would not: conflict with applicable local noise policies or ordinances related to time-of-day restrictions for construction, result in a substantial long-term maintenance-related vehicle noise increase, result in a substantial long-term corona noise-related increase or result in a substantial long-term substation- or switchyard-related noise level increase. Because there would be no Project impact associated with these issues, the Project would not contribute to any associated cumulative impacts. *(No Impact)*

In addition, although the Project would result in a significant construction noise impact associated with a temporary increase in ambient noise levels at a residence near Borax Bill Park that would exceed the noise limit identified in the City of California City Noise Ordinance, there is only one cumulative project in that area referred to as the Distribution Pappas 33 kV Line Project, and the portion of it near the residence has already been constructed. Therefore, construction noise of the Project would not combine with construction noise of another project to result in a cumulative impact at the residence near Borax Bill Park. *(No Impact)*

Impact C.3.13-1: The Project construction activities and helicopter O&M activities impact associated with the generation of a temporary increase in ambient noise levels that would exceed the City of California City Noise Ordinance would be cumulatively considerable. (*Less than Significant with Mitigation*)

In addition to the Distribution Pappas 33 kV Line Project discussed above, there is one other cumulative project in California City (i.e., the SCE Battery Energy Storage System) within 1,000 feet of the Project and sensitive receptors. The SCE Battery Energy Storage System project is planned to be located immediately adjacent to Cal City Substation. As described in Table 3.13-8, the Cal City Substation improvements are estimated to result in construction noise levels of up to 54 L_{eq} dBA. Assuming construction activity associated with the SCE Battery

Energy Storage System project would result in similar noise levels as the Project, the combined noise level at the nearest residence would be approximately 54 L_{eq} dBA. This combined noise level would not exceed the City of California City Noise Ordinance and result in a less-than-significant cumulative impact.

However, helicopters may also be used at the staging areas near Cal City Substation. Helicopter noise levels from Staging Area 1-17 would be up to approximately 83 dBA at the nearest residences. SCE has committed to implementing APM NOI-1, which requires helicopter flights to be routed away from residences and schools; however, APM NOI-1 does not specify how far away from residences and schools the helicopter activities must occur. Therefore, proposed helicopter noise levels would be potentially significant. When considered with construction noise levels associated with the SCE Battery Energy Storage System, the proposed construction or O&M helicopter noise levels would be cumulatively considerable. Implementation of Mitigation Measure 3.13-1b, *Construction and O&M Helicopter Flight Restrictions,* is recommended to reduce helicopter noise exposure levels to California City residences to less than cumulatively considerable. The cumulative helicopter noise impact would be reduced to a **less-than-significant** level.

> **Mitigation:** Implement Mitigation Measure 3.13-1b, *Construction and O&M Helicopter Flight Restrictions*.
>
> **Significance after Mitigation:** Less than Significant.

Impact C.3.13-2: The Project construction impact of generating a temporary increase in ambient noise levels in unincorporated jurisdictions would not be cumulatively considerable. (*Less than Significant*)

As described in Impact 3.13-2, Project construction noise levels at the closest sensitive receptors in unincorporated Kern and San Bernardino counties would not exceed the FTA recommended 1-hour L_{eq} daytime or nighttime limits of 90 dBA or 80 dBA, respectively, which would result in a less-than-significant construction equipment noise impact in unincorporated Kern and San Bernardino counties. As shown in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project,* there are two cumulative projects within 1,000 feet of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment, including the Kramer North Solar Farm and the SCE Ivanpah–Control Project; however, these projects are not within 1,000 feet of sensitive receptors that would be affected by the Project. Therefore, the Project construction noise impact in unincorporated Kern and San Bernardino counties would not be cumulatively considerable and the associated cumulative impact would be less than significant.

Because operational noise is generally less impactful than construction noise, the same 1,000-foot geographical scope of analysis for cumulative construction noise may also conservatively be applied to operational noise from stationary sources. There are no reasonably foreseeable cumulative projects within the geographic scope of the Project that would generate substantial operational noise and, consequently, cumulative operational noise impacts from stationary sources would be less than significant.

> **Mitigation:** None required.

Criterion b)

Impact C.3.13-3: The Project impact of groundborne vibration or groundborne noise levels would not be cumulatively considerable. (*Less than significant*)

As described in Impact 3.13-3, the use of a vibratory roller and/or loader trucks would be the highest contributors of vibration during construction or operation of the Project. The Project vibration impact of the Project would be less than significant. There are no sensitive receptors within 100 feet of the Project site that are also within 100 feet of a reasonably foreseeable cumulative project and, consequently, the Project vibration impact would not be cumulatively considerable and the cumulative vibration impacts would be less than significant.

Mitigation: None required.

Criterion c)

As discussed above, no impact would occur with respect to exposure of people residing or working within the vicinity of a private airstrip or a public airport or public use airport in the Project area. Therefore, the Project would cause no impact that could cause or contribute to any potential cumulative impact regarding this consideration. *(No Impact)*

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3.14 Population and Housing

This section evaluates the impacts of the Project on population and housing. It presents information about the environmental and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to population and housing.

3.14.1 Environmental Setting

3.14.1.1 Population

The Project would be located within unincorporated portions of Kern County and San Bernardino County, the city of California City, and Edwards Air Force Base (EAFB). Kern and San Bernardino counties are located north and east of Los Angeles County, respectively. 2022 population estimates for Kern and San Bernardino counties, the city of California City, and EAFB are provided in **Table 3.14-1**.

TABLE 3.14-1
2022 POPULATION ESTIMATES IN PROJECT AREA

Population	Kern County	San Bernardino County	California City	Edwards Air Force Base
Total Population	919,108	2,193,656	15,002	2,694

SOURCE: CDOF 2020a

Table 3.14-2 summarizes historic and projected population growth from 2010 to 2035 for Kern and San Bernardino counties, the city of California City, and EAFB. As demonstrated in the table, the population in these areas is expected to increase over the next decade. Kern County has experienced steady growth over the past three decades. The population count reported by the California Department of Finance (CDOF) in the 2020 census was approximately 909,235. This is an 8.3 percent increase from the population in 2010, which was approximately 839,631 (CDOF 2021). San Bernardino County has experienced similar steady growth. San Bernardino County's population in 2020 was estimated to be 2,181,654. This is a 7.2 percent increase from the 2010 census, which determined that the population was 2,035,210 (CDOF 2021).

The city of California City followed similar population growth trends in the same time period. In 2020 its population was 14,973 (CDOF 2021). The population at EAFB is variable depending on federal decisions and current service requirements. In 2020, the EAFB population was estimated to be 2,676, which is a nearly 30 percent increase from the year 2010 (CDOF 2021).

TABLE 3.14-2
HISTORIC AND PROJECTED POPULATION GROWTH IN THE PROJECT AREA FROM 2010 TO 2035

Area	2010 Population	2020 Population	% Change 2010–2020	Projected 2035 Population	% Change 2020–2035
Kern County	839,631	909,235	8.3	1,076,049	18.3
San Bernardino County	2,035,210	2,181,654	7.2	2,637,400	20.9
California City	14,120	14,973	6.0	16,700	11.5
Edwards Air Force Base	2,063	2,676	29.7	n.a.	n.a.

NOTE: n.a. = information not available
SOURCES: CDOF 2020a, 2022; Kern COG 2020, 2022; SCAG 2016

3.14.1.2 Labor Force and Local Unemployment Rates

The labor force for construction personnel in Kern County as of February 2024, determined by the California Employment Development Department (EDD), was 15,600 people (EDD 2024a). The labor force for construction personnel in San Bernardino County as of December 2023 was 42,600 people (California Open Data Portal 2023). In February 2024, the unemployment rate for Kern and San Bernardino counties was 10.2 percent and 5.4 percent, respectively (EDD 2024a, 2024b).

3.14.1.3 Housing

According to the CDOF, at the beginning of 2023, Kern County had an estimated 195,447 total housing units with a vacancy rate of approximately 3.1 percent. San Bernardino County had an estimated 613,223 total housing units with a vacancy rate of approximately 5.2 percent. The vacancy rate in the city of California City was 11.1 percent and at EAFB was 13.9 percent (CDOF 2023). In addition to existing rental and ownership housing, there are numerous hotels and motels in the Project area for overnight accommodation (temporary housing). Housing data from 2023 for Kern and San Bernardino counties, the city of California City, and EAFB are shown in **Table 3.14-3**.

TABLE 3.14-3
2023 HOUSING DATA ESTIMATES IN THE PROJECT AREA

Area	Total Housing Units	Occupied Housing Units	Vacant Housing Units	Vacancy Rate (percent)
San Bernardino County	613,223	581,612	31,611	5.2
Kern County	195,447	186,661	8,786	3.1
California City	5,334	4,742	592	11.1
Edwards Air Force Base (2020 most recent)	684	589	95	13.9

SOURCES: CDOF 2020b, 2023

As demonstrated in **Table 3.14-4**, the number of households in Kern and San Bernardino counties and the city of California City is forecast to greatly increase between the years of 2010 and 2035 (Kern COG 2022; CDOF 2022).

TABLE 3.14-4
HOUSEHOLD ESTIMATES: 2010 TO 2035

Area	2010	2020	2035
San Bernardino County	611,618	646,226	816,000
Kern County	254,610	275,340	318,180
California City	4,102	4,628	4,900
Edwards Air Force Base	n.a.	684	n.a.

NOTES: n.a. = information not available.
SOURCES: CDOF 2022; Kern COG 2020, 2022; SCAG 2024

3.14.2 Regulatory Setting

3.14.2.1 Federal

There are no federal statutes, regulations, plans, or policies governing population and housing-related considerations that apply to the Project.

3.14.2.2 State

The California Department of Housing and Community Development is required to allocate the region's share of the statewide housing needs to local councils of government (COG) based on state department of finance population projections and regional population forecasts. The Kern Council of Governments (Kern COG) is the designated Metropolitan Planning Organization (MPO) and Regional Transportation Planning Agency for Kern County and its 11 cities, including California City. Although Kern COG does not have a direct regulatory role, it undertakes regular planning efforts for the region to fulfill its obligations, implement state regulations, and support its member agencies. Kern COG, acting in the capacity as a state designated regional planning agency, prepares a Regional Housing Needs Allocation (RHNA) Plan during each (8.5-year) housing element cycle. The RHNA Plan is a key tool for Kern COG and its member agencies to prepare for population and housing growth (Kern COG 2021). The RHNA Plan assesses the region's future housing needs and defines the housing need allocation for each member agency. The most recently published RHNA Plan covered the period of June 30, 2023, to December 31, 2031 (Sixth Cycle). It is anticipated that the population in Kern County will reach one million persons in the year 2028. To meet the near-term projected need, Kern COG determined that 57,650 housing units must be constructed by 2031, with roughly 42 percent of those units affordable for lower income households, 16 percent for moderate income households, and 42 percent for above-moderate income households (Kern COG 2022).

The Southern California Association of Governments (SCAG) is a joint powers agency established under California Government Code Section 6502 et seq. Although SCAG does not have a direct regulatory role, it is designated as a COG, a regional transportation planning agency, and an MPO

for a six-county region including San Bernardino County. SCAG functions as an association of local governments and agencies that voluntarily convene to address regional issues. SCAG anticipates that the San Bernardino County population will increase by 448,000 people and the county will need to build 296,000 housing units by 2050 (SCAG 2023). SCAG's most recently published RHNA Plan covered the planning period of June 30, 2021, to October 15, 2029 (SCAG 2021).

3.14.2.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Project. Pursuant to CPUC General Order 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction." The discussion below presents local policies and regulations for informational purposes only.

City of California City

The following policy is from California City's Housing Element (City of California City 2015).

> ***Policy 1.5:*** Maintain the low-density residential character of California City.

The following overall policies are from California City's General Plan Land Use Element (City of California City 2009).

> Coordinate with the appropriate agencies and proponents of any phased large-scale development so that adequate land and facilities are set aside for schools, parks, police/fire, libraries, cultural facilities, recreational facilities, and other service uses required to serve the community.
>
> To ensure that land use policy and development in the community are consistent and fully integrated with local goals and policies governing transportation and circulation, housing, public health and safety, noise, conservation and open space.

3.14.3 Applicant Proposed Measures and Best Management Practices

3.14.3.1 Applicant Proposed Measures

No Applicant proposed measures have been identified by Southern California Edison (SCE) to reduce Project impacts related to population and housing.

3.14.3.2 Best Management Practices

No best management practices to reduce potential Project impacts related to population and housing have been identified by SCE.

3.14.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to population and housing if it would:

a) Induce substantial unplanned 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); or

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

3.14.5 Direct and Indirect Effects

3.14.5.1 Approach to the Analysis

This section discusses potential impacts on population and housing using Appendix G of the CEQA Guidelines. The Project would be regulated by the various laws, regulations, and policies as described in Section 2.11, *Permits and Approvals*, as well the applicable regulations related to population and housing, as described in Section 3.14.2.

3.14.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would induce substantial unplanned 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).

Impact 3.14-1: The Project could induce unplanned population growth. (*Less than Significant*)

Construction

A project could have a direct impact on population and housing resources if it were to induce substantial unplanned population growth in an area. Throughout the Project's 24-month construction schedule, there would be up to 140 construction workers and an average of 97 construction workers per day. The construction personnel may be from SCE construction crews or from contractors. It is anticipated that all temporary construction positions would be filled from the local labor pool available in Kern and/or San Bernardino counties, with workers expected to commute an average distance of 120 miles (round trip) per day throughout the construction duration. This could result in a temporary need for accommodation during construction, for instance, if workers were to engage in "weekly commuting" (staying in the local area during the work week and returning home on weekends). Any short-term lodging demand created during construction could be accommodated by existing temporary housing units.

California City has a relatively high housing vacancy rate of 11.1 percent, so even if construction workers were intent on staying near the Project area in a more permanent sense, there would be housing available to accommodate them. It is anticipated that a small number of construction workers may choose to do this. Existing housing can accommodate the temporary influx of

construction employees. Additionally, existing businesses and services can absorb the temporary increase in population. Therefore, the potential short-term population growth that could be caused by the Project's construction phase would be a **less-than-significant** impact.

Operation

The Project would not result in the creation of any new permanent jobs and would not include the development of new homes or businesses, so it would not directly induce permanent population growth in the Project area once operational. There would be no direct population growth impacts associated with the Project.

The Project could have an indirect impact on population growth if it would generate growth or produce a concentration of people above what is assumed in local and regional land use plans, or what is assumed in projections made by regional planning authorities. This could occur as a result of this Project, because the addition of infrastructure to an area can result in the unplanned indirect growth of population and housing. With an increase in available and reliable electrical capacity it is possible for the Project to result in growth that exceeds what is predicted by local and regional land use plans. An indirect increase in population due to the additional availability of electrical capacity from the Project could be a contributing factor for unplanned growth. However, it is not typical for an area to experience population growth simply as a result of more available electrical capacity. Other factors such as water supply are more closely tied to population growth.

As described in the Project Description, the Project is designed to add load-serving capacity in SCE's Electrical Needs Area (ENA) to serve current and long-term forecast electrical demand (i.e., planned growth); improve system reliability within the ENA by providing diverse routes of power supply to the region; improve system operational flexibility by minimizing reliance on the Edwards Substation (located on a military base with restricted access) to provide power to the ENA (adjacent to the military base); and improve system reliability within the ENA by providing a diversely routed second 115 kV source line to the Edwards Substation. The continued or enhanced availability of electrical capacity does not normally ensure or encourage growth within a particular area. Other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have more direct effects on growth. The Project is designed to increase reliability and accommodate existing and planned electrical load, rather than to induce unplanned growth. For these reasons, indirect operational impacts associated with population growth would be **less than significant**.

Mitigation: None required.

Criterion b) Whether the Project would displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

The Project would be constructed within new, modified, or upgraded rights-of-way (ROWs) and easements, and public ROWs or franchise agreements. Implementation of the Project would not displace any residential housing units. Nor would it displace people or any other structures that are occupied by people. The Project, including the proposed subtransmission lines and upgrades

to substations/switchyard, would not displace existing people or housing. Therefore, the Project would have **no impact** associated with the displacement of people or the construction of replacement housing. *(No Impact)*

3.14.5.3 Cumulative Effects Analysis

The geographic scope for the cumulative impacts associated with population and housing includes Kern and San Bernardino counties, the city of California City, and EAFB. The analysis assumes full build-out of the projects listed in Section 3.0.3, *Approach to the Cumulative Impact Analysis*. As shown in Table 3.14-2, Kern and San Bernardino counties are expected to undergo population growth in the next two decades. By 2035, the population of Kern County is forecasted to increase from 2020 levels by 18.3 percent (Kern COG 2020). In the same time frame, the population of San Bernardino County is forecasted to increase by 20.9 percent (SCAG 2016).

Criterion a)

Impact C.3.14-1: The Project impact of unplanned population growth would not be cumulatively considerable. (*Less than Significant*)

The potential short-term population growth that could be caused by the Project's construction phase would be a less-than-significant impact and operations of the Project would not directly induce permanent population growth in the Project area once operational.

The projects listed in the cumulative scenario are primarily cannabis facilities, electrical infrastructure facilities, and solar energy facility projects. The cannabis facilities and some of the other cumulative projects may result in limited short-term and/or long-term population growth from workers that move to the area. The electrical infrastructure and solar energy facility projects would add energy generation and transmission capacity to the electrical grid. Indirect effects related to population growth could occur as a result of increased capacity. However, these solar facilities are being implemented because of California's renewables portfolio standard requirements to offset carbon-based generation systems and would not induce population growth or include or require new housing as a result of their implementation.

The projects identified in the cumulative scenario, as well as other future developments, would be subject to the applicable city and/or county planning processes and environmental review on a project-by-project basis. The population growth from these projects would not combine with the unplanned population growth impact of the Project to the extent that the Project impact would be cumulatively considerable. The cumulative impact would be less than significant.

Criterion b)

As discussed in Section 3.14.5.2, the Project would have no impact regarding displacement of people or housing units and would not require the construction of replacement housing elsewhere. The Project is proposed, among other things, to meet current and long-term forecasted and planned growth within the ENA. Neither the Project nor the cumulative projects would induce unplanned growth because there are no impacts related to population and housing associated with these projects. Therefore, the Project would not cause or contribute to any cumulative impact

related to these criteria. There would be no cumulative impact related to population and housing attributable to the Project. *(No Impact)*

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3.15 Public Services

This section evaluates the impacts of the Project on public services. It presents information about the environmental and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The public services analyzed in this section include fire protection, emergency medical services, police protection, schools, and other public facilities. Parks and recreational facilities are evaluated in Section 3.16, *Recreation*.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The CPUC did not receive scoping comments pertaining to public services.

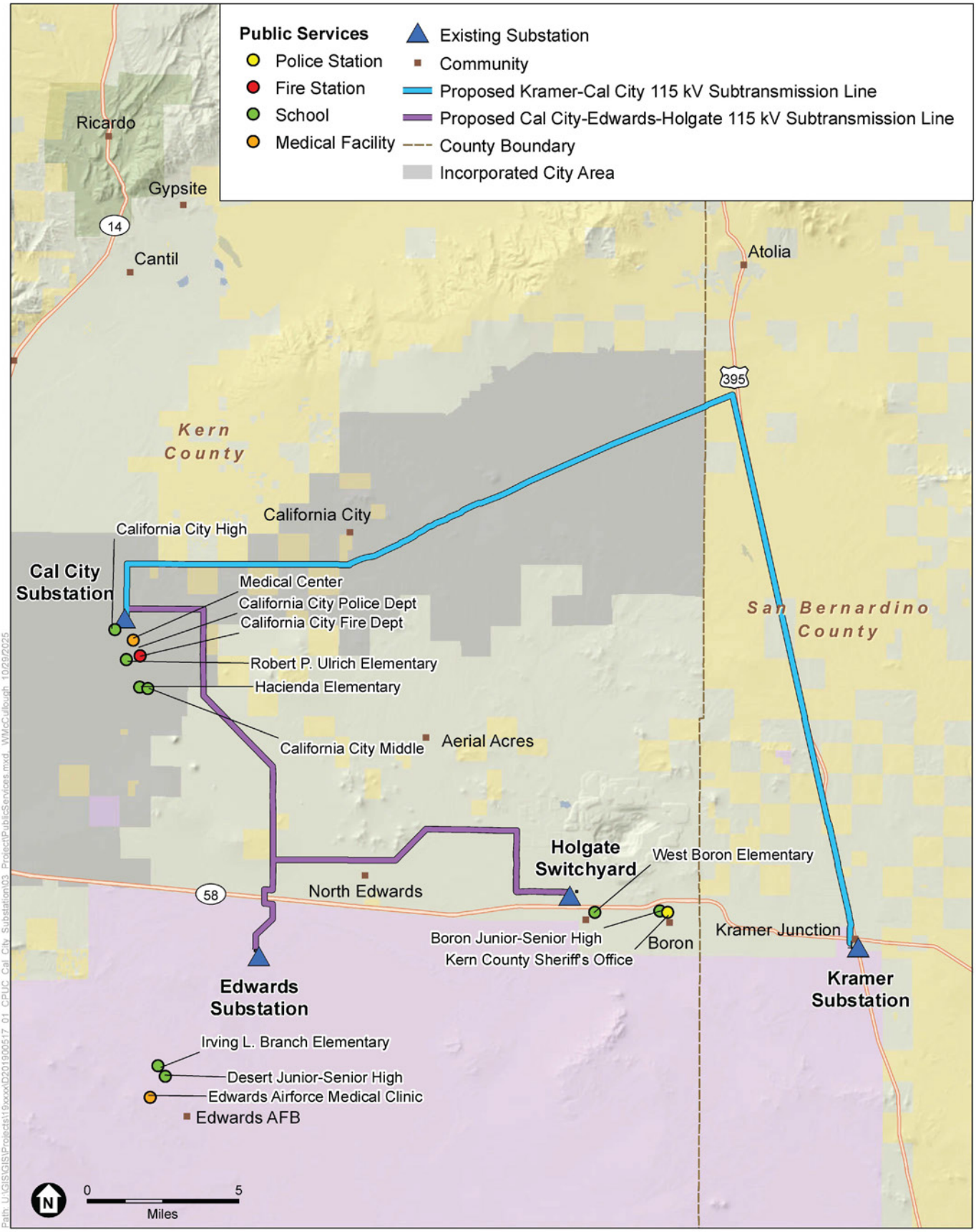
3.15.1 Environmental Setting

The communities served in the Project area include unincorporated portions of Kern County and San Bernardino County, the city of California City, and Edwards Air Force Base (EAFB). The public services facilities serving these communities include fire departments, law enforcement, medical, schools, and other public services facilities, as depicted in **Figure 3.15-1**.

3.15.1.1 Fire Protection and Emergency Medical Services

Kern County Fire Department

The Kern County Fire Department provides fire and emergency services to nine cities and forty-one communities throughout the county and to the state of California under the California Master Mutual Aid Agreement. The Kern County Fire Department operates 47 fire stations that serve unincorporated communities and cities throughout over 8,000 square miles of Kern County. In 2023, The Kern County Fire Department responded to 5,359 incidents of fire, 39,408 emergency medical services (EMS) rescue incidents, 1,373 hazard incidents, and 16,407 service calls (Kern County Fire Department 2023). Each fire station is staffed with three personnel and type 1 fire engines in addition to a type 3 or 6 wildland firefighting engine (Drucker, pers. comm., 2024). There are three fire stations located near the Project location within Kern County, which are Station 85 (Randsburg), Station 87 (Boron), and Station 14 (Mojave). Station 85 is located within the jurisdiction of Battalion 7, which responded to 10,587 incidents in 2021 (Kern County Fire Department 2021). Stations 14 and 87 are located within the jurisdiction of Battalion 1, which responded to 12,288 incidents in 2021 (Kern County Fire Department 2021). Stations 14 and 87 are the nearest fire stations to the Project outside of California City and have mutual aid agreements with the California City Fire Department. The average response times from these stations to California City are 18 minutes and 27 minutes, respectively. These stations each have one fire engine (California City Fire Department 2023a).



SOURCES: ESA, 2023; SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.15-1
Public Services

San Bernardino County Fire Protection District

The San Bernardino County Fire Protection District provides fire and emergency response services to more than 60 communities and cities and all unincorporated areas of the county. San Bernardino County Fire Protection District's Office of Emergency Services serves as the operational area lead agency, coordinating the provision of emergency services with the 24 cities and towns in San Bernardino County (San Bernardino County Fire Protection District 2023a). The Kramer Substation and a portion of the Kramer-Cal City 115 kV Subtransmission Line alignment is located in San Bernardino County. The nearest fire station is Station 4 and is located at 27089 Helendale Road in Helendale, which is more than 20 miles from the eastern section of the Project. Kern County Fire stations are all closer to the Project and must respond to a call within San Bernardino County due to the effective California Master Mutual Aid Agreement (San Bernardino County Fire Protection District 2023b; State of California 1950).

City of California City Fire Department

City of California City Fire Department is the nearest local fire department to the Project. The City of California City Fire Department is responsible for fire protection in its 204-square-mile jurisdiction. There is a minimum of four personnel staffed daily at the Main City Fire Station (California City Fire Department 2023b). In 2019, the California City Fire Department responded to 2,857 incidents, which consisted of 88 fires, 15 explosions, 1,996 EMS and rescue, 104 hazardous conditions, 577 public service calls, and one call related to an earthquake disaster. The average response time was approximately 7 minutes. The City of California City Fire Department has a mutual aid resources agreement with Kern County Fire Department Station 14 – Mojave, which has an average response time from this station to California City of 18 minutes. Kern County Fire Department Station 87 – Boron has an average response time of 27 minutes to California City; and Edwards Air Force Base (EAFB) Fire Department has an average response time of 30 minutes to California City (California City Fire Department 2023a).

Edwards Air Force Base Fire Department

EAFB is overseen by the Department of Defense and is located in a federally managed portion of Kern County. The base has a population of 2,712 (as of 2024), including military personnel and civilians. There are five fire stations on base, providing various services. The services that these stations provide are specialized for EAFB, such as responding to hazardous materials or aircraft rescue. However, EAFB also includes stations that respond to firefighting, natural disasters, and structure collapse. Station 5 is the station nearest to the Project sites and alignment that are on the base (EAFB 2014). EAFB Fire Department has one fire engine and an average response time of 30 minutes. EAFB has a mutual aid agreement with California City Fire Department (California City Fire Department 2023a).

3.15.1.2 Police Protection

State

The California Highway Patrol (CHP) is a law enforcement agency created in 1929 to provide uniform traffic law enforcement for the state of California. The CHP has jurisdiction over all interstates and state routes in the Project area including U.S. Highway 395 and State Route 58.

The Project area is served by the CHP Inland Division. The nearest office is in Mojave, at 1313 Highway 58 (CHP 2023).

Kern County Sheriff's Office

The Kern County Sheriff's Office consists of a staff of over 1,200 agents that serve more than 890,000 people in the Kern County area (Kern County Sheriff's Office 2023). There is a total of 14 Kern County Sherrif's substations. The closest substation to the Project is Boron Station. This Kern County Sheriff's substation is located at 26949 Cote Street, Boron. Boron Station answered 312 calls in 2023 and has an average response time of roughly 20 minutes. The estimated response time reflects calls from places at further distances relative to where the Project would be. There is currently one deputy assigned to the Boron Station daily. However, the sheriff's department intends to increase staffing (Jones, pers. comm., 2024).

San Bernardino County Sheriff's Department

In collaboration with various cities and other agencies that have jurisdiction in San Bernardino County, the San Bernardino County Sheriff's Department provides law enforcement services to the unincorporated communities in the County. In addition, many cities have contracted police protection services with the San Bernardino County Sheriff's Department. The San Bernardino County Sheriff's Department serves over 2.1 million residents, employs over 4,200 people, has 8 county and 14 patrol stations, and responds to about 966,000 calls for service annually. The nearest patrol station is approximately 29 miles south of Kramer Substation in Victor Valley, located at 11613 Bartlett Avenue (San Bernardino County Sheriff's Department 2023).

City of California City Police Department

California City Police Department is staffed by 17 sworn officers and 13 non-sworn personnel and is a full-service agency. The department is responsible for the third largest land size city in the state of over 200 square miles containing 14,000 residents. The police station is located at 21130 Hacienda Blvd (California City Police Department 2023). The station responded to 14,838 incidents in 2023 with an average response time of approximately 6 minutes. There is a minimum of two officers staffed at a station per shift (Escobar, pers. comm., 2024).

Edwards Air Force Base Security Forces

EAFB is staffed by the 95th Security Forces Control Center, which is a non-emergency service that can be contacted 24 hours a day. The security force recommends that emergency calls be made through the EAFB's fire department when on base (EAFB 2023).

3.15.1.3 Schools

The Project would be located within two school districts, one in Kern County and one that spans Kern and San Bernardino counties (**Table 3.15-1**). Mojave Unified School District is in Kern County and serves 3,036 students with six schools (U.S. News & World Report 2023a). Muroc Joint Unified School District is in both Kern and San Bernardino counties and has 1,683 students with five schools (U.S. News & World Report 2023b).

TABLE 3.15-1
SCHOOL DISTRICTS IN THE VICINITY OF THE PROJECT

District	Area Served	Grades Served	Student-Teacher Ratio	Number of Students
Mojave Unified School District	Mojave, California City	K–12	23:1	3,036
Muroc Joint Unified School District	Muroc	K–12	19:1	1,683

SOURCES: U.S. News & World Report 2023a, 2023b

3.15.1.4 Parks

Parks and other recreational facilities within Kern and San Bernardino counties are provided by federal, state, and local agencies, as well as municipal recreation departments. The California City Parks and Recreation Department is within the city of California City. See Section 3.16, *Recreation*, for detailed discussion of recreational facilities, including parks and recreational lands in the vicinity of the Project.

3.15.1.5 Other Public Facilities

Libraries

The libraries in the Project area are California City Branch Library, at 9507 California City Boulevard, approximately 1.2 miles southeast of Cal City Substation; Boron Branch Library, at 26967 Twenty Mule Team Road, approximately 3.9 miles southeast of Holgate Switchyard; EAFB – Public Library, at 5 Yeager Boulevard, approximately 4.2 miles south of Edwards Substation.

Medical Facilities

There are two medical facilities in the Project area, concentrated in California City: Primary Care: Adventist Health Tehachapi Valley, less than 0.5 mile from the Cal City Substation and Cal City Urgent Care, approximately 2 miles southwest of Cal City Substation.

3.15.2 Regulatory Setting

3.15.2.1 Federal

There are no federal policies or regulations pertaining to public services that would be applicable to the Project.

3.15.2.2 State

There are no state regulations that would be applicable to the Project's analysis of population and housing.

3.15.2.3 Local

Pursuant to CPUC General Order 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's

jurisdiction." Therefore, the discussion below presents local policies and regulations for informational purposes only; the CPUC does not consider these regulations "applicable" as that term is used in CEQA.

Kern County General Plan

The following policies in the Kern County General Plan Land Use, Open Space, and Conservation Element pertain to public services (Kern County 2009):

> ***Policy 3:*** Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.
>
> ***Policy 6:*** The County will ensure adequate fire protection to all Kern County residents.
>
> ***Policy 7:*** The County will ensure adequate police protection to all Kern County residents.

San Bernardino County General Plan

The following policies in the San Bernardino County General Plan pertain to public services (San Bernardino County 2020):

> ***Policy PP-1.1: Law enforcement services.*** The Sheriff's Department provides law enforcement services for unincorporated areas and distributes resources geographically while balancing levels of service and financial resources with continuously changing needs for personal and property protection.
>
> ***Policy PP-3.1: Fire and emergency medical services.*** We maintain a sufficient number and distribution of fire stations, up-to-date equipment, and fully trained staff to respond effectively to emergencies.
>
> ***Policy PP-3.2: Fire District.*** We support the expansion of the Fire District to serve additional incorporated jurisdictions, and the use of special funding and financing mechanisms to augment Fire District revenues to improve service and coverage.
>
> ***Policy PP-3.6: Concurrent protection services.*** We require that fire department facilities, equipment, and staffing required to serve new development are operating prior to, or in conjunction with new development.
>
> ***Policy PP-4.1: Emergency management plans.*** A reduced risk of and impact from injury, loss of life, property damage, and economic and social disruption resulting from emergencies, natural disasters, and potential changes in climate.
>
> ***Policy PP-4.3: Automatic and mutual aid.*** We participate in agreements for automatic and mutual aid with other local, state, federal, and nongovernmental emergency service providers to improve protection services and emergency response throughout the county.

California City General Plan

The following policies in Chapter 6, Safety, of the California City General Plan pertain to public services (City of California City 2009):

- Ensure that new development does not create a burden on adequate levels of emergency response services, including fire protection services and law enforcement services.

- Work with the Fire Department and Police Department to ensure sufficient services can adequately protect and serve the community.

3.15.3 Applicant Proposed Measures and Best Management Practices

3.15.3.1 Applicant Proposed Measures

No Applicant proposed measures have been identified by Southern California Edison (SCE) to reduce Project impacts related to public services.

3.15.3.2 Best Management Practices

No best management practices have been identified by SCE to reduce Project impacts related to public services.

3.15.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, the Project would result in significant impact on public services if it would:

a) 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 following public services:

   i) Fire protection;

   ii) Police protection;

   iii) Schools;

   iv) Parks; or

   v) Other public facilities.

3.15.5 Direct and Indirect Effects

3.15.5.1 Approach to the Analysis

This section discusses potential impacts on public services as guided by Appendix G of the CEQA Guidelines. It is assumed that the Project would comply with applicable federal, state, and local laws and regulations, and governing agencies and institutions would be expected to continue to enforce applicable requirements to the extent that they do so currently.

3.15.5.2 Direct and Indirect Effects of the Project

Criteria a.i) through a.v) Whether the Project would 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 fire protection, police protection, schools, parks, or other public facilities.

Fire Protection

Construction

Project construction could result in emergency situations that require emergency response services, including fire protection. Temporary lane closures during construction activities could result in delays that could affect emergency response times; however, such delays would not require the construction of new or altered facilities to provide adequate fire protection services. See Impact 3.17-5, in Section 3.17, *Transportation*, for the Project effects on emergency service provider access due to construction-related lane closures.

SCE anticipates that construction of the Project would take approximately 24 months and require approximately 97 workers on any given day. It is anticipated that all temporary positions would be filled from the local labor pool available in Kern and San Bernardino counties, with workers expected to commute to the site rather than relocate. Since construction activities would be limited in duration and would require a small, local construction workforce, they would not increase short-term demand for fire protection services such that new or physically altered facilities would be required. Therefore, there would be no impact.

Operation

Once constructed, the Project would continue to require routine maintenance, inspection, and vegetation management activities, similar to those provided by SCE under existing conditions. As with construction, emergency situations requiring fire protection services could occur. However, such situations would be unplanned and isolated and would not generate demand for fire protection services such that new fire protection facilities would be required. The Project would not require additional personnel above existing operational staffing levels. Vegetation would be maintained to facilitate access and in compliance with power line clearance requirements (e.g., maintenance for poles would include clearing of vegetation around the poles). Furthermore, the local fire protection facilities (described in the Environmental Setting) that would serve the Project in an emergency are already in place and would not change because of the Project. For these reasons, operation and maintenance of the Project would not require construction of new or physically altered fire protection facilities to maintain acceptable service ratios, response times, or other performance standards. There would be no impact.

Police Protection

Construction

Potential effects on police protection service would be limited primarily to Project construction. Temporary lane closures during construction activities could affect police protection response times, but not to the extent that the construction of new or altered facilities would be necessary to provide police protection services. See Impact 3.17-5, in Section 3.17, *Transportation*, for the Project effects on emergency service provider access due to construction-related lane closures.

Police response may be required in the event of vandalism, theft, or a trespasser at a Project work sites. Security lighting and fencing at the construction staging areas and substations/switchyard would reduce instances of crime and the associated need for police services. Although the Project may result in increased demand for police services, such an increase would be negligible. Therefore, the Project would not require construction of new or physically altered police protection facilities to maintain acceptable service ratios, response times, or other performance standards. There would be no impact.

Operation

The Project could result in an impact on police protection if its operation would require additional police resources. Although the Project may result in increased demand for police services in the event of vandalism, theft, or a trespasser at a Project facility, such an increase would be negligible. Therefore, the Project would not require construction of new or physically altered police protection facilities to maintain acceptable service ratios, response times, or other performance standards. There would be no impact.

Schools

Construction

As discussed, Project construction is estimated to result in the employment of approximately 97 workers in average, who would commute to the Project sites and alignments from within Kern and San Bernardino counties. Therefore, it is not expected that the Project construction workforce would relocate school-age children into the service areas of the school districts in the Project vicinity. The Project would not result in a substantial increase in demand for school facilities and would not require the construction of a new school or modification of an existing school, the construction of which could cause significant environmental effects. There would be no impact.

Operation

As discussed in Section 3.14, *Population and Housing*, the Project would not result in substantial increases in the local population or demand for housing, which typically are associated with an increased demand for public school services. Therefore, the Project would not result in a substantial increase in demand for school facilities and would not require the construction of a new school or modification of an existing school, the construction of which could cause environmental effects. There would be no impact.

Parks

For the reasons described in Section 3.16, *Recreation*, which describes the Project's potential to cause impacts with respect to the accelerated deterioration of park facilities and the construction of new park facilities, the Project would not require the construction of new parks or modification of existing parks, the construction of which could cause significant environmental effects. There would be no impact.

Other Public Facilities

The Project would not result in substantial adverse impacts on other public facilities (e.g., public libraries, hospitals, or other civic uses) because, as discussed, the Project would not result in a notable increase in local population or housing, which would typically be associated with increased demand for such public facilities. Although unlikely, it is possible that Project construction could result in a minor increased use of other types of public services such as medical facilities and libraries. However, such increases would not be substantial and would not require the construction of new public facilities or modification of existing public facilities, the construction of which could cause significant environmental effects. There would be no impact.

Conclusion Summary

Construction and operation of the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities; nor would it create the 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 fire protection, police protection, schools, parks, or other public facilities. *(No Impact)*

3.15.5.3 Cumulative Effects Analysis

Criteria a.i) through a.v)

As stated in Section 3.15.5.2, *Direct and Indirect Impacts of the Project*, there would be no impacts on public service resources attributable to the Project. Therefore, there could be no incremental impacts that would be cumulatively considerable, and there would be no cumulative impact on public services associated with the Project. *(No Impact)*

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3.16 Recreation

This section evaluates potential impacts of the Project on recreation resources. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to recreation.

3.16.1 Environmental Setting

Existing recreational and open space resources in the Project area are discussed in this section. A wide variety of recreational activities are provided by federal, state, and local agencies within Kern and San Bernardino counties, and California City. The parks, trails, and recreational areas within 5 miles of the Project sites and alignments are listed in **Table 3.16-1** and their locations are depicted in **Figure 3.16-1**. Following the table and figure are detailed descriptions of the recreational areas and facilities by jurisdiction.

3.16.1.1 Federal Recreation Resources

U.S. Bureau of Land Management

Much of the land surrounding the Project alignments is managed by the BLM at the Ridgecrest field office. The entire Project and alternative alignments are within the California Desert Conservation Area, which is also managed by the BLM in its California Desert District. The office manages and preserves 11 million acres in the California desert (BLM 2024). The recreational uses that take place on these lands include dispersed camping, land sailing, sightseeing, hiking, hunting, and the recreational use of off-highway vehicles (OHVs).

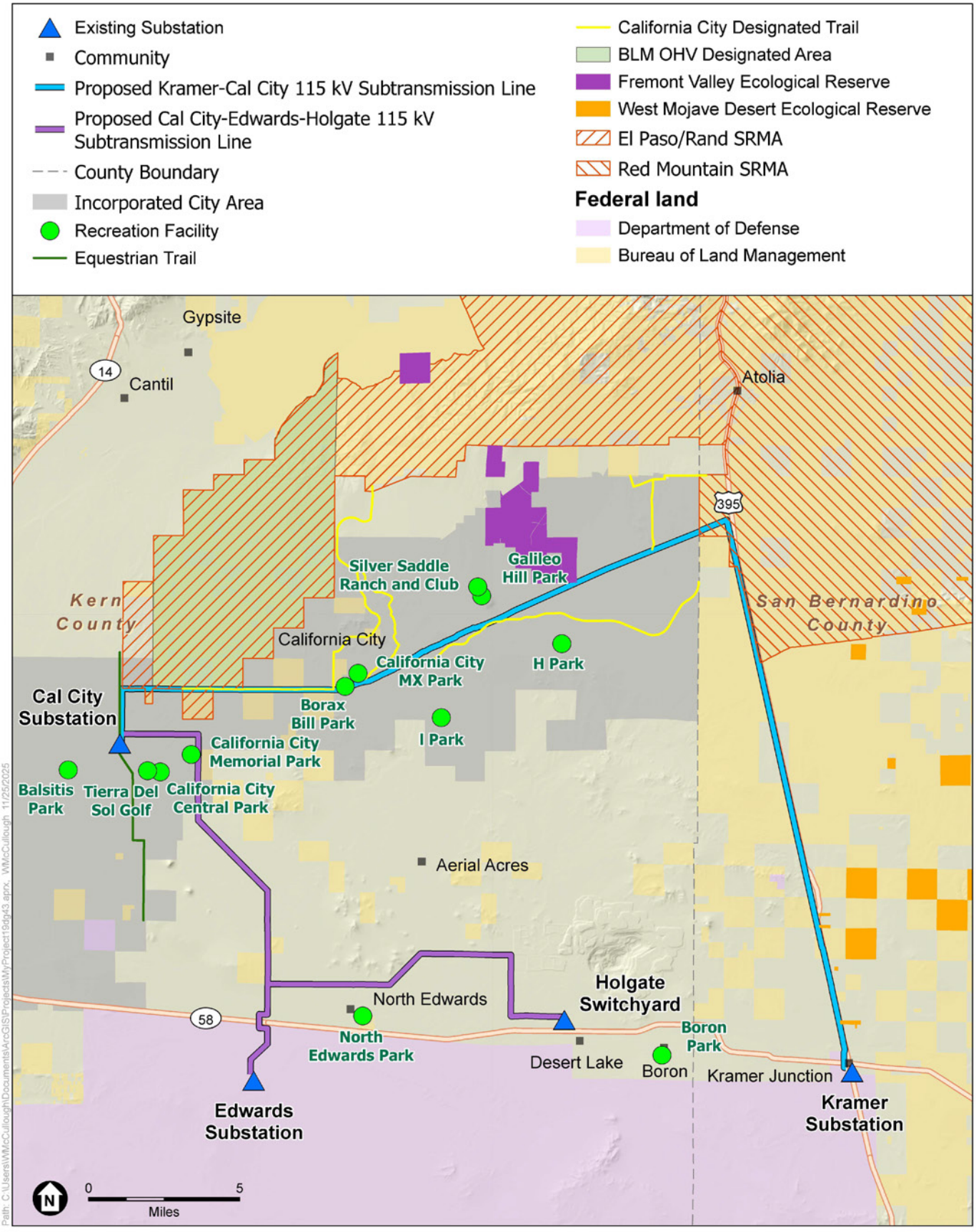
Special Recreation Management Areas (SRMAs) are lands dedicated to recreational use as specified by the BLM *Land Use Planning Handbook*. SRMAs are maintained by the BLM to ensure that lands that have high potential for recreational activity, high resource value, or public concern are protected to maintain the quality of these resources (BLM 2005). The Kramer-Cal City 115 kV Subtransmission Line alignment in Kern County crosses through the El Paso/Rand SRMA for 1.3 miles and directly along the SRMA for 2.8 miles; in San Bernardino County, it crosses through the Red Mountain SRMA for 2.6 miles and is adjacent to the SRMA for 3.3 miles.

The BLM has a designated OHV area north of Rudnick Boulevard, which offers space for riding off-highway vehicles on a variety of terrain through the California desert landscape. The Kramer-Cal City subtransmission line would be adjacent to this OHV area for 3 miles within and along the El Paso/Rand SRMA.

TABLE 3.16-1
RECREATION AREAS AND FACILITIES WITHIN 5 MILES OF THE PROJECT

Recreational Area/ Facility	Managing Agency	Nearest Project Component Site or Alignment	Distance from Nearest Project Component Site/Alignment
El Paso/Rand Special Recreation Management Areas (SRMA)	U.S. Bureau of Land Management (BLM)	Kramer–Cal City 115 kV Subtransmission Line	Alignment Crosses Area
Red Mountain SRMA	BLM	Kramer–Cal City 115 kV Subtransmission Line	0.2 miles
West Mojave Desert Ecological Reserve	California Department of Fish and Wildlife (CDFW)	Kramer–Cal City 115 kV Subtransmission Line	Alignment is Adjacent to Area
Fremont Valley Ecological Reserve	CDFW	Kramer–Cal City 115 kV Subtransmission Line	Alignment Crosses Area
California City Memorial Park	California City	Cal City–Edwards-Holgate 115 kV Subtransmission Line	0.2 miles
California City Central Park	California City	Kramer–Cal City 115 kV Subtransmission line and Distribution Underbuild	1.0 mile
California City Designated Trail	California City	Cal City–Edwards-Holgate 115 kV Subtransmission Line	Alignment Crosses Area
Borax Bill Park	California City	Kramer–Cal City 115 kV Subtransmission line and Distribution Underbuild	300 feet
Galileo Hill Park	California City	Kramer–Cal City 115 kV Subtransmission line and Distribution Underbuild	0.9 miles
I Park	California City	Kramer–Cal City 115 kV Subtransmission line and Distribution Underbuild	1.6 miles
H Park	California City	Kramer–Cal City 115 kV Subtransmission line and Distribution Underbuild	2.3 miles
California City Designated Off-Highway Vehicle Roads	California City	Kramer–Cal City 115 kV Subtransmission line	Alignment is Adjacent to Area
Balsitis Park	California City	Kramer–Cal City 115 kV Subtransmission line	1.8 miles
Equestrian Trail	California City	Kramer–Cal City 115 kV Subtransmission line	0.3 miles
North Edwards Park	Kern County Parks and Recreation	Cal City–Edwards-Holgate 115 kV Subtransmission line	1.0 mile
Boron Park	Kern County Parks and Recreation	Kramer Substation and Kramer–Cal City 115 kV Subtransmission line	3.2 miles
Tierra del Sol Golf	Privately Owned	Holgate Switchyard	0.8 miles
Silver Saddle Ranch and Club	Privately Owned	Kramer–Cal City 115 kV Subtransmission line and Distribution Underbuild	1.2 miles
Cal City MX Park	Privately owned	Kramer–Cal City 115 kV Subtransmission line and Distribution Underbuild	0.2 miles

SOURCES: Kern County Parks and Recreation 2024; City of California City 2009, 2015; CDFW 2024a, 2024b; SCE 2023



SOURCES: ESA, 2023; SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.16-1
Recreation Facilities

National Park Service

Three national parks managed by the National Park Service are located within San Bernardino County: the Mojave National Preserve and parts of Joshua Tree National Park and Death Valley National Park (San Bernardino County 2014). Death Valley National Park is the closest, at approximately 47 miles east of the northeastern corner of the Kramer–Cal City 115 kV Subtransmission Line alignment. Additional federal lands in San Bernardino County managed by the U.S. Forest Service include the Angeles and San Bernardino national forests, approximately 45 miles south of the Project, and offer a variety of recreational activities to residents (San Bernardino County 2014).

3.16.1.2 State Recreation Resources

California Department of Fish and Wildlife Reserves

There are two California Department of Fish and Wildlife (CDFW) ecological reserves near the Project that are used for recreation. These are Fremont Valley Ecological Reserve (ER) in Kern County and The West Mojave Desert ER in San Bernardino County. The Fremont Valley ER is 4,100 acres and offers recreational opportunities such as wildlife viewing (CDFW 2024a). The West Mojave Desert ER is 18,000 acres and offers wildlife viewing, hiking, and seasonal hunting opportunities (CDFW 2024b). The Kramer–Cal City Subtransmission Line alignment crosses approximately 0.1 mile through the Fremont Valley ER and would be adjacent to the West Mojave Desert Ecological Reserve for approximately 0.3 miles, as depicted on Figure 3.16-1.

California Department of Parks and Recreation

The California Department of Parks and Recreation helps to preserve the state's biological diversity, protect its natural and cultural resources, and provide opportunities for outdoor recreation. The department manages several public parks within San Bernardino County, including the Silverwood Lake State Recreational Area (SRA), the Providence Mountain SRA, the Chino Hills SRA, and Wildwood Canyon (San Bernardino County 2014). The closest state park is Red Rock Canyon State Park, which features scenic desert cliffs, buttes, and spectacular rock formations. Red Rock Canyon State Park consists of 27,000 acres within the Mojave Sector of the Tehachapi District and is located along State Route 14 in Kern County, approximately 15 miles north of the Cal City Substation.

3.16.1.3 Local Recreation Resources

Kern County

Kern County Parks and Recreation Department manages eight recreational park facilities throughout the county. Recreational opportunities found at these parks include lake-fishing, jet-skiing, boating, camping, picnicking, bicycling, basketball, recreational vehicle (RV) and tent camping, hiking, motorcross driving, windsurfing, whitewater rafting, and kayaking (Kern County Parks and Recreation 2023). The closest park is Tehachapi Mountain Park, which is approximately 27 miles west of Cal City Substation. The Silver Saddle Ranch is a private recreational area in California City approximately 1.2 miles north of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment.

Additionally, there are communities of North Edwards and Boron in unincorporated parts of the county. North Edwards Park is located approximately 1 mile from the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment and has recreational facilities such as a playground and picnic tables. Boron Park is 3.2 miles from Kramer Substation.

San Bernardino County

The San Bernardino County Regional Parks Department manages and maintains nine regional parks throughout San Bernardino County totaling approximately 8,000 acres in diverse settings, including metropolitan areas, mountains, and deserts. Recreational opportunities found at these regional parks include lakes for fishing, sheltered group picnic facilities, RV and tent camping, and swim complexes with water slides, water play parks, and playgrounds. The closest regional park is Calico Ghost Town Regional Park, 39 miles east of the Kramer–Cal City Subtransmission Line alignment (San Bernardino County 2024; San Bernardino County Regional Parks Department 2024).

California City

There are several parks in California City that are adjacent to the Project alignments, such as Borax Bill Park and Station, which contains a limited number of overnight campsites, power connections for recreational vehicles, day parking, a picnic area, and shower facilities. Borax Bill Park and Station connects to an extensive network of OHV trails. The park is adjacent to approximately 0.3 miles of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment. Other parks and recreational facilities managed by the city include California City Central Park, Cal City Memorial Park, Tierra del Sol Golf Course, Balsitis Park, Galileo Hill Park, I Park, H Park, and the California City Equestrian Trail (City of California City 2009).

The OHV routes extend outside the designated OHV areas in parts of California City. These were roads that were once planned to be used by residents but have become travel routes, unpaved OHV roads, and City of California City designated trails. The Kramer–Cal City 115 kV Subtransmission Line alignment runs adjacent to Borax Bill Park and Station, which serves as an entryway to the OHV recreation area. Furthermore, the Kramer–Cal City subtransmission alignment would run along Rudnick Boulevard, which is a portion of the California City designated trail for 7 miles. There are over 1,800 miles of combination use roads and 33.5 miles of designated OHV trails throughout California City (City of California City 2024).

Another recreational facility near the Project area is an equestrian trail directly adjacent to the Kramer–Cal City 115 kV Subtransmission Line alignment for 1.8 miles and the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment for 0.3 miles. This trail parallels 90th Street and Hacienda Boulevard (SCE 2023).

3.16.2 Regulatory Setting

3.16.2.1 Federal

Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) of 1976 defines the mission for the conservation of federally managed land, which is to manage public land for multiple uses while conserving natural, cultural, and historical resources. Furthermore, Section 601 of the FLPMA designates the California Desert Conservation Area (CDCA) as a management area in which portions are managed by the BLM. The CDCA serves as a land-use guide for the management of the public lands designated in the FLPMA (BLM 2014).

California Desert Conservation Area

The goal of the California Desert Conservation Area (CDCA) Plan is to provide for the use of the public lands and resources of the CDCA, including economic, educational, scientific, and recreational uses, in a manner that enhances wherever possible—and which does not diminish, on balance—the environmental, cultural, and aesthetic values of the desert and its productivity (BLM 2022). FLPMA directed management of public lands in the United States and Section 601 gave direction for the CDCA. The CDCA Plan affirms its goals to ensure that recreational needs are met, and recreational facilities are maintained. These goals are listed in the Recreation Element. The CDCA Motor Vehicle Access Element encourages the designation and management of motor vehicle access routes to minimize harm to the desert resources and users (BLM 2022). The entire Project and alternatives would be located within the CDCA Plan area.

Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) is a collaborative effort between the California Energy Commission, CDFW, BLM, and the U.S. Fish and Wildlife Service (USFWS), to help provide effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects (BLM 2016). The DRECP is focused on 22.5 million acres on public and private lands across Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties. The DRECP amends the 1980 CDCA Plan and serves as a habitat conservation plan under Section 10(a)(1)(B) of the federal Endangered Species Act. The Project sites and alignments are entirely within the DRECP area.

As part of the DRECP effort, BLM prepared a Land Use Planning Amendment (LUPA) that amends the CDCA Plan applicable to BLM-managed public lands, some of which are proposed for Project uses (BLM 2016). This LUPA identified and mapped areas for renewable energy development and areas for long-term natural resource conservation, consistent with the FLPMA multiple-use (including recreational uses among others) and sustained yield requirements. Conservation and Management Actions (described in Section 3.4, *Biological Resources*) apply to all projects[1] throughout the CDCA as outlined in the approved DRECP LUPA (BLM 2022). The CDCA recognizes there is a close correlation between environmental quality and the quality of a

[1] In this context “all activity” means all discretionary actions approved by BLM whether BLM initiated or applicant driven.

recreational experience. Resource oriented recreation such as sightseeing, camping, hiking, backpacking, and mountain climbing tend to depend on an unspoiled natural setting for a rewarding experience. Public lands managed for allowable uses are maintained in part through the conservation management actions upheld for the use designation. Management actions have been established to maintain the quality of these natural areas. Conservation areas within BLM land under the LUPA for the DRECP include existing, modified, and new Areas of Critical Environmental Concern (ACECs). Portions of the Project would fall within the Fremont–Kramer ACEC and the Desert Tortoise Research Natural Area ACEC.

Wilderness Act of 1964

The Wilderness Act of 1964 gave Congress the authority to designate wilderness areas. The law defines wilderness and grants management responsibilities to the USFWS, National Park Service, BLM, and U.S. Forest Service to cooperatively manage over 800 wilderness areas (USFWS 2021). The Project has components that would border or cross through land managed by these agencies.

3.16.2.2 State

California Department of Fish and Wildlife/ Fish and Game Code

As discussed in Section 3.4, *Biological Resources*, CDFW administers a number of laws and programs designed to protect fish and wildlife resources under the California Fish and Game Code, such as the California Endangered Species Act (Fish and Game Code Section 2050 et seq.), Fully Protected Species (Fish and Game Code Sections 3511, 4700, 5050, and 5515), the Native Plant Protection Act (Fish and Game Code Sections 1900–1913), and the Lake and Streambed Alteration Agreement Program (Fish and Game Code Sections 1600–1616). CDFW also manages public land including the West Mojave Desert ER and the Fremont Valley ER, which are adjacent to the Kramer–Cal City 115 kV Subtransmission Line alignment. Use of these lands, including managed recreational hunting, is subject to conditions and restrictions identified in the California Waterfowl, Upland Game, and Public Use of Department Lands Regulations, which is based on the Fish and Game Code and Title 14 of the California Code of Regulations (CDFW 2024c).

3.16.2.3 Local

Pursuant to CPUC General Order 131-D, the CPUC has exclusive jurisdiction over the siting, design, and construction of the Project; therefore, the Project is not subject to local discretionary regulations. However, for informational purposes, the goals and policies of local general plans and other planning documents pertaining to recreation that would otherwise be relevant to the Project are described below.

Kern County

Kern County General Plan

The following policies from the Kern County Land Use, Open Space, and Conservation Element of the County General Plan pertain to recreation (Kern County 2009).

> ***Policy 4:*** The provision of parks and recreational facilities of varying size, function, and location to serve County residents will be encouraged. Special attention will be directed to providing linear parks along creeks, rivers, and streambeds in urban areas.

Policy 5: Seek to provide recreational facilities where deficiencies have been identified.

San Bernardino County

San Bernardino County Policy Plan

The following policies from the Natural Resources Element of San Bernardino County's County Policy Plan pertain to recreation (San Bernardino County 2020).

> ***Policy NR-3.1: Open space preservation.*** We regulate land use and coordinate with public and nongovernmental agencies to preserve open space areas that protect natural resources, function as a buffer against natural hazards or between land uses, serve as a recreation or tourist destination, or are central to the identity of an unincorporated community.
>
> ***Policy NR-3.3: Management of designated areas.*** We coordinate with public and nongovernmental agencies to sustainably manage and conserve land within or adjacent to locally-, state-, or federally designated open space or resource conservation areas.
>
> ***Policy NR-3.6: Regional park land.*** We coordinate with other jurisdictions and agencies to provide regional park land. We prioritize the maintenance and improvement of existing County parks and trails over their expansion or creation of new facilities.
>
> ***Policy NR-3.10: Off-highway vehicle areas.*** In areas under the County's land use authority, we require new or expansion of existing commercial off-highway vehicle (OHV) areas to be situated and buffered to minimize effects on nearby residential uses, military activity, and environmentally sensitive areas.

City of California City

City of California City General Plan

The Open Space and Conservation Element of the City of California City General Plan contains the following policies that pertain to recreation (City of California City 2009).

> ***Policy:*** Develop open-space corridors along utility easements, drainages, slopes, and other natural features, whenever possible.
>
> ***Policy:*** Developers shall dedicate appropriate lands or pay in-lieu fees for parkland acquisition as required by the City's Land Division Code. Construction and development of parkland could be considered as an additional amenity during negotiations for a development agreement.

California City Parks and Recreation Master Plan

The City of California City Parks and Recreation Master Plan identifies existing park and recreational resources and the city's need for additional open space and parkland to adequately serve its community. The plan provides policy direction to guide future recreational development in the City (City of California City 2015).

3.16.3 Applicant Proposed Measures and Best Management Practices

3.16.3.1 Applicant Proposed Measures

Southern California Edison (SCE) has identified the following Applicant proposed measure (APM) to minimize direct impacts on recreational resources from the Project. APM REC-1 relates to recreational access during construction. In addition, APM AES-1, proposed to reduce aesthetics impacts, would also reduce visual effects and other aesthetics-related impacts on recreation. The measure requires subtransmission structures to have reduced glare and color contrast (see APM AES-1 in Section 2.12.1). The impact analysis assumes that the APMs would be implemented as part of the Project to reduce impacts on recreation resources and related aesthetic considerations as discussed below.

- **APM REC-1:** When temporary closures to recreational areas are necessary for construction activities, SCE will coordinate those closures with recreational facility owners.

3.16.3.2 Best Management Practices

SCE has also proposed implementation of best management practices (BMPs) that are based on California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook*; however, the BMPs are not applicable to recreation resources.

3.16.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, the Project would result in a significant recreation impact if it would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

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

The CPUC has identified additional impact criteria specific to the types of projects evaluated by the CPUC to be considered in addition to the criteria identified in Appendix G of the CEQA Guidelines (CPUC 2019). Regarding recreational resources, the Project would also result in a significant recreation impact if it would:

c) Reduce or prevent access to a designated recreation facility or area;

d) Substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas; or

e) Damage recreational trails or facilities.

3.16.5 Direct and Indirect Effects

3.16.5.1 Approach to the Analysis

This section discusses potential impacts on recreation resources. The Project would be regulated by the various laws, regulations, and policies as described in Section 2.11, *Permits and Approvals*, as well the applicable regulations related to recreation, as described above in Section 3.16.2. It is assumed that the Project would comply with applicable federal and state laws and regulations, and governing agencies and institutions would continue to enforce applicable requirements to the extent that they do so currently.

3.16.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would 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.

Operation of the Project would not 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. (*No Impact*)

Once operational, there would be no closures of recreational facilities or lands used for recreational purposes, except in limited circumstances in the event that a pole would need to be replaced or some other equipment would require repair, such that public safety considerations precluded use of a park or land used for recreational purposes. For these reasons, it is unlikely that operation or maintenance of the Project would result in any impact on recreational facilities such that substantial deterioration would occur. The operation and maintenance (O&M) activities that SCE would conduct for the Project are the same as it already conducts for its existing facilities. Such activities may include, but are not limited to repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance.

SCE would also conduct emergency repairs in response to emergency situations, such as damage resulting from high winds, storms, fires, other natural disasters, and accidents. Repairs could include replacement of downed structures or lines, or re-stringing conductors, which may be needed at any time. These repairs, emergency or routine, would take place within the substations and throughout SCE rights-of-way (ROWs). CPUC General Order 165 requires that subtransmission overhead facilities be inspected at least once per year. As discussed, the Project would not add a substantial amount of new O&M activity. Although the Project would accommodate planned growth, it would not directly increase the demand for recreational facilities. For these reasons, direct and indirect effects related to the increased use of existing neighborhood and regional parks would not occur during Project operations and there would be no impact on recreation resources under this criterion.

Impact 3.16-1: Project construction could increase the use of existing neighborhood and regional parks or other recreational facilities. (*Less than Significant*)

The usage of recreational facilities is often directly proportional to the number of people who live near the facilities. If the population were to increase within the vicinity of recreational facilities during construction, it can be assumed that the usage of those facilities could temporarily increase as well. Conversely, if the amount of available recreational facilities is decreased during construction, then the remaining facilities may see increased usage due to fewer recreation options being available to the population.

Section 3.14, *Population and Housing*, demonstrates that the Project would not significantly increase the population directly or indirectly. Furthermore, Section 3.15, *Public Services*, shows that the Project would not generate a need for more parks to adequately accommodate a change in population or usage of parks.

The construction phase of the Project is planned to last for approximately 24 months with a maximum of 140 construction personnel on-site at any given time throughout the Project's construction. Although construction personnel may use parks during their lunch breaks or non-working hours, the limited usage of the recreational facilities by construction personnel would not result in accelerated physical deterioration of these parks. Therefore, potential impacts on recreational facilities caused by construction personnel use of those facilities would be **less than significant**.

During construction, it is anticipated that some recreational facilities, parks, or public lands used for recreational purposes may temporarily close or have access limitations due to the Project's staging, storage, or construction activity. Borax Bill Park, for example, would temporarily be off limits to the public during construction of a segment of the proposed new Kramer–Cal City subtransmission line. Although it is possible that this closure could result in a more dispersed pattern of OHV use in the region, the closure would be temporary, limited to the locations and time frame needed to safely install poles, string the subtransmission line, and secure the associated components. As a result, the proposed activities could indirectly affect recreational uses. However, given the abundant routes and options available, these uses would be dispersed over the 1,800 miles of combination use roads and 33.5 miles of designated OHV trails throughout California City and adjacent BLM lands. Therefore, the Project's temporary closure of some trails would not be expected to result in substantial physical deterioration of other recreational OHV trails in the region. As stated in Chapter 2, *Project Description,* Section 2.8.2, *Demobilization and Site Restoration*, public trails (if damaged during construction) would be restored to their approximate preconstruction condition to the extent feasible after the completion of construction. As part of the Project, SCE has committed to restoring land temporarily disturbed during construction; therefore, the potential impact on the recreational trails would be **less than significant**.

Mitigation: None required.

Criterion b) Whether the Project would include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Recreational facilities are not included as components of the Project. Additionally, the Project would not indirectly induce a substantial population increase and would not require the construction or expansion of additional recreational facilities. Coupled with the fact that the Project would not induce unplanned growth (as discussed in Section 3.14) or include new recreational facilities, the Project would not result in any need for construction of additional recreational facilities. Therefore, no impact would occur due to construction or operation of the Project. (*No Impact*)

Criterion c) Whether the project reduces or prevents access to a designated recreation facility or area.

Impact 3.16-2: The Project would reduce or prevent access to designated recreation facilities and areas. (*Less than Significant*)

Construction

Construction of the Project would require temporary, partial closures of designated recreation facilities. As described in Section 2.7.15, construction of the entire Project is estimated to take place over approximately 24 months. However, only the facilities that are within or adjacent to the Project alignments would need to be closed to the public during construction of those segments. These include portions of the OHV-designated area northeast of Cal City Substation, the equestrian trail that runs along the subtransmission line alignment north of Cal City Substation, segments of the California City Designated Trail on Rudnick Boulevard and Twenty Mule Team Parkway, Borax Bill Park, portions of El Paso/Rand SRMA, portions of Red Mountain SRMA, sections of the Fremont Valley ER, sections of West Mojave Desert ER, and any BLM land adjacent to the Project alignments. All these closures or access limitations would be temporary and would occur only for the extent of time that construction would occur in that specific location.

As discussed in Section 3.16.2, *Regulatory Setting*, the CDCA Motor Vehicle Access Element encourages the designation and management of motor vehicle access routes to minimize harm to the desert resources and users. It is not anticipated that construction would alter trail use patterns, such that goals of the CDCA would be compromised. California City contains over 1,800 miles of available combination-use dirt roads and trails and 33.5 miles of designated OHV trails throughout the city. Closures or access limitations that would occur to the OHV-designated area and the California Designated Trail would be minimal in comparison to the amount of land that would remain available for OHV use. These closures would affect OHV trails along Twenty Mule Parkway and Rudnick Boulevard, because the Kramer–Cal City subtransmission line would be directly adjacent to these trails. The closures, however, would occur only on limited portions of this large area of available land and the access limitations would be temporary, so construction of the Project would not impair or alter OHV use in the area. Due to the linear nature of the proposed subtransmission lines, construction crews would work along the Project alignments

and would enter and demobilize as construction of the subtransmission lines progress. When construction in that segment of the alignment would be completed, access to the recreation facility would be restored.

Borax Bill Park serves as a convergence point for many of the OHV trails in the area and a linkage to BLM land used for recreational purposes, so its closure could directly affect access to the OHV trails in the area if no other points of entry existed and the closure was ongoing. Proposed work areas are on the opposite side of the roadway across from Borax Bill Park. However, if needed any closure would be limited to up to a few days to safely construct the applicable part of the new Kramer–Cal City subtransmission line and there are numerous other trails and public access places in the region that OHV riders could utilize or convene at during any temporary closure of this park.

Similarly, an equestrian trail runs adjacent to the Project alignment north of and adjacent to Cal City Substation along Hacienda Boulevard. Due to the proximity of the trail to the Project, closure of the trail would need to occur for the extent of construction in that area, which may be for a period of up to several weeks. As with the OHV trails, at the completion of construction of that portion of the double-circuit subtransmission lines, the Kramer–Cal City subtransmission line, and the Cal City Substation, the trail would be reopened for use.

The portions of El Paso/Rand SRMA, Red Mountain SRMA, Fremont Valley ER, and West Mojave Desert ER that are crossed or are adjacent to the Kramer-Cal City 115 kV Subtransmission Line alignment would be closed for the duration of construction occurring within that segment of the subtransmission lines. The SRMAs are lands that are federally funded and managed by the BLM; the ERs are state funded and managed by CDFW. The subtransmission line alignment would run adjacent to the recreational resources and would only require the partial closure of these facilities. The Red Mountain SRMA would require a more substantial closure in the location along U.S. 395 due to the subtransmission line alignment in that area. However, there are other places such as Red Rock Canyon and other public lands that would remain open and could be accessed instead of these closed portions of the SRMA. Furthermore, these closures would be temporary, lasting for up to several weeks at any one location, and these facilities would be reopened at the conclusion of construction of a given area.

SCE proposes to implement APM REC-1, which states: “When temporary closures to recreational areas are necessary for construction activities, SCE will coordinate those closures with recreational facility owners.” This APM would allow facility managers and owners to prepare for closures and alert members of the community to other options while the facilities would be closed. Construction of the entire Project is anticipated to last for 24 months, but due to its linear nature, closures would only occur for as long as it takes for construction crews to move past the recreational facilities they would be working in or adjacent to. Because closures or access limitations would be temporary, SCE would coordinate closures ahead of time with facility owners, traffic controls would be implemented, and access to recreational facilities would be restored in a timely manner after construction is completed. Therefore, there would be a **less-than-significant** impact on recreation resources associated with construction.

Operation

As previously stated, O&M activities associated with the Project would be similar to those already performed by SCE for existing facilities. Closures to recreational facilities would be temporary and limited to locations needed for inspection, repair, and maintenance of the facility. SCE already performs O&M activities for the existing substations and their associated source lines and infrastructure, so the Project would result in a minimal increase in O&M activities with increased maintenance and inspection trips for the new subtransmission lines. The closure of recreational facilities would not be required once the Project facilities become operational, with rare exceptions in the event of needed repairs. For these reasons, operation and maintenance of the Project would constitute a **less-than-significant** impact on recreation resources.

Mitigation: None required.

Criterion d) Whether the project would substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas.

Although the Project would result in impacts on biological, cultural, and geologic resources, those impacts would not rise to the level that would substantially change the character of a recreational facility or area. For discussion of the Project impacts relative to biological, cultural, and geologic resources, see Sections 3.4.5.2, 3.5.5.2, and 3.7.5.2, respectively.

Impact 3.16-3a: Project construction would alter the character of a recreational area by reducing the scenic characteristics that contribute to the value of recreational facilities or areas. (*Less than Significant*)

As discussed in additional detail in Section 3.1, *Aesthetics*, under existing conditions there are unimpeded open views of the desert landscape and distant surrounding mountains in locations proposed for Project construction. The Project's construction would involve the presence and use of equipment and materials in locations with high visual quality, as described in Section 3.1, *Aesthetics*. Subtransmission poles and other support structures would be erected within a scenic desert landscape, some of which is utilized for recreational purposes. However, the scenic characteristics of these recreational areas would not be substantially altered during construction. Although some industrial elements would be introduced into the visual landscape, the subtransmission structures would not completely obstruct the views. Scenic views would remain generally open, and the characteristics of recreational resources would not be substantially diminished. The impact associated with construction would be **less than significant**.

Mitigation: None required.

Impact 3.16-3b: Project operation would substantially alter the character of a recreational area by reducing the scenic characteristics that contribute to the value of recreational facilities or areas. (*Significant and Unavoidable*)

The Project would be visible from the equestrian trail that runs adjacent to the Project alignment north of and adjacent to Cal City Substation along Hacienda Boulevard. However, given the

existing electrical infrastructure in the vicinity of the trail, the recreational experience of horseback riders would not be substantially changed, and no associated impact would result.

As discussed in Section 3.1, *Aesthetics* (see Impact 3.1-2c), the visual quality of recreational facilities would be reduced along OHV routes and in public lands that are OHV designated areas where a new view of the proposed overhead subtransmission lines and structures would be introduced in the places that have no such features under existing conditions. The presence of poles and subtransmission lines would reduce the visual quality and alter the scenic character of recreational facilities such as the OHV designated area west of Borax Bill Park and the California City OHV trail, as these Project components would introduce a more industrial character to the predominantly open view. According to public input received during the preparation of the City of California City Parks and Recreation Master Plan, citizens of California City place a high value on open space and natural areas (City of California City 2015). The aesthetics analysis (provided in Section 3.1) determined that, given the visibility of the steel subtransmission poles associated with the Project, the distinctive natural scenic quality of the view would be diminished at these recreational locations.

APM AES-1 would be implemented to ensure that subtransmission infrastructure be non-reflective and non-refractive to help reduce glare and minimize contrast with the surrounding environment. As discussed in Section 3.1.9.3 under Impact 3.1-2c for Key Observation Points (KOPs) 2 and 3 and BLM-suggested KOP 3, the visual quality and scenic character would be reduced due to the presence of the new subtransmission structures. Although KOP 3 is from the perspective of a residential area, it is within 1 mile of the California City designated trail (Figure 3.16-1), which is commonly used for off highway vehicle access. Therefore, the potential impact on the scenic characteristics of this recreational area could substantially change the recreational experience of OHV enthusiasts, which would be significant.

Implementation of Mitigation Measure 3.1-2c is recommended to supplement APM AES-1 to include requirements for treating surfaces of subtransmission infrastructure with appropriate colors, finishes, and textures to reduce the visual impact (as described in Section 3.1).

> **Mitigation:** Implement Mitigation Measure 3.1-2c, *Treat Surfaces with Appropriate Colors, Finishes, and Textures* (see Impact 3.1-1c)
>
> **Significance after Mitigation:** Implementation of Mitigation Measure 3.1-2c would lessen impacts west of Borax Bill Park and the California City OHV trail by reducing the visual contrast created by new subtransmission poles and lines, but not to a less-than-significant level. The impact would be significant and unavoidable.

Criterion e) Whether the project would damage recreational trails or facilities.

Impact 3.16-4: The Project could damage recreational trails or facilities. (*Less than Significant*)

Construction

The Kramer–Cal City 115 kV Subtransmission Line alignment would be adjacent to or cross into portions of the OHV-designated area northeast of Cal City Substation, the equestrian trail north of

Cal City Substation, segments of the California City Designated Trail on Rudnick Boulevard and Twenty Mule Team Parkway, Borax Bill Park, portions of El Paso/Rand SRMA, portions of Red Mountain SRMA, sections of Fremont Valley ER, and West Mojave Desert ER. As stated in Chapter 2, *Project Description*, Section 2.8.2, *Demobilization and Site Restoration*, public trails (if damaged during construction) would be restored to their approximate preconstruction condition to the extent feasible after the completion of construction. Restoration would include construction debris removal, construction material (including trash and packaging) removal, removal of stationary equipment, and revegetation in sensitive habitats. When construction is completed, SCE would return the site contours and restore the trails to preconstruction conditions. Therefore, the impact on recreational trails or facilities would be **less than significant**.

Operation

The Project's O&M activities would occur within SCE's existing or new ROWs and maintenance of the facilities would not require the closure of any recreational trails or facilities in the Project footprint. However, the Project would include new access roads to conduct O&M tasks, which would alter the terrain of recreational areas. Furthermore, the Project would require some additional O&M activities to inspect, repair, and maintain the infrastructure of the Project, but these O&M activities would not occur very frequently, nor would they require the closure of recreational facilities. OHV trails may be affected because of small temporary closures or access limitations for O&M activities. However, other open land would remain available to accommodate demand for recreational activities as O&M occurs. The impact related to alteration of trails as a result of the new access roads for O&M and occasional minor access limitations to maintain the ROW, subtransmission lines, structures, and other Project components would be **less than significant**.

Mitigation: None required.

3.16.5.3 Cumulative Effects Analysis

The geographic scope for the cumulative impacts associated with use of recreational resources includes the area surrounding the Project sites and alignments within a 5-mile radius. The geographic scope for the cumulative impacts associated with preventing access to designated recreation facilities is the area where both the Project and cumulative project(s) would limit access to a designated recreation facility. The geographic scope for the cumulative impacts associated with altering the character of a recreational area is the area where both the Project and cumulative project(s) may be visible from a recreational resource. This analysis assumes full build-out of the projects listed in Section 3.0.3, *Approach to the Cumulative Impact Analysis*. Because decommissioning would not be part of the Project, the temporal scope for analysis of cumulative effects would be permanent. The projects listed in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, include solar energy facility projects, the SCE battery energy storage system project, transmission projects, commercial cannabis production facilities, and other projects. These projects, as well as other future developments, would be subject to the applicable city and/or county planning processes and state environmental review on a project-by-project basis.

Criterion a)

Operation of the Project would not increase population or otherwise result in an impact associated with an increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Therefore, there would be no incremental impact that would be cumulatively considerable, and no cumulative impacts on recreational resources would occur in the operation and maintenance phase. *(No Impact)*

Impact C.3.16-1: The Project construction impact of increasing the use of existing neighborhood and regional parks or other recreational facilities would not be cumulatively considerable. (*Less than Significant*)

The Project would result in potential less-than-significant impacts on recreational facilities associated with increased use of the facilities by construction personnel. Cumulative projects that may be constructed in the same time frame as the Project could also result in similar temporary impacts. It is expected that the respective agencies/departments associated with the cumulative projects would notify residences of any planned closures adjacent to recreational areas when construction work would be performed. Due to the vast areas that would remain open and available for public recreation, such temporary Project impacts, when considered with the impacts associated with the cumulative projects, would not rise to the level of being cumulatively considerable. The cumulative impact would be less than significant.

Mitigation: None required.

Criterion b)

As concluded under Criterion b) in Section 3.16.5.2, *Direct and Indirect Effects of the Project*, the Project would have no impact on recreational resources as there would not be a substantial population increase and would not require the construction or expansion of additional recreational facilities. Therefore, there would be no incremental impact that would be cumulatively considerable, and no cumulative impacts on recreational resources would occur associated with the Project. *(No Impact)*

Criterion c)

Impact C.3.16-2: The Project impact of reducing or preventing access to designated recreation facilities and areas during construction or operation would not be cumulatively considerable. (*Less than Significant*)

The recreational facilities that would be crossed by or are near the Project alignment that could be temporarily closed due to construction or maintenance activities include portions of the OHV-designated area northeast of Cal City Substation, the equestrian trail that runs north and south of Cal City Substation, segments of the California City Designated Trail on Rudnick Boulevard and Twenty Mule Team Parkway, Borax Bill Park, portions of El Paso/Rand SRMA, portions of Red Mountain SRMA, sections of Fremont Valley ER and West Mojave Desert ER, and BLM land immediately adjacent to the Project alignments. Temporary closure of these facilities due to the Project would have a less-than-significant impact.

Out of these recreational facilities, only the equestrian trail that runs north and south of Cal City Substation would have the potential to be affected by both the Project and a cumulative project (i.e., the battery energy storage system, Cumulative Project 6). The battery energy storage system project could require a temporary closure to the equestrian trail if its power line to connect to Cal City Substation would be strung over the trail, which would result in a similar impact as the Project; however, given that any closures due to the Project and the battery energy storage system project would be temporary, the Project impact would not rise to the level of being cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion d)

Impact C.3.16-3: The Project impact of alteration of the character of a recreational area through reduction of scenic characteristics that contribute to the value of recreational facilities or areas would not be cumulatively considerable. *(Less than Significant*)

Construction activities associated with the proposed subtransmission lines and support structures could alter the scenic character of lands used for recreational purposes, which would constitute a less-than-significant impact. In addition, operation of the Project would introduce industrial components within expansive natural surroundings creating a high level of visual change in the desert lands that are used for recreational purposes in the vicinity of Borax Bill Park and the California City OHV trail, which would constitute a significant unavoidable impact.

Other cumulative projects identified in Table 3.0-1 could also include industrial features that could result in visual change near Project construction activities, including the Canni Land Cannabis Project (Cumulative Project 3) and the SCE Battery Energy System Storage project (Cumulative Project 6) near California City Memorial Park and the equestrian Trail, respectively; however, the Project construction impacts in those areas would not be cumulatively considerable. Only the Distribution Pappas 33 kV Line Project (Cumulative Project 3) is in the vicinity of Borax Bill Park and the California City OHV trail and it is part of the existing baseline in that area and would not cause a visible change relative to the baseline condition from the recreational resources. Therefore, the construction and operational impacts of the Project, including on desert lands that are used for recreational purposes in the vicinity of Borax Bill Park and the California City OHV trail, would not combine with the impacts of the other projects to the extent that they would be cumulatively considerable. Therefore, the cumulative impact would be less than significant.

Mitigation: None required.

Criterion e)

Impact C.3.16-4: The Project impact of damaging recreational trails or facilities would not be cumulatively considerable. (*Less than Significant*)

Construction and maintenance of the Project could damage a number of recreational trails and parks, resulting in a less-than-significant impact (see Impact 3.16-4). However, only the equestrian trail that runs north and south of Cal City Substation would have the potential to be

affected by both the Project and a cumulative project (i.e., the battery energy storage system). The battery energy storage system project could similarly damage the equestrian trail if its power line to connect to Cal City Substation would be strung over the trail; however, given that all public trails (if damaged during construction) would be restored to their approximate preconstruction condition to the extent feasible after the completion of Project construction, the Project impact would not rise to the level of being cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

3.16.6 References

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3.17 Transportation

This section evaluates the impacts of the Project on transportation. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to transportation.

3.17.1 Environmental Setting

3.17.1.1 Project Area

The Project area encompasses highways as well as regional, local, and access roadways that would be used during construction and operation and maintenance (O&M) activities. The Project area is generally bounded by local and regional roadways to the north and west, State Route (SR) 58 to the south, and U.S. Highway (U.S.) 395 to the east (see **Table 3.17-1** for roadways in the Project's vicinity). There are bicycle and public transit facilities in the Project's vicinity, as further described below.

3.17.1.2 Circulation System

Regional Roadways

U.S. 395 is a north-south U.S. interstate highway spanning over 1,300 miles, originating from a junction in the Mojave Desert at Interstate 5 in Hesperia, and a northern terminus at the Canada-U.S. border near Laurier, Washington. In the Project area, U.S. 395 is a two-lane highway and runs parallel to the Project's Kramer-Cal City 115 kV Subtransmission Line alignment for approximately 18.5 miles in San Bernardino County.

SR 58 is an east-west state highway with a length of approximately 241 miles, with an eastern terminus at Interstate 5 near Barstow and western terminus at U.S. 101 near Santa Margarita. At the Project area, SR 58 is a four-lane divided highway and intersects the Project's Cal City-Edwards-Holgate 115 kV Subtransmission Line alignment near the North Rosamond Boulevard ramp, approximately 7 miles north of the existing Edwards Substation.

SR 14 is a north-south state highway extending approximately 117 miles, with a northern terminus at U.S. 395 near Inyokern and a southern terminus at Interstate 5 near Granada Hills and Sylmar. Near the Project area, SR 14 is a four-lane divided highway and is approximately 8 miles west of the existing Cal City Substation. SR 14 would not intersect or be adjacent to any Project sites or alignments.

Local Roadways

As described in Chapter 2, *Project Description*, Section 2.7.1, *Access*, Project construction and O&M activities would consist of the use of unpaved and paved, public or private roadways located on public, private, and government lands. Southern California Edison (SCE) would acquire land rights to support the Project, as required. The existing named roadways that may be used to access and transport materials and equipment during the Project are presented below in **Table 3.17-1**.

TABLE 3.17-1
SUMMARY OF PROJECT AREA EXISTING ROADWAYS

Roadway	Jurisdiction/Ownership	Classification[a]	Physical Relationship to Project[b]
Kramer–Cal City 115 kV Subtransmission Line			
U.S. 395	Caltrans	Principal Arterial	Spanned
SR 58	Caltrans	Expressway/Freeway	Crossed
Pipeline Road	San Bernardino County	Local	Access Road
Farmington Road	San Bernardino County	Local	Access Road
Marshall Street	San Bernardino County	Local	Access Road, Crossed
Balsamo Road	San Bernardino County	Local	Access Road, Crossed
Locust Road/Seneca Road	San Bernardino County	Local	Access Road, Crossed
Rosewood Boulevard	San Bernardino County	Local	Access Road, Crossed
Fremont Peak Road	San Bernardino County	Local	Access Road, Crossed
Kramer Station Road	San Bernardino County	Local	Access Road, Crossed
Twenty Mule Team Parkway	San Bernardino County/City of California City	Major Collector	Crossed
Columbia Road	City of California City	Local	Crossed
Arcadia Street	City of California City	Local	Crossed
Temple Street	City of California City	Local	Access Road, Crossed
Baylor Street	City of California City	Local	Crossed
Churchill Street	City of California City	Local	Crossed
Occidental Street	City of California City	Local	Crossed
Tulane Street	City of California City	Local	Crossed
Pomona Street	City of California City	Local	Access Road, Crossed
Bucknell Road	City of California City	Local	Crossed
Brown Road	City of California City	Local	Crossed
Rutgers Road	City of California City	Local	Guard Site, Crossed
Antelope Drive West	City of California City	Local	Access Road, Crossed
Lincoln Boulevard	City of California City	Minor Arterial	Pull Site, Crossed
South Columbia Road	City of California City	Local	Pull Site, Crossed
Oldsmobile Boulevard	City of California City	Local	Crossed
Cadillac Boulevard	City of California City	Local	Crossed
Chrysler Drive	City of California City	Local	Crossed
Bill Street	City of California City	Local	Crossed

Roadway	Jurisdiction/Ownership	Classification[a]	Physical Relationship to Project[b]
Esse Boulevard	City of California City	Local	Crossed
Rudnick Boulevard	City of California City	Local	Spanned
Oscar Avenue	City of California City	Local	Crossed
156th Street	City of California City	Local	Crossed
155th Street	City of California City	Local	Crossed
152nd Street	City of California City	Local	Crossed
Virginia Boulevard	City of California City	Local	Crossed
140th Street	City of California City/Kern County	Local	Pull Site, Crossed
Randsburg Mojave Road	City of California City	Major Collector	Crossed
J Street	City of California City	Local	Crossed
130th Street	City of California City	Local	Crossed
C Street	City of California City	Local	Crossed
120th Street	Kern County	Local	Crossed
Elmer Circle	Kern County	Local	Crossed
115th Street	Kern County	Local	Crossed
114th Street	Kern County	Local	Spanned
111th Street	Kern County	Local	Spanned
110th Street	Kern County	Local	Crossed
90th Street	City of California City	Local	Access Road, Pull Site, Crossed
Hans Boulevard	City of California City	Local	Crossed
Lindbergh Boulevard	City of California City	Local	Access Road
Cal City–Edwards-Holgate 115 kV Subtransmission Line			
Hacienda Boulevard	City of California City	Major Collector	Spanned
Mendiburu Road	City of California City	Major Collector	Spanned
Proctor Boulevard	City of California City	Local	Crossed
Tamarack Avenue	Kern County/City of California City	Local	Crossed
Sandy Avenue (Aspen Avenue)	Kern County	Local	Spanned
California City Boulevard	Kern County	Principal Arterial	Spanned
125th Street	Kern County	Local	Crossed
Regent Avenue	Kern County	Local	Crossed
Rosewood Boulevard	Kern County	Local	Crossed
Dacre Avenue	Kern County	Local	Spanned
Joshua Avenue	Kern County	Local	Spanned
Desert View Avenue	Kern County	Local	Crossed
East Blair Avenue	Kern County	Local	Crossed
Mission Avenue	Kern County	Local	Crossed
Locust Avenue	Kern County	Local	Access Road, Crossed
Birch Avenue	Kern County	Local	Crossed
Elm Avenue	Kern County	Local	Crossed

Roadway	Jurisdiction/Ownership	Classification[a]	Physical Relationship to Project[b]
Leticia Avenue	Kern County	Local	Spanned
Suckow Road	Kern County	Local	Access Road, Pull Site, Crossed
Bernard Avenue	Kern County	Local	Crossed
Glendower Avenue	Kern County	Local	Crossed
Bellaire Avenue	Kern County	Local	Crossed
Lorraine Avenue	Kern County	Local	Pull Site, Crossed
Desert Sage Avenue	Kern County	Local	Spanned
S.R. 58	Caltrans	Expressway/Freeway	Crossed
Muroc Road	Kern County	Local	Spanned
North Rosamond Boulevard	Kern County	Local	Pull Site, Crossed
Castle Butte Drive	Kern County	Local	Crossed
La Mesa Street	Kern County	Local	Crossed
157th Street	Kern County	Local	Crossed
160th Street	Kern County	Local	Crossed
Fox Street	Kern County	Local	Spanned
Clement Street	Kern County	Local	Crossed
Lamel Street	Kern County	Local	Spanned
Davenport Street	Kern County	Local	Spanned
Clay Mine Road	Kern County	Major Collector	Crossed
Granada Street	Kern County	Local	Crossed
Gulf Street	Kern County	Local	Crossed
Flint Street	Kern County	Local	Crossed
Schultz Road	Kern County	Local	Pull Site, Crossed
Gephart Road	Kern County	Local	Pull Site, Crossed
Borax Road	Kern County	Local	Spanned

NOTES: Caltrans = California Department of Transportation.

a. Functional classification is used in determining eligibility for federal funding programs. The Federal Highway Administration identifies Functional Classification as a key item in transportation data. Streets and highways are grouped into classes according to the service they provide.
b. Spanned refers to a road adjacent to project elements that may be used for access and/or transport of materials and equipment. Crossed refers to a road that meets the definition of 'Spanned' and crosses at least one of the Project alignments. Pull Site or Guard Sites refers to a road that meets the definition of spanned or crossed and crosses at least either a proposed pull or guard site. Access Road refers to a segment of a road that is identified as an access road for the Project.

SOURCES: SCE 2023; Caltrans 2023.

3.17.1.3 Public Transit, Bicycle, and Pedestrian Transit Facilities

Public Transit Facilities

Kern Transit provides regional bus routes throughout the Project's vicinity connecting California City to the town of Mojave and the cities of Inyokern, Ridgecrest, Tehachapi, Bakersfield, Lancaster, and Rosamond. Three bus routes offer service toward the western end of the Project area: 230 Ridgecrest–Mojave, 240 Boron–Mojave, and 250 California City–Lancaster. One bus route, 240 Boron–Mojave, is an east-west route that crosses the Cal City-Edwards-Holgate 115 kV

Subtransmission Line alignment located along SR 58. Route 240 Boron–Mojave operates two times eastbound and three times westbound every Monday, Wednesday, and Friday.

Bicycle Facilities

The Project would be located within California Department of Transportation (Caltrans) Districts 8 and 9. Bicyclists are allowed on U.S. 395; however, bicyclists are prohibited along SR 58, particularly near the Project area (near the town of Mojave). There are no county-designated bikeways in the immediate vicinity of the Project, in either Kern County or San Bernardino County.

There are approximately 10 miles of existing bikeways within California City, including a 1-mile Class I[1] shared-use path adjacent to Poppy Boulevard and Class II[2] bicycle lanes on California City Boulevard, North Loop Boulevard, South Loop Boulevard, and Hacienda Boulevard. None of these bicycle facilities would be crossed by either of the Project's alignments.

Pedestrian Facilities

The Project's alignments are not anticipated to be along or in the immediate vicinity of managed pedestrian facilities critical to the local or regional circulation system. For example, there are pedestrian facilities such as sidewalks and pedestrian paths within California City; however, the Project's alignments would not be in close proximity or cross these facilities.

Transit and Rail Services

Union Pacific Railroad (UPRR) operates two branch lines near the Project: the Lone Pine Subdivision between Mojave and the community of Searles Valley, and the Oak Creek Industrial Lead between Mojave and the CalPortland Mohave Plant. Burlington Northern Santa Fe (BNSF) operates one main line near and within the Project area, the Mojave Subdivision, which parallels SR 58 connecting Bakersfield to Mojave. Neither the UPRR line nor the BNSF line provides passenger services. However, the Project alignments cross the BNSF line during construction, which is further discussed in the impact analysis below.

3.17.2 Regulatory Setting

As discussed in Chapter 2, *Project Description*, Section 2.4, *Overview of the Project*, the Project is a utility project that would add load-serving capacity in the Electrical Needs Area to serve current and long-term forecast electrical demand, improve system reliability, and improve system operational flexibility. Because the Project is a utility project that would not add permanent users to the roadways, the regulatory setting provided in this section focuses on policies and programs specific or applicable to the Project. Other policies relevant to transportation that may be present

[1] Class I bike paths provided a complete separate facility designed for the exclusive use of bicycles and pedestrians with minimal cross flows by motorists.

[2] Class I bike lanes provide a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross flows by pedestrians permitted.

for other types of projects, such as those that induce population growth or require an increase in operational procedures, are omitted in this analysis for brevity and clarity.

3.17.2.1 Federal

U.S. Department of Transportation

The U.S. Department of Transportation (DOT) administers numerous laws and regulations that regulate California roadways and interstate commerce. The department is responsible for planning and coordinating federal restoration projects while setting safety regulations for all major modes of transportation. There are no federal laws, regulations, or policies that would be applicable to transportation, traffic, and circulation for the Project.

Code of Federal Regulations

Code of Federal Regulations (CFR) Title 49, Subtitle B includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways.

Hazardous Materials Transportation Act of 1974

The Hazardous Materials Transportation Act of 1974 directs DOT to establish criteria and regulations regarding safe storage and transportation of hazardous materials. In particular, these regulations address transportation of hazardous materials, types of materials defined as hazardous, and the marking of vehicles transporting hazardous materials (49 CFR 171.1 et seq.). Additionally, the Motor Carrier Safety Regulations (49 CFR 390.1 et seq.) specify safety considerations for the transport of hazardous materials over public roadways. Section 3.9, *Hazards and Hazardous Materials*, addresses the transportation of hazardous materials, types of materials defined as hazardous, and the treatment of hazardous materials associated with the Project.

Federal Aviation Administration Regulations (14 CFR 77.9)

The Federal Aviation Administration (FAA) regulates aviation at regional, public, and private airports. The FAA regulation 14 CFR 77.9, *Construction or alteration requiring notice*, contains a list of types of construction or alterations of existing structures for which a notice must be filed with the FAA.

3.17.2.2 State

California Department of Transportation

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways, and for implementing federal highway standards for interstate highways. The use of California state highways for reasons other than normal transportation purposes may require written authorization or an encroachment permit from Caltrans.

Section 660 of the California Streets and Highways Code allows Caltrans to issue encroachment permits authorizing activities related to the placement of encroachments within, under, or over

state highway rights-of-way (ROWs). Caltrans reviews all requests from utility companies that plan to conduct activities within state highway ROWs. Caltrans's encroachment permits may include conditions or restrictions that limit when construction activities can occur within or above roadways that are under the jurisdiction of Caltrans. The California Streets and Highways Code also includes regulations for the care and protection of state and county highways and requires permits for any load that exceeds Caltrans's weight, length, or width standards for public roadways. Sections 700–711 provide provisions that are specific to utility providers.

Caltrans manages the California Scenic Highway Program to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the highways. Designation as a scenic highway is determined by views of the natural landscape, scenic quality, and the extent of visual intrusion. The Project area is not located in the vicinity of a state designated scenic highway.

Senate Bill 743 and CEQA Guidelines Section 15064.3

Senate Bill (SB) 743, enacted by the California Legislature and signed into law in the fall of 2013, initiated a significant change in the way that transportation impacts are measured under CEQA. The requirements of SB 743 resulted in the addition of Section 15064.3 to the CEQA Guidelines, which calls for evaluation of a project's transportation impacts in terms of vehicular miles traveled (VMT). VMT is a measure of the total number of miles (distance) traveled by vehicle trips associated with a project and is sometimes expressed as an average per trip or per person.

In accordance with SB 743, CEQA Guidelines Section 15064.3(b) indicates that vehicle miles traveled is the most appropriate measure for identifying transportation impacts. In December 2018, the former Governor's Office of Planning and Research (OPR), now known as Office of Land Use and Climate Innovation,[3] updated the technical advisory, *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018), to provide guidance on evaluating transportation impacts under CEQA. The thresholds set forth in the updated technical advisory may be used if a county has not yet adopted VMT screening criteria.

California Joint Utility Traffic Control Manual

The *California Joint Utility Traffic Control Manual* provides guidelines for ensuring that the needs of all roadway users (e.g., motorists, bicyclists, and pedestrians) are met through the establishment of a temporary traffic control zone during highway construction, utility work, and maintenance operations. For any construction activities within a local ROW, the use of a traffic control service and any lane closures would be conducted in accordance with applicable laws and permit conditions. These traffic control measures are required to be consistent with those published in the *California Joint Utility Traffic Control Manual*.

[3] The Governor's Office of Planning and Research was renamed as the Governor's Office of Land Use and Climate Innovation (LCI) on July 1, 2024.

California Vehicle Code

The California Vehicle Code includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways, safe operation of vehicles, and the transportation of hazardous materials. Caltrans is the administering agency that implements these vehicle-related laws through additional regulations and licensing activities.

3.17.2.3 Local

CPUC General Order No. 131-D explains that local land use regulations would not apply to the Project. However, for informational purposes, the goals and policies of local general plans and other planning documents pertaining to transportation that would otherwise be relevant to the Project and alternative(s) are described below.

Kern County

Kern County General Plan

The Kern County General Plan (Kern County 2009) is intended to fulfill five primary objectives that includes the encouragement of economic development, adoption of policies and goals that reflect commitment to consult and cooperate with applicable federal, state, regional, and local agencies, the protection of environmental resources, the promotion and protection in the health, safety, and welfare of residents, and compliance with the provisions of state planning and zoning laws. The Circulation Element includes the following goal:

- Coordinate with the California Department of Transportation regarding various transportation developments within the County.

Kern County Bicycle Master Plan

In 2012, the Kern Council of Governments adopted the *Kern County Bicycle Master Plan and Complete Streets Recommendations* document (Kern County 2012a, 2012b), which provides a broad vision for encouraging increased bicycle travel, as well as strategies and actions, to improve conditions for bicycling throughout the unincorporated communities in the county. The plan provides direction for expanding the existing bikeway network and connecting gaps within the unincorporated communities and throughout the county as a means of bettering the bicycling environment. The applicable policy recommendation identified in the plan that pertains to the Project is to coordinate roadway and development projects with the transit agency serving each area to provide the necessary amenities prior to construction.

Kern County Airport Land Use Compatibility Plan

The *Kern County Airport Land Use Compatibility Plan* (Kern County 2012c) serves as a guidance document for the regulation of land uses around the various public use airports found in the county and incorporated cities such as California City. The plan addresses airport land use compatibility concerns over four categories including exposure to aircraft noise, land use safety with respect both to people and property on the ground and the occupants of aircraft, protection of airport airspace, and general concerns related to aircraft overflights. The Project would utilize aircraft (helicopters) during construction and O&M activities; therefore, the Project would conform with policies and guidelines set forth by the Kern County Land Use Compatibility Plan.

San Bernardino County

San Bernardino Countywide Policy Plan

The purpose of the Transportation and Mobility Element of the *San Bernardino Countywide Policy Plan* (San Bernardino County 2022) is to maintain the operational conditions of San Bernardino County's roadway network, to coordinate the transportation with future land use patterns and projected growth, to provide guidance for the local and subregional mobility needs of communities, and to address access, connectivity, range, and suitability of mobility options among the various communities. The Project would support the principles outlined within the Transportation and Mobility Element.

City of California City

City of California City General Plan

The Circulation Element of the City of California City General Plan (City of California City 2012) provides a plan for the circulation system supported by goals, policies, and implementation measures relating to the development of a balanced multi-model circulation system for California City. The City of California City's Circulation Element includes a policy that development of roads within the City shall be in accordance with the Circulation Plan.

3.17.3 Applicant Proposed Measures and Best Management Practices

3.17.3.1 Applicant Proposed Measures

SCE has not identified any Applicant proposed measures (APMs) related to transportation for the Project.

3.17.3.2 Best Management Practices

The Project has not identified best management practices (BMPs) related to transportation.

3.17.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant transportation impact if it would:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;

b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

d) Result in inadequate emergency access.

In addition, the CPUC has identified additional CEQA impact criteria that are specific to the types of projects evaluated by the CPUC to be considered in addition to the criteria identified in

Appendix G of the CEQA Guidelines (CPUC 2019). The Project would also result in a significant transportation impact if it would:

e) Create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations;

f) Interfere with walking or bicycling accessibility; or

g) Substantially delay public transit.

3.17.5 Direct and Indirect Effects

3.17.5.1 Approach to the Analysis

This section discusses potential impacts on transportation as guided by Appendix G of the CEQA Guidelines and CPUC's CEQA impact criteria. The Project would be regulated by the various laws, regulations, and policies as described in Section 2.11, *Permits and Approvals*, as well the applicable regulations related to transportation, as described above in Section 3.17.2. It is assumed that the Project would comply with applicable federal, state, and local laws and regulations, and governing agencies and institutions would be expected to continue to enforce applicable requirements to the extent that they do so currently.

3.17.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

The Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system. *(No Impact)*

Construction

The Project sites and alignments are throughout San Bernardino County, Kern County, and California City; therefore, the various programs, plans, ordinances, or policies of those agencies, as well as any applicable federal or state agencies (e.g., Caltrans), are considered in this analysis. For example, the Project alignments cross SR 58; therefore, the California Streets and Highways Code is also applicable to this discussion. While a large portion of the Project area could be described as undeveloped and currently experience relatively low volumes of traffic, temporary construction activities may intermittently disrupt or impede access segments of the local and regional circulation system that may currently be used by pedestrians, bicyclists, public transit, and various passenger vehicles.

Depending on construction progress, schedule, and location of construction work, the Project may affect the circulation system. For example, with respect to location, substation/switchyard work would be conducted within properties with no public access, and therefore, not a current contributor to local circulation system. However, to access these construction sites, construction crews would utilize the local circulation system which would, in effect, involve intermittent, yet consistent use of publicly accessible roads throughout the Project's alignments. Regardless of

where construction is occurring, movement of construction workers and vehicles and equipment may temporarily disrupt or impede access to segments of the local and regional circulation system.

Similarly, temporary lane closure of travel lanes (i.e., encroachment) could also temporarily adversely affect the performance of the circulation system, including but not limited to intersections, streets, pedestrians and bicycle routes, and regional transit routes. For example, Project installation would require overhead crossings along a number of public roadways, including locations along SR 58, which could result in direct and indirect disruption to vehicle access, traffic speeds, and street operations. In addition, helicopters would be used to transport construction equipment that could potentially be ferried across major roads or crossings, which may require temporary road closures. Furthermore, pull-and-tension or stringing sites would occur at both public and private roadways, potentially resulting in short-term and intermittent limitations to public and private access.

While the Project would require the use of slow-moving vehicles and involve temporary lane closures, and in general, could result in impacts on the regional and/or local circulation system and thus applicable programs, plans, ordinances, or policies, these construction impacts would be limited and/or temporary. Further, the Project would obtain and comply with state, regional, and local road encroachment permits and requirements (e.g., SCE would conform to existing regulations). Furthermore, as discussed in Chapter 2, *Project Description*, Section 2.7.10, *Public Safety and Traffic Control*, the Project would be constructed in a manner consistent with current SCE construction safety practices/standards. For these reasons, the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and/or pedestrian facilities, and there would be no impact.

Operation and Maintenance

Once constructed, the expanded or upgraded substations/switchyard, subtransmission lines, telecommunications lines, and access roadways would require annual routine maintenance trips, inspection, and as-needed management activities (e.g., vegetation trimming). It is anticipated that no new additional personnel would be required for O&M activities. Annual visual inspections would occur at the substations/switchyard, and subtransmission, distribution, and telecommunications lines.

For example, as discussed in Section 2.9.1, *Systems Control and Operation Personnel*, normal operation of the substations/switchyard and subtransmission lines would be controlled remotely through SCE's control systems and manually in the field, as required. On-site maintenance for subtransmission and telecommunication lines would be conducted on an as-needed basis, for example, under the direction of regulatory requirements (e.g., CPUC General Orders 95 and 128).

Project O&M activities would not substantially increase above existing levels and any associated increase in traffic due to O&M activities would not be expected to result in a substantial increase in existing traffic volumes in the area. The increase in reliability from the Project's upgrades and improvements to the region's electrical infrastructure is anticipated to result in less O&M activities; therefore, Project operations would not conflict with a program, plan, ordinance, or

policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and there would be **no impact**.

Criterion b) Whether the Project would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).

Project construction would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b). *(No Impact)*

The standards set forth in the Technical Advisory, as well as the San Bernardino County *Transportation Impact Study Guidelines*, instructs to address a project's additional permanent automobile trips or vehicle miles traveled (i.e., project operations) in lieu of an existing model or method. Because Project construction would be temporary (i.e., not permanent), construction activities do not necessitate analysis under CEQA Guidelines Section 15064.3(b).

Impact 3.17-1: Project operation and maintenance would result in an increase in daily vehicle miles traveled. (*Less than Significant*)

As discussed above, CEQA Guidelines Section 15064.3(b) indicates that vehicle miles traveled is the most appropriate measure for identifying transportation impacts. Section 15064.3(b) also provides that VMT refers to the amount and distance of automobile travel attributable to a project, whereas the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks.

The thresholds set forth in OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) (OPR 2018) may be used if a county has not yet adopted VMT screening criteria. In July 2019, San Bernardino County released transportation impact study guidelines that provide recommendations related to VMT assessment. Kern County has not adopted VMT screening criteria. The San Bernardino County *Transportation Impact Study Guidelines* (San Bernardino County 2019) are consistent with OPR's Technical Advisory, which states that projects that generate less than 110 daily permanent automobile trips do not necessitate completion of a VMT assessment and may generally be assumed to cause a less-than-significant transportation impact. Thus, OPR's Technical Advisory could be considered applicable to projects in both counties and can be referenced to set a screening threshold in this analysis beneath which the level of the operational vehicle trips impact can be considered less than significant without the use of project-specific VMT modeling and analysis.

Once constructed, the Project would require annual routine maintenance trips, inspection, and as-needed management activities (e.g., vegetation trimming). It is anticipated that no new additional personnel would be required for O&M activities. Annual visual inspections would occur at the substations/switchyard, as currently conducted, and new inspections would be required for the subtransmission and telecommunications lines.

The Project is designed to add load-serving capacity to improve the electric system reliability. This increase in reliability would result in less frequent emergency repairs and a net reduction in

vehicle trips and long-term VMT relative to existing conditions. Therefore, given the net reduction in emergency repairs that would result from Project operations, the Project would result in only a relatively nominal change in VMT. In consideration of the anticipated and as-needed trips for inspection and maintenance programs, and because operations would not necessitate the addition of new additional personnel, Project operations would not introduce more than 110 daily permanent automobile trips. Therefore, the use of project-specific VMT modeling and analysis is not required and the impact would be **less than significant**.

Mitigation: None required.

Criterion c) Whether the Project would substantially increase hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact 3.17-2a: Project construction could substantially increase hazards due to a geometric design feature. (*Less than Significant with Mitigation*)

The Project would result in the rehabilitation, improvement, and construction of access roadways throughout the Project area along and to the subtransmission line alignments. Three driveways would be constructed along 90th Street (formerly Hacienda Boulevard) (see Figure 2-6) and an existing dirt road would be paved to provide additional access to the proposed expansion of the Cal City Substation. 90th Street is the continuation of Hacienda Boulevard and intersects Mendiburu Road near the southeastern corner of proposed footprint of the Cal City Substation. In addition, pull-and-tension or stringing sites would occur across public and private roadways. As such, Project construction would require altering the local circulation system such that roadway users, such as daily commuters or freight, may be unfamiliar with the temporary circulation system layout. In turn, this may result in a temporary increase in hazards due to altered geometric design features of the typical circulation system layout.

While the construction of subtransmission line access roads and Cal City Substation driveways and stringing of conductor and telecommunication lines would involve encroachment into the public ROWs and public and private driveways, these construction activities would not likely substantially result in an increase of hazards as these components would conform with design standards and applicable policies and regulations under the discretion of local jurisdictions. For example, as part of the requirements for issuance of an encroachment permit, the Project would conduct construction in a manner that minimizes hazards due to geometric design features or incompatible uses.

As described above, the BNSF Mojave Subdivision line (Mojave line) would be crossed Project alignments throughout multiple points, including near Rosamond Boulevard at the intersection of Twenty Mule Team Road and U.S. 395 at the southwestern and southeastern end of the Project area, respectively. To cross transit and freight crossings, such as SR 58 and the Mojave line, the Project would use pull sites and guard structures that allow safe passage and emergency access. It is unknown at which frequency the Mojave line would cross the Project alignment, particularly during construction activities. During Project construction, the use of varying construction

equipment in combination with the potentially altered circulation system may increase hazards due to changes in the existing geometric design feature. For the reasons listed above, Project construction may substantially increase hazards due to a geometric design feature, which would be a significant impact.

To reduce this impact, Mitigation Measure 3.17-2a, is recommended, which would require SCE to coordinate all construction activities with transportation services and authorities in the area, which would include Burlington Northern Santa Fe, prior to construction to ensure that construction activities and associated lane closures do not interfere with rail services, among other requirements. Implementation of this measure, in addition to guidance provided by local, regional, and state agencies as part of any applicable encroachment permit requirements, would minimize the potential impact associated to a **less-than-significant** level.

Mitigation Measure 3.17-2a: Traffic Management Plan.

SCE shall prepare and implement a Traffic Management Plan in consultation with Caltrans and the applicable local government(s)/entities, including agencies that operate alternative modes of transportation (e.g., Kern Transit, Burlington Northern Santa Fe). The Traffic Management Plan and documentation of agency consultation shall be submitted to the CPUC for review and approval at least 30 days prior to the commencement of construction activities. At a minimum, the plan shall:

- Include a discussion of work hours, haul routes, and work area delineation within public road rights-of-way.
- Require construction work to utilize traffic control and flagging when construction vehicles are present.
- Identify and provide all access and parking restrictions and signage requirements.
- Require workers to park personal vehicles at the approved staging area(s) and take only necessary project vehicles to the work sites.
- Lay out plans for notifications and a process for communication with adjacent residents and landowners prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which road/lanes and access point/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints.
- Describe coordination of all construction activities with emergency service providers in the area prior to construction to ensure that construction activities and associated lane closures would not substantially affect emergency response vehicles. Emergency services providers shall be notified of the timing, location, and duration of construction activities. The plan shall include verification that emergency service providers were coordinated with.
- Include the requirement that all roadways shall remain passable to emergency service vehicles at all times.
- Identify all roadway locations where special construction techniques (e.g., night construction) would be used to minimize impacts to traffic flow.

- Identify alternate or detour paths that would minimize interference with walking or bicycling accessibility where applicable.

Significance after Mitigation: Less than Significant.

Impact 3.17-2b: Project operation and maintenance would not substantially increase hazards due to a geometric design feature. (*Less than Significant*)

Once constructed, the Project's network of access roadways, as well as the new driveways, would primarily be used by O&M staff for routine and as-needed inspections. The new access roadways would be mainly linear, and therefore, would not introduce hazardous conditions due to geometric design such as sharp curves. The rehabilitation or improvement of existing roadways would not change the roadway configuration or alignment. The proposed driveways and new access roadways would be designed to conform with design standards and applicable policies and regulations under the discretion of local jurisdictions (e.g., California City and Kern County). Substation/switchyard O&M activities would be conducted within the respective substation/switchyard properties, and work (e.g., inspection and maintenance) along the subtransmission lines is anticipated to be contained on access roads or structure pads. As such, roadway closures are not anticipated during routine O&M.

As described in detail in Section 2.5, *Project Components*, the Project would involve installation of new aboveground structures (e.g., subtransmission line poles) near roadways where none previously existed. These new aboveground structures may have the potential to conflict with local roadway users. For example, motorists may collide with new aboveground structures if the vehicle were to leave the road (i.e., fixed object collision). With respect to this possibility, however, the Project would not change the configuration (i.e., alignment) of the area's roadways, as stated above. Also, there are already existing aboveground structures throughout the Project area, and new aboveground structures would be installed according to SCE design standards that would align with the area's existing infrastructure. Further, roadway users, by law, are required to follow applicable driving rules and regulations, and would have to utilize accessible, unrestricted roadways (i.e., no trespassing).

For these reasons, Project operation impacts pertaining to a substantial increase in hazards due to a design feature or incompatible use would be **less than significant**.

Mitigation: None required.

Criterion d) Whether the Project would result in inadequate emergency access.

Project operations would not result in inadequate emergency access. *(No Impact)*

Project O&M would include annual routine maintenance trips, inspection, and as-needed management activities (e.g., vegetation trimming). Normal operations of the substations/switchyard and subtransmission lines would be controlled remotely through SCE's control systems and manually in the field as required. It is anticipated that no new additional personnel would be

required for O&M activities. Annual visual inspections would occur at the substations/switchyard and along the Project alignments. In other words, these activities would be conducted within either substation/switchyard properties, access roadways, or structure pads. Relative to existing conditions, traffic increases for O&M activities would be minor compared to existing traffic in the area. For these reasons, Project operations would have no impact on emergency access.

Impact 3.17-3: Project construction could result in inadequate emergency access. (*Less than Significant with Mitigation*)

Subtransmission line-related construction activities that would be associated with the Project would involve the movement of oversize vehicles (e.g., cranes) that could affect emergency vehicle access to and through the Project construction areas. In addition, temporary lane closures are anticipated to occur during line stringing (i.e., overhead cable installation activities) over roadways, and as such, could result in delays along emergency access routes during these construction-related lane closures. In the event of an emergency, the combination of slower moving vehicles and temporary lane closures could result in inadequate or delayed emergency access, which would cause a significant impact.

To reduce this impact, implementation of Mitigation Measure 3.17-2a is recommended, which would require SCE to coordinate all construction activities with emergency service providers in the area prior to construction to ensure that construction activities and associated lane closures do not result in inadequate emergency access, among other requirements. Implementation of this measure, in addition to guidance provided by local, regional, and state agencies as part of any applicable encroachment permit requirements, would minimize the potential impact associated with temporary effects on emergency service provider access to a **less-than-significant** level.

Mitigation: Implement Mitigation Measure 3.17-2a.

Significance after Mitigation: Less than Significant.

Criterion e) Whether the project would create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations.

Impact 3.17-4a: Project construction could create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations. (*Less than Significant with Mitigation*)

As discussed in above, subtransmission line–related construction activities (i.e., construction along the Project alignments) would require temporary lane closures and would involve the movement of oversized vehicles that could affect emergency vehicle access to and through the Project construction areas. These lane closures could include lanes of roads, if the entire road does not need to be closed, as well as associated sidewalks or pedestrian paths. If these temporary lane closures develop hazardous conditions from the reduction of available facilities (e.g., congestion), a significant impact would occur on people walking, bicycling, or driving for public transit operations.

Implementation of Mitigation Measure 3.17-2a is recommended, which would require construction activities to utilize traffic control and flagging and identify all roadway locations where special construction techniques would be used to minimize impacts to flow. In addition to guidance provided by local agencies as part of any applicable encroachment permit requirements, implementation of this measure would minimize potential impacts associated with potentially hazardous conditions for people walking, bicycling, or driving for public transit operation to **less-than-significant** levels. In addition, construction at the substation/switchyard properties would not be anticipated to have any significant impacts for people walking, bicycling, or driving for public transit operations as these areas would have limited or no access to the public; and many construction areas along highways would have limited access for people walking or bicycling.

Mitigation: Implement Mitigation Measure 3.17-2a.

Significance after Mitigation: Less than Significant.

Impact 3.17-4b: Project operations could create potentially hazardous conditions for people driving. (*Less than Significant*)

As previously discussed, Project O&M would include annual routine maintenance trips, inspection, and as-needed management activities (e.g., vegetation trimming). Normal operations of the substations/switchyard and subtransmission lines would be controlled remotely through SCE's control systems and manually in the field, as required. It is anticipated that no new additional personnel would be required for O&M activities. Annual visual inspections would occur at the substations/switchyard as currently conducted and new annual inspections would be conducted for the subtransmission and telecommunications lines. These activities would be conducted within either substation/switchyard properties, access roadways, and/or structure pads, and thus, O&M activities are not anticipated to affect people walking, bicycling, or driving for public transit operations.

However, as described above¸ the Project would involve installation of new aboveground structures (e.g., subtransmission line poles) near roadways where none previously existed. These new aboveground structures would have the potential to create potentially hazardous conditions for people driving. For example, motorists may collide with new aboveground structures if the vehicle were to leave the road (i.e., fixed object collision). However, there are already existing aboveground structures throughout the Project area, and new aboveground structures would be installed according to SCE design standards that would align with the area's existing infrastructure. Further, roadway users, by law, are required to follow applicable driving rules and regulations, and would have to utilize accessible, unrestricted roadways (i.e., no trespassing).

Therefore, operation of the Project would result in a **less-than-significant** impact associated with creating hazardous conditions for people driving.

Mitigation: None required.

Criterion f) Whether the project would interfere with walking or bicycling accessibility.

Project operations would not interfere with walking or bicycling accessibility. *(No Impact)*

Project O&M activities would be like existing conditions, and would include annual routine maintenance trips, inspection, and as-needed management activities (e.g., vegetation trimming). If necessary, such as what would be required for inspections by applicable regulatory agencies, O&M personnel would only represent a nominal increase in traffic. As previously discussed above, O&M activities would be conducted within either substation/switchyard properties, access roadways, and/or pads. For these reasons, Project operations would not interfere with walking or bicycling accessibility, and there would be no impact.

Impact 3.17-5: Project construction would interfere with walking or bicycling accessibility. (*Less than Significant with Mitigation*)

Construction personnel would use public roads and existing access roads to the maximum extent feasible. Access roadways do not typically feature dedicated walking or bicycling components, so in the event that construction personnel would use access roadways, there would be no anticipated interference with walking or bicycling accessibility. However, the Project would also involve temporary roadway closures, which could include associated sidewalks or pedestrian paths. Although the Project alignments are largely located in remote areas where there is not currently a large volume of pedestrian or bicycle traffic, these temporary roadway closures would still potentially interfere with walking or bicycling accessibility, which would result in a significant impact.

Implementation of Mitigation Measure 3.17-2a is recommended, in addition to guidance provided by local agencies as part of any applicable encroachment permit requirements, would require, among other requirements, identification and provision of all short-term access restrictions and signage requirements and alternate or detour paths that would minimize interference with walking or bicycling accessibility.

Mitigation: Implement Mitigation Measure 3.17-2a.

Significance after Mitigation: Less than Significant.

Criterion g) Whether the project would substantially delay public transit.

Project O&M activities would not result in public transit delays. *(No Impact)*

Project O&M activities would be similar to existing conditions. If necessary, such as what would be required for inspections by applicable regulatory agencies, O&M personnel would only represent a nominal increase in traffic. As provided in impact discussions above, these activities would be conducted within either substation properties, access roadways, or pads, and O&M activities would have no impact on transit operations. For these reasons, Project O&M activities are not anticipated to result in public transit delays, and thus, there would be no impact.

Impact 3.17-6: Project construction could substantially delay public transit. (*Less than Significant with Mitigation*)

As described above in Section 3.17.1, *Environmental Setting*, the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment would cross one bus route along SR 58, the 240 Boron–Mojave, which operates two times eastbound and three times westbound every Monday, Wednesday, and Friday. Potential delays to this public transit route could be associated with subtransmission line-related construction activities, specifically overhead cable installation activities that would require the temporary closures of roadway lanes. In the event that public transit operations intersect where a temporary closure is occurring (e.g., overhead cable installation across SR 58), there could be a substantial delay in public transit, which would be a significant impact.

Implementation of Mitigation Measure 3.17-2a, in addition to guidance provided by local agencies as part of any applicable encroachment permit requirements, would require coordination with agencies that operate alternative modes of transportation (e.g., Kern Transit) to reduce any potential delay in public transit. For these reasons, Project construction impacts associated with public transit delays would be reduced to a **less-than-significant** level.

Mitigation: Implement Mitigation Measure 3.17-2a.

Significance after Mitigation: Less than Significant.

3.17.5.3 Cumulative Effects Analysis

The scope for considering cumulative impacts related to traffic and transportation includes any project that would, along with the Project, conflict with an applicable plan, ordinance, or policy establishing measures for the performance of the circulation system, conflict or be inconsistent with CEQA Guidelines Section 15064.3, substantially increase hazards due to design features or incompatible uses, result in adequate emergency access, or conflict with adopted policies, plans, or programs, regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance, safety, or accessibility of such facilities. Therefore, the geographic and temporal extent for considering cumulative construction impacts related to traffic and transportation includes all regional and local roadways that may be used to access the Project, or that would otherwise be impacted by the Project during construction, that would also be impacted by cumulative projects identified in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project* (hereafter also collectively referred to as "cumulative projects").

For operations, traffic and transportation–related impacts are inherently cumulative because impacts on the operational efficiency, or structural integrity, of the circulation system result from vehicles originating from a variety of sources. Although projects in the cumulative scenario have potential to add vehicle trips to the same segments of roads and/or intersections that may be affected by the Project, it is impossible to quantitatively assess whether the projects would result in a cumulatively considerable impact without readily accessible additional data.

Thus, the following cumulative analysis considers the Project's impacts in combination with the cumulative projects listed in Table 3.0-1, as readily accessible data allows.

Criterion a)

Because the Project would obtain and comply with state, regional, and local road encroachment permits and other applicable requirements that would minimize impacts related to an applicable program, and would result in no impact related to thereof, the Project would not contribute to impacts that could be generated from the cumulative projects identified in Section 3.0. Therefore, the Project would result in no cumulative impact related to a conflict with a program, plan, ordinance or policy addressing the circulation system. *(No Impact)*

Criterion b)

Project construction would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3(b). Because construction of the Project would result in no impact, the Project would also result in no cumulative impact. *(No Impact)*

Impact C.3.17-1: The Project operation and maintenance daily vehicle miles traveled impact would not be cumulatively considerable. (*Less than Significant*)

As provided above in Impact 3.17-1, above, the Project operations would not generate more than 110 daily permanent automobile trips. In consideration of the Project trips combined with the trips of cumulative projects, traffic and transportation-related impacts are inherently cumulative because impacts on the operational efficiency, or structural integrity, of the circulation system result from vehicles originating from a variety of sources. The thresholds set forth in the OPR Technical Advisory and San Bernardino County's *Transportation Impact Study Guidelines* are designed to manage increased traffic on a project-by-project basis to reduce the potential for an individual project to result in a cumulatively considerable impact related to traffic and transportation. The cumulative projects are currently in varying levels of environmental review (e.g., preliminary, in-progress, or completed); however, readily accessible information and data suggest that, individually, the cumulative projects would not exceed thresholds set forth by local jurisdictions and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).

Further, it is anticipated that the cumulative projects would undergo multiple necessary levels of review to determine and confirm consistency with planned transportation growth in local jurisdictions relative to VMT. For these reasons, the Project would not be cumulatively considerable and would result in a less-than-significant cumulative impacts related to potential conflicts or inconsistency with CEQA Guidelines Section 15064.3(b).

Mitigation: None required.

Criterion c)

Impact C.3.17-2a: The Project construction increased hazards due to a geometric design feature impact would be cumulatively considerable. (*Less than Significant with Mitigation*)

As discussed in Impact 3.17-3, the Project's network of access roadways is designed to support construction activities as well as O&M activities. The proposed driveways would be designed to conform with design standards and applicable policies and regulations under the discretion of local jurisdictions. However, during Project construction, the use of varying construction

equipment in combination with the potentially altered circulation system may increase hazards due to changes in the existing geometric design feature. As such, Project construction may substantially increase hazards due to a geometric design feature, which would be a significant cumulative impact.

Implementation of Mitigation Measure 3.17-2a is recommended, and each jurisdiction's encroachment permit conditions would require traffic control management and advanced coordination and notification to the public. Additionally, it is anticipated that the Project, along with the cumulative projects, would also be required to conform with each respective jurisdiction's design standards, encroachment permit conditions, and any applicable requirements as part of any permits. It is also expected that the local/state agencies would require coordination with other existing projects located within the same construction area. Therefore, the Project's cumulatively considerable impact associated with design feature hazards would be mitigated to a less-than-significant level.

Mitigation: Implement Mitigation Measure 3.17-2a.

Significance after Mitigation: Less than Significant.

Impact C.3.17-2b: The Project operational hazards impact due to a geometric design feature would not be cumulatively considerable. (*Less than Significant*)

During construction activities, it is anticipated that any geometric design feature or use resulting from the project would conform with operational standards and requirements. Therefore, for these reasons, the Project impact of increasing hazards due to geometric design feature or incompatible uses would not be cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion d)

Project operations would have no impact on emergency access. Because operations of the Project would result in no impact, the Project would also result in no cumulative impact. (*No Impact*)

Impact C3.17-3: The Project construction emergency access impact would be cumulatively considerable. (*Less than Significant with Mitigation*)

Temporary lane closures are anticipated to occur during Project stringing (i.e., overhead cable installation activities), and as such, could result in delays along emergency access routes during these construction-related lane closures. In the event of an emergency, the combination of slower moving vehicles and temporary lane closures could result in inadequate or delayed emergency access. Some of the cumulative projects identified in Section 3.0.3, *Approach to the Cumulative Impact Analysis*, could also necessitate the temporary closure of roadways or lanes of roadways, as well as the use of slower moving vehicles, which could result in inadequate or delayed emergency access. Therefore, the Project would be cumulatively considerable, and a significant cumulative impact would occur.

Implementation of Mitigation Measure 3.17-2a, which would require the Project to coordinate all construction activities with emergency service providers in the area prior to construction, would ensure that construction activities and associated lane closures would not significantly affect emergency response vehicles. Some of the cumulative projects, particularly those that anticipate temporarily closing roads and/or anticipate using slower moving vehicles (e.g., SCE Ivanpah–Control Project), would also offer traffic control plans that minimize impacts related to the adequacy of emergency access. Implementation of these measures, in addition to guidance provided by local agencies as part of any applicable encroachment permit requirements, would minimize potential impacts associated with temporary effects on emergency service provider access. Therefore, the Project's cumulatively considerable impact on emergency access would be mitigated to a less-than-significant level.

Mitigation: Implement Mitigation Measure 3.17-2a.

Significance after Mitigation: Less than Significant.

Criterion e)

Impact C.3.17-4a: The Project construction hazardous conditions for people walking, bicycling, or driving, and for public transit operations impact would be cumulatively considerable. (*Less than Significant with Mitigation*)

Temporary lane closures are anticipated to occur during Project stringing (i.e., overhead cable installation activities) that could result in delays along emergency access routes. In the event of an emergency, the combination of slower moving vehicles and temporary lane closures could result in potentially hazardous conditions for people walking, bicycling, or driving for public transit operations. Some of the cumulative projects identified in Section 3.0.3, *Approach to the Cumulative Impact Analysis* (e.g., SCE Ivanpah–Control Project), could also necessitate the temporary closure of roadways or lanes of roadways, as well as the use of slower moving vehicles that could also result in potentially hazardous conditions for people walking, bicycling, or driving for public transit operations. Therefore, the Project impact would be cumulatively considerable, and a significant cumulative impact would occur.

Implementation of Mitigation Measure 3.17-2a is recommended, which would require the Project construction work to utilize traffic control and flagging and identify all roadway locations where special construction techniques would be used to minimize impacts to flow. The cumulative projects, particularly those that anticipate temporarily closing roads and/or anticipate using slower moving vehicles, would likely also offer traffic control plans that minimize impacts related to the adequacy of emergency access. Implementation of these measures, in addition to guidance provided by local agencies as part of any applicable encroachment permit requirements, would minimize potential impacts associated with potentially hazardous conditions for people walking, bicycling, or driving, and for public transit operations. Therefore, the Project's cumulatively considerable impact associated with hazardous conditions would be mitigated to a less-than-significant level.

Mitigation: Implement Mitigation Measure 3.17-2a.

Significance after Mitigation: Less than Significant.

Impact C.3.17-4b: The Project operations hazardous conditions for people driving impact would not be cumulatively considerable. (*Less than Significant*)

Project O&M would include annual routine maintenance trips, inspection, and as-needed management activities (e.g., vegetation trimming). Cumulative projects would also operate and maintain their respective infrastructure, wherein cumulative public utility projects are also anticipated to perform annual routine maintenance trips, inspection, and as-needed management activities. The Beyond Food Mart–Kramer Junction and cannabis facility projects would involve respective operational activities such as product delivery and other customer service-related operations and the Core Civic California City Immigration Processing Center may generate visitor trips in addition to product deliveries. These activities would be conducted within their respective properties (such as access roadways or structure pads), and thus, O&M activities are not anticipated to affect people walking, bicycling, or driving for public transit operations.

As discussed in Impact 3.17-4b, the Project would involve installation of new aboveground structures (e.g., subtransmission line poles) near roadways where none previously existed, which would have the potential to create potentially hazardous conditions for people driving. However, implementation of the cumulative projects would not be anticipated to result in new aboveground structures near roadways in the immediate vicinity of the Project. Therefore, the Project's impact associated with hazardous conditions for people driving would not be cumulatively considerable and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion f)

Project operations would not interfere with walking or bicycling accessibility. Because operations of the Project would result in no impact, the Project would also result in no cumulative impact. *(No Impact)*

Impact C.3.17-5: The Project construction interference to walking or bicycling accessibility impact would be cumulatively considerable. (*Less than Significant with Mitigation*)

Although the Project alignment is largely located in remote areas where there is not currently a large volume of pedestrian or bicycle traffic, these temporary roadway closures of county and local roadways would still potentially interfere with walking or bicycling accessibility that could result in a significant impact. Some of the cumulative projects could also necessitate the temporary closure of roadways or lanes of roadways and associated sidewalks or pedestrian pathways that could also interfere with walking or bicycling accessibility. Therefore, the Project impact related to interference to walking or bicycling accessibility would contribute to a cumulative impact and would be cumulatively considerable.

Implementation of Mitigation Measure 3.17-2a, in addition to guidance provided by local agencies as part of any applicable encroachment permit requirements, would require, among other things, identification and provision of all access restrictions and signage requirements and alternate or

detour paths that would minimize interference with walking or bicycling accessibility. Some of the cumulative projects, particularly those that anticipate temporarily closing roads and/or anticipate using slower moving vehicles, may also offer traffic control plans that minimize impacts toward walking or bicycling accessibility. Implementation of these measures, in addition to guidance provided by local agencies as part of any applicable encroachment permit requirements, would minimize potential impacts associated walking or bicycling accessibility. Also, interruptions would be temporary and short-term. For these reasons, the cumulatively considerable impact of Project construction associated with interference with walking or bicycling accessibility would be reduced to a less-than-significant level.

Mitigation: Implement Mitigation Measure 3.17-2a.

Significance after Mitigation: Less than Significant.

Criterion g)

Project O&M activities are not anticipated to result in public transit delays, and thus, there would be no Project impact. Because O&M of the Project would result in no impact, the Project would also result in no cumulative impact. *(No Impact)*

Impact C.3.17-6: The Project construction impact delaying public transit would be cumulatively considerable. (*Less than Significant with Mitigation*)

As described in Impact 3.17-6, potential delays to the public transit route 240 Boron–Mojave could result from subtransmission line-related construction activities. In particular, overhead cable installation activities across SR 58 north of Edwards Substation would require the temporary closures of lanes or lanes of roadways, and associated sidewalks or pedestrian paths. Further, some of the cumulative projects could necessitate the temporary closure of roadways or lanes of roadways, as well as the use of slower moving vehicles. In the event that public transit operates where a Project and cumulative project temporary closures are occurring, there could be a potential delay in public transit. Therefore, the Project construction impact related to substantially delaying public transit would be cumulatively considerable.

Implementation of Mitigation Measure 3.17-2a, in addition to consultation with local agencies as part of any applicable encroachment permit requirements, would require coordination with agencies that operate alternative modes of transportation (e.g., Kern Transit) to mitigate potential delay in public transit. Some of the cumulative projects also offer traffic control plans that minimize impacts related to potential delays in public transit. For these reasons, the cumulatively considerable impact of Project construction associated with substantially delaying public transit would be reduced to a less-than-significant level.

Mitigation: Implement Mitigation Measure 3.17-2a.

Significance after Mitigation: Less than Significant.

3.17.6 References

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3.18 Tribal Cultural Resources

This section evaluates the potential impacts of the Project on tribal cultural resources. It includes information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions for the EIR.

Appendix B, *Scoping Report*, includes all comments received during the scoping period. CPUC received scoping comments from the Native American Heritage Commission (NAHC) noting that the tribal consultation requirements set forth by Assembly Bill (AB) 52 is applicable to the Project. This letter also includes the NAHC's recommendations for conducting cultural resource assessments. The NAHC recommends consulting with California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the Project as early as possible to avoid inadvertent discoveries of Native American human remains and to best protect tribal cultural resources. Regulatory requirements and guidance for best practices specific to AB 52 were included with the comment letter, provided in Appendix B. The NAHC letter included the only scoping comments CPUC received pertaining to tribal cultural resources.

3.18.1 Environmental Setting

Section 3.5, *Cultural Resources*, of this Draft EIR provides a comprehensive overview of the cultural resources setting, including an archaeological, ethnographic, and historic-era overview of the Project area. The Cultural Resources section also provides a review of the background research completed for the Project area.

To determine the tribal cultural resources sensitivity of the Project area, Environmental Science Associates (ESA) submitted a Sacred Lands File (SLF) request to the NAHC on behalf of CPUC on May 8, 2023. The NAHC responded on June 2, 2023, indicating that the results of the search for sacred lands within the Project area were negative. The NAHC also included a list of 18 representatives from 11 tribes who are affiliated with the Project area. CPUC also maintains an AB 52 Master List of Tribes that have requested to consult on CPUC's projects for specific geographies. As a result of the NAHC list search and a review of CPUC's AB 52 Master list, a total of 27 contacts from 17 tribes were identified. CPUC sent consultation letters to the 27 tribal representatives by certified mail on June 16, 2023. On July 17, 2023, CPUC followed up by sending electronic mailings of those letters to all contacts that had provided email addresses.

Representatives from the Big Pine Paiute Tribe of Owens Valley and Fort Yuma Quechan Indian Tribe responded that they had no comment and declined consultation for this Project. CPUC did not receive a response from 12 Tribes: Chumash Council of Bakersfield, Colorado River Indian Tribes, Kern Valley Indian Community, Kitanemuk & Yowlumne Tejon Indians, Mission Creek Band of Mission Indians, San Fernando Band of Mission Indians, Santa Ysabel Band of Lipay

Nationa (Kumeyaay), Serrano Nation of Mission Indians, Tejon Indian Tribe, Torres Martinez Desert Cahuilla Indians, Tubatulabals of Kern Valley, and Tule River Indian Tribe.

Three tribes—the Yuhaaviatam of San Manuel Nation (formerly San Manuel Band of Mission Indians), Twenty-Nine Palms Band of Mission Indians, and Morongo Band of Mission Indians—requested to be consulted and requested additional information for this Project:

- The Yuhaaviatam of San Manuel Nation responded on July 17, 2023, requesting a copy of the cultural report, the geotechnical report (if required), and Project plans with depth of disturbance. CPUC responded via email to the Yuhaaviatam of San Manuel Nation on July 24, 2024, updating the Tribe on the Project with information on the status of the geotechnical report, anticipated depth of disturbance, and information regarding the anticipated CEQA schedule. No response was received from the Yuhaaviatam of San Manuel Nation following this email.
- The Twenty-Nine Palms Band of Mission Indians responded on August 1, 2023, requesting to be consulted with on this Project. The CPUC responded via email to Twenty-Nine Palms Band of Mission Indians on July 24, 2024, updating the Tribe on the Project and information regarding the anticipated CEQA schedule. No response was received from the Twenty-Nine Palms Band of Mission Indians following this email.
- The Morongo Band of Mission Indians responded on August 2, 2024, with a request to be consulted with on the Project and requested Project information and tribal participation during the survey and archaeological testing, if these efforts had not already been completed for the Project.

Emails were sent to the three consulting tribes on October 29, 2025, and again on February 20, 2026, to provide information on the Project and to determine whether any of the tribes would be interested in meeting with CPUC regarding the Project. As of the date of preparation of this Draft EIR, none of the tribes have responded, nor have they requested a meeting with CPUC. Documentation of CPUC's initial consultation outreach with Native American representatives is included in **Appendix K**.

3.18.2 Regulatory Setting

3.18.2.1 Federal

Section 106 of the National Historic Preservation Act considers historic properties, which also include traditional cultural properties, pursuant to 36 Code of Federal Regulations 63.6.[1] Section 3.5.2, *Regulatory Setting*, in Section 3.5, *Cultural Resources*, provides a summary of Section 106 of the National Historic Preservation Act.

[1] A *traditional cultural property* is a property that is eligible for inclusion in the National Register of Historic Places based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community.

3.18.2.2 State

Public Resources Code Sections 21074, 21080, and 21083 (Assembly Bill 52)

In September 2014, the California Legislature enacted AB 52, which added provisions to the Public Resources Code regarding the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American Tribes. In particular, AB 52 requires lead agencies to analyze project impacts on tribal cultural resources (Public Resources Code Sections 21074 and 21083.09). The law defines tribal cultural resources in Public Resources Code Section 21074 as any of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following:
  - included or determined to be eligible for inclusion in the California Register; or
  - included in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k).
- 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 these criteria, the lead agency would consider the significance of the resource to a California Native American Tribe.

AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American Tribes (Public Resources Code Sections 21080.3.1, 21080.3.2, and 21082.3).

Public Resources Code Section 21084.3 addresses mitigation for tribal cultural resources impacts as follows:

a) Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.

b) If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2, the following are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:

   1. Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
   2. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
      - Protecting the cultural character and integrity of the resource.
      - Protecting the traditional use of the resource.
      - Protecting the confidentiality of the resource.
   3. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
   4. Protecting the resource.

3.18.2.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Project components; therefore, the Project is not subject to local discretionary regulations. Pursuant to CPUC General Order 131-D, Section XI.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Therefore, the local regulations below are provided only for informational purposes.

Kern County

The following policy in the Kern County General Plan (Kern County 2004) relates to tribal cultural resources.

> ***Policy 25:*** The County will promote the preservation of cultural and historic resources, which provide ties with the past and constitute a heritage value to residents and visitors.

San Bernardino County

San Bernardino County Code of Ordinances

San Bernardino County's Code of Ordinances includes a Cultural Resources Preservation (CP) Overlay (Chapter 82.12). This code of ordinances includes regulations pertaining to the identification and preservation of important archaeological and historical resources. The chapter outlines application requirements for projects proposed within a CP Overlay, as well as development standards and an explanation of the need for a Native American monitor.

The code of ordinances states that the CP Overlay may be applied to areas where archaeological and historic sites that warrant preservation are known or are likely to be present. Specific identification of known cultural resources is indicated by listing in one or more of the following inventories: the California Archaeological Inventory, California Historic Resources Inventory, California Historical Landmarks, California Points of Historic Interest, and/or National Register of Historic Places.

The code of ordinances also states that the local tribe will be notified if Native American cultural resources are discovered during construction within a high-sensitivity CP Overlay district. The tribe may request that a Native American monitor be present during grading or excavation to protect and/or recover artifacts (San Bernardino County 2007).

Countywide Plan—Cultural Resources Element

The following policies for tribal cultural resources are identified in the San Bernardino Countywide Plan's Cultural Resources Element (San Bernardino County 2020).

> ***Policy CR-1.1: Tribal notification and coordination.*** We notify and coordinate with tribal representatives in accordance with state and federal laws to strengthen our working relationship with area tribes, avoid inadvertent discoveries of Native American archaeological sites and burials, assist with the treatment and disposition of inadvertent discoveries, and explore options of avoidance of cultural resources early in the planning process.

Policy CR-1.2: Tribal planning. We will collaborate with local tribes on countywide planning efforts and, as permitted or required, planning efforts initiated by local tribes.

Policy CR-1.3: Mitigation and avoidance. We consult with local tribes to establish appropriate project-specific mitigation measures and resource-specific treatment of potential cultural resources. We require project applicants to design projects to avoid known tribal cultural resources, whenever possible. If avoidance is not possible, we require appropriate mitigation to minimize project impacts on tribal cultural resources.

Policy CR-1.4: Resource monitoring. We encourage active participation by local tribes as monitors on surveys, testing, excavation, and grading phases of development projects with potential impacts on tribal resources.

City of California City

The following policies and implementation measure are identified in the California City General Plan's Open Space and Conservation Element (City of California City 2009) for tribal cultural resources and archaeological resources.

Policies

- Preserve historical and cultural resources which may exist and are of significant value to the community now and in the future.
- Encourage public and private efforts toward preserving structures or sites which are of historic value to the community.

Implementation Measure C-14**:** The City shall require the preservation of historical and cultural resources by implementation of the following measures:

- Encourage local groups and schools to enhance and promote historical resources and community activities for all residents within the General Planning Area.
- Prior to issuance of a grading or building permit, new development proposal shall be required to complete records and literature search and/or a Phase 1 Assessment to identify the presence of any specific cultural resources and/or Native American sacred lands at the project site. Recommendations shall be incorporated into project as conditions of approval.

3.18.3 Applicant Proposed Measures and Best Management Practices

3.18.3.1 Applicant Proposed Measures

Southern California Edison (SCE) has identified Applicant proposed measures (APMs) to minimize impacts of the Project on tribal cultural resources. The following APMs were designed to reduce impacts on cultural resources but would also reduce impacts on tribal cultural resources: APM CUL-1, *Develop a Cultural Resource Management Plan*; APM CUL-2, *Avoid Environmentally Sensitive Areas*; APM CUL-3, *Train Construction Personnel*; APM CUL-4, *Conduct Construction Monitoring*; and APM CUL-5, *Properly Treat Human Remains* (see Section 3.5.3.1, *Applicant Proposed Measures*). The following APMs were designed to reduce impacts on tribal cultural resources. The impact analysis assumes that the APMs would be

implemented (i.e., part of the Project) to reduce impacts on tribal cultural resources as discussed below.

- **APM TCR-1: Tribal Monitoring.** An archaeological monitor, and tribal monitor that is culturally affiliated with the Project area, may be present for ground-disturbing activities within or directly adjacent to identified tribal cultural resources. The archaeological and tribal monitors will consult the Cultural Resource Management Plan (CRMP; APM CUL-1) to determine when to increase or decrease the monitoring effort should the monitoring results indicate a change is warranted. Monitoring reports shall be prepared and submitted to the CPUC on a monthly basis.
- **APM TCR-2: Tribal Engagement Plan.** A tribal engagement plan shall be prepared, which will detail how Native American tribes will be engaged and informed throughout the Proposed Project. The tribal engagement plan will be included in the CRMP (APM CUL-1).

3.18.3.2 Best Management Practices

SCE has also proposed implementation of best management practices (BMPs) that are based on the California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook*. None of the BMPs are proposed to minimize impacts on tribal cultural resources.

3.18.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in significant tribal cultural resources effects on the environment if it 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

3.18.5 Direct and Indirect Effects

3.18.5.1 Approach to Analysis

To evaluate the Project's potential impacts on significant tribal cultural resources, CPUC initiated tribal consultation pursuant to AB 52 (see Section 3.18.1, *Environmental Setting*) to identify any tribal cultural resources that may be present within the Project area, to determine whether the Project would significantly affect these resources, and to consult with California Native American

Tribes that are traditionally and culturally affiliated with the Project area as early as possible to avoid inadvertent discoveries of Native American human remains and to best protect tribal cultural resources.

Impacts on tribal cultural resources that are also archaeological resources could result from Project-related ground-disturbing activities, including demolition, excavation, grading, trenching, vegetation clearance, the operation of heavy equipment, or other surface and subsurface disturbance that could damage or destroy surficial or architectural resources, or buried archaeological resources, including pre-contact materials (i.e., materials from the time before contact between Tribes and Europeans), historic-era materials, and/or human burials.

3.18.5.2 Direct and Indirect Effects of the Project

Whether the Project would 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, or 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:

ai. 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

aii. 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 Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American Tribe.

Impact 3.18-1: The Project would 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, or 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. (*Significant and Unavoidable*)

Construction

Project construction would affect tribal cultural resources as defined in Public Resources Code Section 21074. Based on the results of the NAHC's Sacred Lands File search, the records search, the pedestrian survey results, and Native American consultation, 144 archaeological resources and 75 isolates are present within the Project area; of these, 62 resources and 68 isolates have a pre-contact or indigenous component (Rincon 2025). Section 3.5, *Cultural Resources*, presents information regarding these resources and their eligibility for inclusion in the National Register, California Register, and as a unique archaeological resource. Seven of these resources (CalCity-S-063, CalCity-S-129, CalCity-S-142, CalCity-S-147, CalCity-S-154, CalCity-S-161, and CalCity-S-507) are eligible for the California Register and are also considered tribal cultural resources as they meet the requirements established in Public Resources Code Section 21074. No non-archaeological resources have been identified as tribal cultural resources through tribal

consultation within the Project area. The Project is likely to affect the seven identified tribal cultural resources that are listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources as defined in Public Resources Code Section 5020.1(k). Impacts to tribal cultural resources are considered significant if complete avoidance of these resources is not feasible.

Based on the archaeological sensitivity analysis presented in Section 3.5, *Cultural Resources*, there is a high potential for unrecorded subsurface archaeological materials to be uncovered during the proposed ground-disturbing activities, particularly in areas that are undisturbed. Should any previously unrecorded archaeological resource and/or human remains be identified during Project ground-disturbing construction activities and be found to qualify as a tribal cultural resource pursuant to Public Resources Code Section 21074(a)(1) (determined to be eligible for listing in the California Register of Historical Resources or a local register of historical resources) and the *Unanticipated Discovery Protocol* identified in APM CUL-1, any impacts of the Project on the resource or indigenous human remains that are considered a tribal cultural resource would be significant.

To reduce impacts on documented tribal cultural resources and undocumented archaeological resources identified during Project construction that could qualify as tribal cultural resources, SCE has proposed the implementation of APM TCR-1, *Tribal Monitoring*, and APM TCR-2, *Tribal Engagement Plan*. These APMs allow for Native American monitoring during Project ground-disturbing activities within and directly adjacent to tribal cultural resources and the development of a plan for engaging with Native American tribes throughout the Project. Additionally, APMs identified in Section 3.5, *Cultural Resources*, require the following during Project implementation:

- Development of a cultural resources management plan, of which the tribal engagement plan would be a part, along with a cultural resources monitoring and reporting plan, monitoring protocol, unanticipated-discovery protocol, and data analysis and reporting (APM CUL-1, *Develop a Cultural Resource Management Plan [CRMP]*).
- Additional surveys, flagging, and avoidance of cultural resources where feasible (APM CUL-2, *Avoid Environmentally Sensitive Areas [ESA]*).
- Cultural resources awareness training (APM CUL-3, *Train Construction Personnel*).
- Archaeological monitoring (APM CUL-4, *Conduct Construction Monitoring*).
- Protocols to follow in the event of an inadvertent discovery of human remains (APM CUL-5, *Properly Treat Human Remains*).

Impacts on tribal cultural resources cannot be guaranteed to be mitigated to less than significant with implementation of the APMs described above, particularly when the extent and nature of the tribal cultural resource would not be known unless or until it is affected by the Project. As such, complete avoidance of impacts to tribal cultural resources is not feasible. Although APMs TCR-1 and TCR-2 would have the potential to reduce impacts on tribal cultural resources through coordination and monitoring, these APMs do not adequately address impacts on known cultural resources that are also tribal cultural resources that would be affected by the Project. To address

impacts, Mitigation Measure 3.18-1: *Public Interpretation Land Acknowledgement*, would support tribal visibility and promote tribal interests, which may reduce intangible impacts to tribal cultural resources.

Operation and Maintenance

The Project's operation and maintenance would not affect tribal cultural resources because no ground disturbance would occur at depths greater than those reached during construction.

> **Mitigation Measure 3.18-1: Public Interpretation Land Acknowledgement.**
>
> SCE shall, in coordination with Consulting Native American tribes, design and implement a public interpretation land acknowledging that this project is built on indigenous land. The public interpretive land acknowledgement program may include a land acknowledgement, information on local Native Americans, or artwork, preferably by local Native American artists, to be included as part of public outreach and education about the project, such as project notifications sent to the public or project websites.
>
> Prior to completion of project construction, SCE shall prepare and implement land acknowledgement interpretation plan in consultation with affiliated local Native American representatives to guide the acknowledgment program. The plan shall be reviewed by CPUC and shall identify, as appropriate, the proposed location or distribution for the acknowledgement program to include project outreach materials such as project webpages or other online project education or notification outreach and the proposed content of the land acknowledgement public interpretation program. The detailed content, media, and other characteristics of such an interpretive program shall be coordinated by the Consulting Native American tribes and the CPUC, and be approved by CPUC. The final components of the public interpretation program shall be distributed following the agreed upon schedule in the public interpretation land acknowledgement plan. Tribal representatives shall be compensated for their work as identified in the agreed-upon scope of work for the plan.
>
> **Significance after Mitigation:** Mitigation Measure 3.18-1 does not address potential impacts to physical components of tribal cultural resources; as such, it does not mitigate impacts to tribal cultural resources to a less-than-significant level. The impact would therefore remain **significant and unavoidable**.

3.18.5.3 Cumulative Effects Analysis

Criteria ai and aii)

Impact C.3.18.1: The Project impact related to 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, or 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, would be cumulatively considerable. (*Significant and Unavoidable*)

This section presents an analysis of the cumulative effects of the Project when considered in combination with other past, present, and reasonably foreseeable future projects that could result in cumulatively considerable Project impacts on tribal cultural resources. Significant cumulative impacts could occur if the incremental impacts of the Project would combine with the incremental

impacts of one or more cumulative projects. Section 3.0.3, *Approach to the Cumulative Impacts Analysis*, includes Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, which lists past, present, and reasonably foreseeable future projects within a 5-mile radius of the Project area.

The geographic context for the analysis of cumulative impacts associated with tribal cultural resources includes ongoing and future projects within 5 miles of the Project's components as described in Section 3.0. This geographic context of analysis is appropriate because the tribal cultural resources within this radius are expected to be similar to those that occur on the Project area because their proximity, similar environments, landforms, and hydrology are expected to have resulted in similar land uses over time. Based on the professional experience of the EIR preparers and the tribes, research, and knowledge of the pre-contact context, the area within this 5-mile radius of the Project area may contain a significant archaeological and historical record that has not been well documented or recorded to date. Therefore, this analysis conservatively assumes that the land within this area contains tribal cultural resources that are not yet known.

The temporal context for cumulative impacts on tribal cultural resources would commence upon the Project's ground-disturbing activities. Operation and maintenance of the Project or Projects in the cumulative scenario would have no impact on tribal cultural resources because no ground disturbance would occur at depths beyond those reached during construction. In this context, the incremental impacts of the Project could combine with similar incremental impacts of past, other present, and reasonably foreseeable future projects within the 5-mile radius of the site to cause or contribute to a significant cumulative impact if any of the significance criteria were exceeded.

Based on the archaeological sensitivity analysis presented in Section 3.5, *Cultural Resources*, there is a high potential for unrecorded subsurface archaeological materials to be uncovered during Project ground-disturbing activities, particularly in areas that are undisturbed. Should any previously unrecorded archaeological resource and/or human remains be identified during Project ground-disturbing construction activities and be found to qualify as a tribal cultural resource pursuant to Public Resources Code Section 21074(a)(1) (determined to be eligible for listing in the California Register of Historical Resources or a local register of historical resources) and the *Unanticipated Discovery Protocol* identified in APM CUL-1, any impacts of the Project on the resource or indigenous human remains that are considered a tribal cultural resource would be significant. Compliance with existing regulations and implementation of APM TCR-1 and APM TCR-2, would reduce the Project potential impact related to the discovery of tribal cultural resources, but the impact would be significant. Even with implementation of Mitigation Measure 3.18-1, which would require a public interpretation land acknowledgement, the Project impact would be **significant and unavoidable**.

The cumulative projects in the vicinity could result in similar impacts on tribal cultural resources as those described above for the Project. The potential impacts of the Project, when combined with similar impacts from other current and probable future projects in the vicinity, could result in a significant cumulative impact on tribal cultural resources. The Project's contribution to this impact could be cumulatively considerable.

With implementation of Mitigation Measure 3.18-1, the Project's contribution to cumulative impacts on tribal cultural resources would still be considerable, and the impact would be **significant and unavoidable**.

Mitigation: Implement Mitigation Measure 3.18-1.

Significance after Mitigation: Mitigation Measure 3.18-1 does not address potential impacts to physical components of tribal cultural resource; as such, it does not mitigate the Project's contribution to the cumulative impact on tribal cultural resources to a less-than-significant level. The cumulative impact would therefore remain **significant and unavoidable**.

3.18.6 References

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3.19 Utilities and Service Systems

This section evaluates potential impacts of the Project on utilities and service systems. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The CPUC did not receive scoping comments pertaining to utilities and service systems.

3.19.1 Environmental Setting

3.19.1.1 Utilities

The Project would be located in unincorporated Kern and San Bernardino counties, the city of California City, and Edwards Air Force Base (EAFB) in the Mojave Desert region of California, on federal, state, municipal, and private property.

Utility providers that serve the region in the vicinity of the Project include water wholesalers and retailers, wastewater districts, natural gas, and electric companies. These providers are listed in **Table 3.19-1** and summarized in the discussion that follows.

TABLE 3.19-1
EXISTING UTILITY PROVIDERS

Utility	Provider
Water	Antelope Valley–East Kern Water Agency (wholesaler)
	Mojave Water Agency (wholesaler)
	City of California City (retailer)
	Mojave Public Utility District (retailer)
	North Edwards Water District (retailer)
	Boron Community Services District (CSD) (retailer)
	Desert Lake CSD (retailer)
Sewer/Wastewater Treatment	City of California City
	Rosamond CSD
	Mojave Public Utility District
	Boron CSD
	Desert Lake CSD
Natural Gas	Southern California Gas Company
	Pacific Gas and Electric Company
Electricity	Southern California Edison

NOTE: CSD = Community Services District

Water Supply

Numerous water providers serve the Project area. As listed in Table 3.19-1, water supply in the region is provided through wholesale public agencies, such as Antelope Valley-East Kern Water Agency (AVEK) and Mojave Water Agency (MWA), and municipal retailers such as the City of California City, and community services districts (CSDs), or water districts. Many water providers in the region obtain all or a substantial portion of their supply through imported surface water purchased from AVEK. AVEK is a wholesale, supplemental water provider that treats, delivers, and stores water. The agency provides treated water to retail agencies and untreated water to agricultural customers within its 2,400-mile service area including parts of the city of Los Angeles, and Kern and Ventura counties (AVEK 2024). The discussion below focuses on AVEK, MWA, and the City of California City, as these are the primary water suppliers in the Project area.

City of California City

The City of California City (City) provides retail water service, serving approximately 14,000 residents within the city boundaries. The City maintains approximately 313 miles of water main lines and a 20-inch transmission line, which connects the City wells to the reservoirs located in the foothills, serving over 4,400 active connections. The City utilizes three water sources: groundwater, imported surface water, and recycled water. The City currently utilizes six groundwater wells and surface water purchased from AVEK for its water supply. Imported surface water can be purchased from AVEK through standing agreements with the City. The City's groundwater wells currently have the capability to produce 5,100 gallons per minute.

The city is within the Fremont Valley Groundwater sub-basin (FVGB) of the South Lahontan Hydrologic Study Area. The FVGB is 523 square miles (334,720 acres) of which 203 square miles (129,920 acres) are located the city boundaries. Groundwater in the sub-basin flows from the alluvial fans along the mountains towards this depression. The City, on average, pumps 3,300 acre-feet (1,075 million gallons) per year from the aquifer, which provides its customers with approximately 75 percent of their potable water supply. As reported in the City's Urban Water Management Plan, the sustainable yield for groundwater extraction is approximately 6,900 acre-feet per year (City of California City 2023).

Antelope Valley–East Kern Water Agency

AVEK's groundwater wells are within the Antelope Valley Groundwater Basin (AVGB), an adjudicated basin defined by the California Department of Water Resources (DWR) as Basin Number 6-44. The AVGB encompasses 1,580 square miles spanning Los Angeles, Kern, and San Bernardino counties. The sustainable yield of the AVGB across all year types and drought conditions is expected to be approximately 80,000 acre-feet per year (afy).

Groundwater levels in some areas have declined significantly since the early 1900s due to over-extraction; groundwater levels have declined more than 200 feet throughout most of the AVGB, resulting in increased pumping lifts, reduced well efficiency, and land subsidence of more than 6 feet in some areas. The majority of these areas of land subsidence are concentrated in areas south of EAFB, near the city of Lancaster, although the declining groundwater levels have

occurred throughout the basin (USGS 2003). The AVGB was adjudicated[1] in 2015 after 15 years of complex proceedings among more than 4,000 parties, including public water suppliers, landowners, small pumpers and non-pumping property owners, and the federal and state governments. The Antelope Valley Area of Adjudication covers approximately 1,390 square miles, or 90 percent of the groundwater basin.

AVEK currently sources its water supplies from a State Water Project (SWP) contract, groundwater, and other imported water not sourced from SWP. AVEK currently has roughly 90,000 acre-feet of imported water stored within its groundwater banks for future recovery and is implementing infrastructure projects to expand its capacity to recharge groundwater levels, recover water, and distribute recovered water. Based on projected water demand, AVEK would have adequate water supply in storage at the end of a 5-year drought (AVEK 2021).

Mojave Water Agency

In June of 1963, MWA entered a State Water Project water service contract (SWP Contract) with DWR. The SWP Contract authorized DWR to deliver SWP water to MWA under certain terms and conditions.

MWA's water supply activities intersect with groundwater management in the MWA service area. MWA uses its SWP surface water for groundwater recharge as part of the Mojave Basin Area Adjudication and the Warren Basin Adjudication. For both adjudications, MWA imports SWP water through its SWP Contract and delivers the water to various recharge sites to meet the essential purposes of the adjudications. MWA also stores its water assets in the Mojave Basin and the Morongo Basin for future access and delivery for intended uses.

The MWA service area overlies all or a portion of 36 groundwater basins and subbasins. Collectively, these basins and subbasins are broadly grouped into two larger hydrogeologic distinct areas—the South Lahontan Hydrologic Region and the Colorado River Hydrologic Region.

Managed groundwater is the primary water supply in the adjudicated Mojave Basin Area and the Morongo Basin Area. Water pumped from wells supplies retail agencies and consumers within the MWA service area. The managed groundwater system incorporates a number of sources that mix and blend to become the groundwater sources available in the basins. Local supplies consisting of percolated natural supplies, wastewater imports, imported water, and return flows derived from wastewater and irrigation make up the total managed groundwater supply. Together, these supplies constitute the managed groundwater that make up the majority of supply in MWA's service area (MWA 2021).

MWA characterizes the natural supplies available for the Mojave Basin Area and the Morongo Basin Area as 57,349 afy. This supply is derived from a reasonable assessment of natural supply available and the groundwater basins conditions as provided through the applicable groundwater management entities. The long-term average natural supplies are fed by percolated precipitation

[1] When water users within a basin are in dispute over legal rights to the water, a court can issue a ruling known as an adjudication. Adjudications can cover an entire basin, a portion of a basin, or a group of basins and all non-basin locations between. Pursuant to the Sustainable Groundwater Management Act (SGMA), groundwater basins that have been adjudicated are subject to Adjudicated Area Reporting.

and natural runoff in area stream systems. Although these supplies may fluctuate on an annual basis, the long-term average supply availability should remain relatively constant (MWA 2021).

Wastewater

Sanitary waste facilities in the vicinity of the Project area include the City of California City wastewater treatment plant, Rosamond water treatment plant, and Lancaster water reclamation plant. The majority of wastewater produced in the Project area is treated with on-site septic systems in unincorporated Kern and San Bernardino counties. California City has a sewer collection system in the north part of the city; however, it is estimated that most residents utilize on-site wastewater treatment (septic) systems (City of California City 2023). The outskirts of the Project area are served through local community services districts including Boron and Desert Lake CSDs and Mojave Public Utility District.

City of California City Wastewater Collection and Treatment

The City of California City wastewater is collected in the sewage mains is delivered by gravity lines and lift stations to the City's sanitary facility, located on Nelson Drive in the northeast part of the city. The City owned and operated wastewater treatment plant has a capacity of 1 million gallons per day (mgd) and serves only the residents of the city. The City does not provide treatment for septic systems or waste from portable toilets (City of California City 2024).

Rosamond Community Services District

The 14 mgd Rosamond Water Treatment Plant was established to support the needs of consumers in southeastern Kern County, an area that includes Rosamond, Mojave, California City, EAFB, and Boron. Rosamond CSD treats and reclaims treated effluent through a water reclamation plant constructed in 2020. Reclaimed water replenishes groundwater through aquifer storage and recovery, as part of the groundwater adjudication settlement.

Lancaster Water Reclamation Plant

The Lancaster Water Reclamation Plant (WRP) currently provides primary, secondary, and tertiary treatment for a design capacity of 18 mgd and serves a population of approximately 160,000 people. The Lancaster WRP, operated by the Los Angeles County Sanitation District (LACSD), accepts septic tank waste and portable toilet waste. In addition to producing recycled water from wastewater, the Lancaster WRP processes all wastewater solids generated at the plant. The wastewater solids are anaerobically digested, centrifugally dewatered, and further dried in drying beds. The dried biosolids are hauled away and beneficially used. Methane gas is produced during the digestion process and is used to heat the anaerobic digesters (LACSD 2024).

Stormwater

The City of California City maintains over 200 storm drain structures and approximately 40 miles of drainage pipes and ditches. Stormwater conveyance infrastructure in the vicinity of the Project is generally limited to the area in and around the City of California City. Although these systems are not mapped, stormwater drains are generally located along paved, public roadways. The California City Street Division is responsible for inspection, maintenance, and repair of storm drain system in the public ROW and in drainage easements. This includes clearing blocked drains, removing debris from storm drain structures, cleaning and repairing damaged drainpipes.

The City storm drains are designed to handle normal water flow, but occasionally flood during conditions of heavy rain. Culverts and other stormwater conveyance structures are located throughout the Project area.

Perennial, intermittent, and ephemeral watercourses are crossed at grade by existing SCE and public access roads. Watercourses are generally crossed at grade or are culverted; larger watercourses crossed by improved roads or human-made watercourses (e.g., canals) are bridged or culverted. Stormwater improvements proposed as part of the Project are included to manage runoff.

Natural Gas

The Project is within the natural gas service territory of SoCalGas and PG&E. Natural gas lines that occur near the Project sites and alignments are shown in **Figure 3.19-1**. Natural gas transmission pipelines generally occur parallel to State Route 58 and U.S. Highway (U.S.) 395, with additional pipelines extending toward EAFB (USDOT 2024).

The proposed Kramer–Cal City 115 kV Subtransmission Line alignment intersects two existing natural gas lines in the vicinity of Kramer Junction and parallels an existing natural gas pipeline along U.S. 395. The existing natural gas pipeline is located across U.S. 395 from the proposed Kramer–Cal City 115 kV Subtransmission Line alignment, approximately 315 feet east of the alignment and outside of proposed and existing SCE rights-of-way (ROWs) (SCE 2023). The City of California City is not served by a natural gas transmission pipeline.

Existing Electrical System

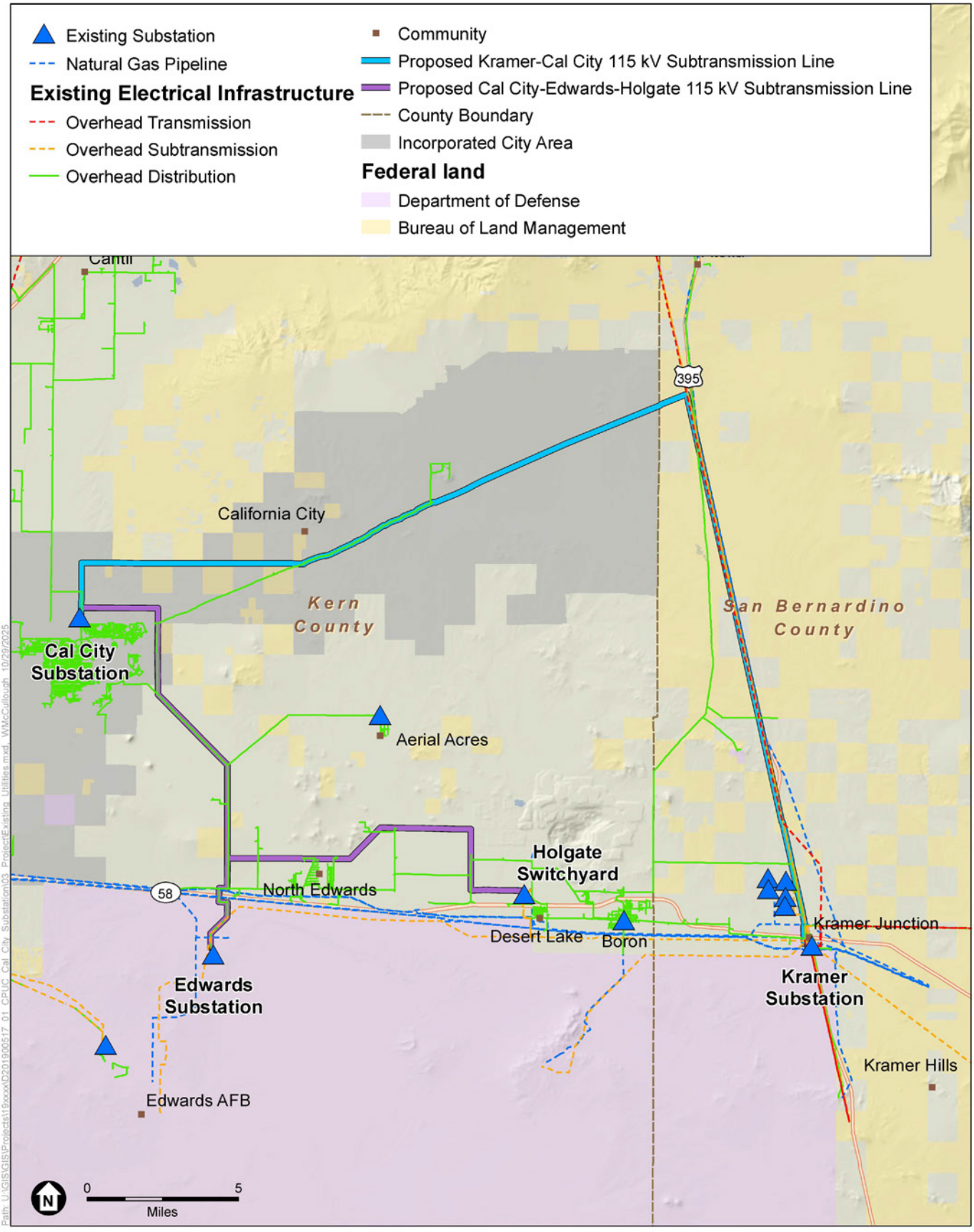
The infrastructure associated with the existing Cal City 33/12 kV electrical system provides power distribution to communities in the Project area, including California City and surrounding communities. Existing infrastructure includes transmission, subtransmission, and distribution lines serving unincorporated Kern and San Bernardino counties and EAFB. Existing electrical infrastructure systems are mapped in Figure 3.19-1.

Telecommunications

Internet communication networks in the Project area utilize cable, DSL, and satellite systems. The internet providers in the area include companies such as: Spectrum, Frontier, Race Communications, Hughesnet, and ViaSat. Cellular phone service is provided in the Project area by AT&T.

3.19.1.2 Solid Waste Management

Disposal facilities for non-metallic recyclable materials and non-recyclable materials are available at the Boron Sanitary Landfill (south of Boron in unincorporated Kern County), the California City Recycling and Transfer Station (in California City), the McKittrick Waste Treatment Site (in McKittrick), the Mojave-Rosamond Sanitary Landfill (south of Mojave in unincorporated Kern County), the Ridgecrest Recycling & Sanitary Landfill (west of Ridgecrest in unincorporated Kern County), and the Tehachapi Sanitary Landfill (east of Tehachapi in unincorporated Kern County). Of these, all but the California City Recycling and Transfer Station and McKittrick Waste Treatment Site accept construction/demolition debris. Information on solid waste disposal facility capacities and types of solid waste accepted is provided in **Table 3.19-2**.



SOURCES: ESA, 2023; SCE, 2023

Cal City Substation 115 kV Upgrade Project

Figure 3.19-1
Existing Electric and Natural Gas Infrastructure

TABLE 3.19-2
SOLID WASTE AND HAZARDOUS WASTE DISPOSAL FACILITIES

Landfill	Location	Total Maximum Permitted Capacity (cy)	Remaining Capacity (cy)	Estimated Date to Close	Distance from Project	Waste Types accepted
Solid Waste Disposal Facilities						
Boron Sanitary Landfill	11400 Boron Avenue Boron, CA 93516	1,057,000	191,380	2048	3 miles southeast	Construction, demolition
California City Recycling and Transfer Station	19901 Neuralia Road California City, CA 93505	18,385	—	—	3 miles	—
Edwards Airforce Base Main Base Sanitary Landfill	EAFB (unincorporated Kern County)	2,250,000	1,078,875	2028	4 miles southwest	Waste generated by EAFB operations
McKittrick Waste Treatment Site	56533 Highway 58 McKittrick, CA 93251	5,474,900	769,790	2059	98 miles	Contaminated Soil, Industrial
Mojave-Rosamond Sanitary Landfill	400 Silver Queen Road Mojave, CA 93501	78,000,000	76,310,297	2123	14 miles	Industrial, Construction, demolition
Ridgecrest Recycling & Sanitary Landfill	3301 Bowman Road Ridgecrest, CA 93555	10,500,000	5,037,428	2045	24 miles	Industrial, Construction, demolition
Hazardous Materials Disposal Facilities						
Clean Harbors Buttonwillow LLC	2500 West Lokern Road, Buttonwillow, CA	13,250,000	unidentified	2040	95 miles	Hazardous, industrial, contaminated soil

SOURCE: CalRecycle 2024

3.19.2 Regulatory Setting

3.19.2.1 Federal

No federal regulations pertaining to utilities and service systems apply to the Project.

3.19.2.2 State

The California Integrated Waste Management Act

The Integrated Waste Management Act was enacted in 1989 and codified in Public Resources Code Section 40050 et seq. The Act required all California cities, and unincorporated portions of counties, and approved regional solid waste management agencies to divert a minimum of 50 percent of solid waste from landfills by the year 2000 and to maintain the 50 percent diversion rate (as a minimum) going forward. Diversion includes waste prevention, reuse, and recycling. The Act resulted in the creation of the California Integrated Waste Management Board, which now is known as the California Department of Resources Recycling and Recovery (CalRecycle). The Act also establishes a comprehensive statewide system of permitting, inspections, and

maintenance for solid waste facilities, and authorized local jurisdictions to impose fees based on the types and amounts of waste generated.

Sustainable Groundwater Management Act

In 2014, the Sustainable Groundwater Management Act (SGMA) was signed into law by Governor Edmund G. Brown. SGMA requires governments and water agencies of high and medium priority groundwater basins to manage over drafting to bring the basins to balanced levels of pumping and recharge. SGMA empowers local agencies to form Groundwater Sustainability Agencies to manage basins and requires development and implementation of Groundwater Sustainability Plans for high and medium priority groundwater basins in California. The groundwater subbasins in the Project area are not considered medium or high priority; however, adjudicated subbasins in the Project area, including the Antelope Valley Groundwater Basin, the Mojave Basin Area, and the Warren Basin would be required to submit yearly reports to DWR.

Title 22 California Code of Regulations Division 4.5

Title 22 of the California Code of Regulations (CCR) discusses an array of requirements with respect to the disposal and recycling of hazardous and universal wastes. Specific standards and requirements are included for the identification, collection, transport, disposal, and recycling of hazardous wastes. Additional standards are included for the collection, transport, disposal, and recycling of universal wastes, where universal wastes are defined as those wastes identified in Section 66273.9 of Title 22 CCR, including batteries, electronic devices, mercury containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements include recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility. Division 4.5 of Title 22 also provides restrictions and standards relevant to waste destination facilities and provides authorization requirements for various waste handlers. Title 22 includes California's Universal Waste Rule, as well as other additional waste handling and disposal requirements.

Title 27 California Code of Regulations

Title 27 CCR defines regulations for the treatment, storage, processing, and disposal of solid waste. The State Water Resources Control Board maintains and regulates compliance with CCR Title 27. The Project's compliance would be enforced by the Lahontan RWQCB (Region 6).

California Health and Safety Code Section 25150.7

The state requirements for the use, reuse, handling, and disposal of treated wood waste are identified in the California Health and Safety Code Section 25150.7 to ensure the protection of public health and the environment. The Project's proposed removal of distribution wood poles would be subject to these requirements.

California Government Code Regional Notification System (Section 4216)

Section 4216 of the California Government Code protects underground structures during excavation. Under this law, excavators are required to contact a regional notification center at least 2 days prior to excavation of any subsurface installations. In the Project area, DigAlert [Underground Service Alert of Southern California (USA/SC)] is the regional notification center.

USA/SC notifies utility providers with buried lines within 1,000 feet of the excavation, and those providers are required to mark the specific location of their facilities prior to excavation. The code also requires excavators to probe and expose existing utilities, in accordance with state law, before using power equipment. Violations are subject to a civil penalty and other liability (Government Code Sections 4216.6 and 4216.7).

California Public Utilities Commission General Order 131-D

CPUC regulates services and utilities and assures California's access to safe and reliable utility infrastructure and services. The essential services regulated include electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. CPUC implements CEQA for utility construction by SCE and the other public utilities under its jurisdiction and regulates the location and relocation of power lines by investor-owned utilities, such as SCE. Section XIV.B of General Order 131-D clarifies that local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to CPUC jurisdiction (CPUC 1995).

3.19.2.3 Local

CPUC General Order No. 131-D explains that local land use regulations would not apply to the Project. However, for informational purposes, the policies of local general plans and other planning documents pertaining to utilities and service systems that would otherwise be relevant to the Project and alternative(s) are described below.

Kern County

Kern County General Plan

Kern County recognizes the importance of economical and efficient delivery of public services and has developed policies related to utilities and service systems (Kern County 2009). The Kern County General Plan's Land Use, Open Space, and Conservation Element, Section 1.4, *Public Facilities and Services*, contains the following policies pertaining to utilities and service systems:

> **Public Facilities and Services Policies**
>
> ***Policy 2:*** The efficient and cost-effective delivery of public services and facilities will be promoted by designating areas for urban development which occur within or adjacent to areas with adequate public service and facility capacity.
>
> b. Ensure that adequate storage treatment and transmission facilities are constructed concurrently with planned growth.
>
> c. Ensure that the maintenance and repair of existing water systems.
>
> d. Encourage the utilization of wastewater treatment facilities which provide for the reuse of wastewater.
>
> g. Ensure that adequate collection, treatment and disposal facilities are constructed concurrently with planned growth.
>
> ***Policy 13:*** The County shall ensure that adequate landfill capacity for the residents and industry of Kern County.

Kern County and Incorporated Cities Integrated Waste Management Plan

The Kern County and Incorporated Cities Integrated Waste Management Plan addresses issues pertaining to non-hazardous waste disposal and other waste facilities. The plan was established in response to the California Integrated Waste Management Act of 1989 (AB 939) and includes the following solid waste elements: Source Reduction and Recycling Element, Household Hazardous Waste Element, Non-disposal Facility Element, Countywide Siting Element, and the Countywide Integrated Waste Management Summary Plan.

Kern County Integrated Waste Management Plan Source Reduction and Recycling Element Unincorporated Kern County 2015 Amendment

The Kern County Integrated Waste Management Plan 2015 Amendment addresses issues pertaining to non-hazardous waste disposal and other waste facilities. The plan was established in response to the California Integrated Waste Management Act of 1989 (AB 939) and includes an update to the Source Reduction and Recycling Element.

San Bernardino

Countywide Policy Plan

The San Bernardino Countywide Policy Plan provides the policy framework and establishes the long-range vision for how and where the unincorporated areas will grow, and establishes goals, policies, and programs to foster healthy, livable, and sustainable communities (San Bernardino County 2020). The Infrastructure and Utilities Element contains the following policies relevant to the Project:

> ***Policy IU-1.3: Recycled water.*** We promote the use of recycled water for landscaping, groundwater recharge, direct potable reuse, and other applicable uses in order to supplement groundwater supplies.
>
> ***Policy IU-4.1: Landfill capacity.*** We maintain a minimum ongoing landfill capacity of 15 years to serve unincorporated waste disposal needs.
>
> ***Policy IU-4.3: Waste diversion.*** We shall meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce greenhouse gas emissions and use of natural resources through the reduction, reuse, or recycling of solid waste.
>
> ***Policy IU-5.1: Electricity and natural gas service.*** We partner with other public agencies and providers to improve the availability and stability of electricity and natural gas service in unincorporated communities.
>
> ***Policy IU-5.3: Underground facilities.*** We encourage new and relocated power and communication facilities to be located underground when feasible, particularly in the Mountain and Desert regions.
>
> ***Policy IU-5.4: Electric transmission lines.*** We support the maintenance of existing and development of new electric transmission lines along existing rights-of-way and easements to maintain the stability and capacity of the electric distribution system in Southern California.
>
> ***Policy IU-5.5: Energy and fuel facilities.*** We encourage the development and upgrade of energy and regional fuel facilities in areas that do not pose significant environmental or

public health and safety hazards, and in a manner that is compatible with military operations and local community identity.

Policy IU-5.6: Dig once approach. We encourage infrastructure, telecommunication, and utility planning and projects to coordinate so that improvements are made concurrently or in such a manner that minimizes disruption to rights-of-way and reduces costs.

California City

City of California City General Plan

The City of California City General Plan is a long-range document that comprises the official statement of the City toward the future character and quality of development within its planning area (City of California City 2009). The Open Space and Conservation Element contains the following implementation measure related to utilities and service systems:

Implementation Measure S-23. The City shall require that new development proposals demonstrate the availability of fire, police, emergency response, and solid waste disposal services during the environmental review and discretionary approval process.

City Code of Ordinances Title 6-10.106 Waste Management Plan

Section 6-10.106 of California City's Code of Ordinances includes standards for a Waste Management Plan. Under Section 6-10.106, every applicant would be required to submit a properly completed initial Waste Management Plan, on a form as prescribed by the City, to the Building Department as a portion of the building or demolition permit process. The Plan is required to show how the applicant will satisfy the diversion requirement by diverting specific materials from disposal. The applicants are encouraged to consult with the City's authorized agent in preparation of the plan. Approval of the plan as complete and adequate would be a condition precedent to the issuance of any building or demolition permit. SCE has indicated that it would not need a California City building or demolition permit (SCE 2025).

3.19.3 Applicant Proposed Measures and Best Management Practices

3.19.3.1 Applicant Proposed Measures

No Applicant proposed measures have been proposed to address potential impacts on utilities or service systems.

3.19.3.2 Best Management Practices

SCE has proposed implementation of best management practices (BMPs) that are based on California Stormwater Quality Association's 2019 *California Stormwater Best Management Practices Handbook*. The BMPs intended for runoff and erosion control are listed in Section 2.12.2 and would be implemented as part of the Project.

3.19.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project would result in a significant impact related to utilities and service systems if it would:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;

c) 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;

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

The CPUC has identified additional CEQA impact criteria that are specific to the types of projects evaluated by the CPUC to be considered in addition to the criteria identified in Appendix G of the CEQA Guidelines (CPUC 2019). With regard to utilities and service systems, the Project would also result in a significant impact related to utilities and service systems if it would:

f) Increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts.

3.19.5 Direct and Indirect Effects

3.19.5.1 Approach to the Analysis

This environmental analysis of the potential impacts on utilities and service systems related to the construction, operation, and maintenance of the Project is based on a review of existing utility and service systems in the Project area, information regarding proposed construction details, potential uses, and associated Project operations and maintenance activities based on information provided in Chapter 2, *Project Description*.

This analysis assumes that the Project would implement the BMPs described in Section 3.19.3, *Applicant Proposed Measures and Best Management Practices*, and that the Project would comply with applicable federal and state laws and regulations summarized in Section 3.19.2. This analysis also assumes that federal, state, and local agencies would continue to enforce applicable requirements to the extent that they do so now, recognizing that compliance with many of the regulations is an independently enforceable condition of permit approvals.

After considering the implementation of the Project, and the assumed compliance with the required regulatory requirements, the analysis below identifies if the significance thresholds listed in Section 3.19.4 would be exceeded and, therefore, a significant impact would remain.

3.19.5.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Water

Water requirements for Project construction and operation would consist primarily of supplies required for dust suppression; however, the Project would not result in the construction or relocation of facilities that would require ongoing water treatment. Therefore, there would be no impact associated with new or expanded water facilities. *(No Impact)*

Wastewater

As discussed in Section 2.7.13.2, *Liquid Waste*, sanitary waste associated with temporary use of portable toilets is the only wastewater that would be generated during Project construction. No other wastewater (e.g., drilling muds, contaminated waters) is expected to be generated by the Project. All sanitary facilities would be portable and temporary, and wastewater would be temporarily stored on-site. Sanitary waste from the portable toilets could be transported and treated at the Lancaster Water Reclamation Plant. Therefore, the Project would not require the expansion of any additional wastewater facilities and there would be no impact. *(No Impact)*

Natural Gas

The Project would not result in the consumption of natural gas and would not require the construction or operation of new natural gas utilities to support the Project. There would be no impact associated with the construction or operation of new natural gas utilities. *(No Impact)*

Relocation/Construction of New Stormwater Drainage Features, Electrical Facilities, and Telecommunications Facilities; and Relocation of Natural Gas Facilities

As discussed in Section 2.7.4, construction of the Project could result in the minor relocation of existing utilities before the start of excavation. Consistent with state regulations pertaining to regional utility notification (California Government Code Section 4216), SCE and/or its construction contractor would identify, mark, and locate existing subsurface utilities before the start of activities that require excavation. This would entail contacting DigAlert (or a similar service), conducting visual observations, exploratory excavations (i.e., potholing), and/or using buried line–locating equipment to probe and expose existing utilities, in accordance with state law, before using power equipment. SCE would be required to identify and avoid existing utilities during subsurface work. If any conflicts were identified, the Project poles would be realigned as appropriate. Consistent with regulatory requirements, SCE would be required to notify and coordinate with all affected utility companies.

The Project would also involve the construction of new electrical, telecommunications systems, and stormwater drainage features as part of the Project design, as discussed in Chapter 2, *Project Description*. The environmental effects of these new structures are analyzed throughout this EIR. The Project proposes to replace, modify, and install electrical, telecommunications systems, and stormwater drainage facilities within or near existing SCE facilities and/or ROWs along portions of the Project alignments where such existing facilities and/or ROWs already exist. New ROWs are also proposed to accommodate the subtransmission lines. SCE may be able to use portions of its existing land rights and/or ROW along portions of the Project alignment (see Appendix A for existing SCE ROW locations).

Impact 3.19-1a: The Project would require construction of new, expanded stormwater drainage that could cause significant environmental effects. (*Less than Significant with Mitigation*)

The Project could alter stormwater drainage in the Project area either by relocating established stormwater infrastructure or by altering water drainage patterns within the Project area, discussed in additional detail in Section 3.10, *Hydrology and Water Quality*. However, the Project would implement BMPs, as required by the Project's storm water pollution prevention plan (SWPPP) that are intended to reduce construction-related stormwater runoff.

As noted in Section 2.7.1.4, multiple watercourse crossings would require construction of permanent improvements such as hardened (riprap) structures placed upstream and downstream of the crossing along existing and proposed new access roads. The proposed new subtransmission lines would extensively alter drainage patterns and site contours. SCE would obtain all necessary permits and authorizations before construction would occur in drainages. During Project construction, temporary plating or matting would be placed over roadways that cross culverted waterways. This would be necessary to protect the stormwater infrastructure including culverts (some of which are owned and maintained by the City of California City Streets Department) and to support the movement of heavy construction equipment. Plating or matting may also be placed in other locations outside of the City jurisdiction depending on surface conditions at the time of construction. If affected during Project construction, restoration would consist of returning site contours to their preconstruction conditions. The Project applicant would implement BMPs pertinent to stormwater, as described in Section 2.12.2, including BMP SE-4, *Check Dam*; BMP SE-6, *Gravel Bag Berm*; BMP SE-7, *Street Sweeping and Vacuuming*; BMP SE-10, *Storm Drain Inlet Protection*; BMP TC-1, *Stabilized Construction*; and BMP TC-2, *Stabilized Construction Roadway*, to reduce stormwater related impacts. As discussed in Section 3.10, *Hydrology and Water Quality*, these BMPs are not specific regarding implementation and do not support the requirements of the current Construction General Permit.

Because extensive disturbance (quantified in Table 2-4) is proposed along the subtransmission line alignment, associated access roads, and the Cal City Substation, these components of the Project have the potential to result in erosion and contribute runoff to the storm drains or surface waters in the region during construction. This would be considered a **potentially significant** impact on stormwater systems.

For these reasons, implementation of Mitigation Measure 3.10-1a, *Erosion Control Plan* (described in Section 3.10 under Impact 3.10-1a), is recommended. This mitigation would augment the requirements in the Construction General Permit to ensure that the specific measures and BMPs are maintained, monitored, and tracked for effectiveness. Implementation of these measures would reduce the erosion and the resulting impact on stormwater systems to **less-than-significant** levels.

Mitigation: Implement Mitigation Measures 3.10-1a, *Erosion Control Plan*.

Significance after Mitigation: Less than Significant.

Impact 3.19-1b: The Project would require operation of new, expanded stormwater drainage; relocation/construction of new electrical and telecommunications facilities; and relocation of natural gas facilities that could cause significant environmental effects. (*Less than Significant*)

Operation and Maintenance of Stormwater Drainage Facilities

After construction, the Project would restore the existing natural drainages and ephemeral washes to preconstruction conditions in order to restore the hydrological function of the drainage systems. The Project would increase impervious surface area at the Cal City Substation; however, as designed, the Project would not create a substantial amount of additional runoff water during operation because a stormwater detention basin would capture runoff (as discussed in detail in Section 3.10, *Hydrology and Water Quality*).

Stormwater drainage improvements would be constructed as part of the expansion of the existing Cal City Substation. A stormwater detention basin would be constructed in the northeast portion of the site, with a minimum capacity of 5,700 cubic feet. Civil work at the Cal City Substation would include drainage improvements and construction of a new concrete-lined drainage channel. The 62-foot-wide channel would capture flows from the west and south off-site tributary area and would route flows around the Project infrastructure, conveying flows to a riprap area where a concrete wet crossing would allow a natural flow path outfall to an existing discharge point at the northeast corner of the property. Drainage improvements are depicted in the site development plan (Figure 2-8). Because these stormwater improvements would capture and contain the runoff, capacity exceedances to the City's stormwater systems would not occur and no additional stormwater drainage systems would be required.

Drainage would be designed to prevent ponding and erosive water flows that could damage new structure foundations or poles. Some watercourse crossings in the Project area such as those along existing and proposed new access roads would require permanent improvements. SCE has identified 15 hardened wet-crossing locations along access roads that follow the Project alignment. Depending on potential wet-crossing designs, these permanent structures would be installed in a manner similar to retaining walls, as described in Section 2.7.3.7 of the Project Description. Hardened wet crossings would be lined by approximately 10-foot-wide riprap upstream and downstream of the crossing. The locations of permanent wet crossings are identified in Appendix A.

The operation of the permanent stormwater collection and conveyance systems proposed as part of the Project would not result in conditions of excessive runoff or erosion. These drainage improvements are considered along with other components of the Project and potential impacts evaluated throughout the EIR. Given that natural drainages would be restored and that additional drainage improvements would be designed to allow a natural flow path and would not result in conditions requiring new or relocated stormwater systems (other than those proposed as part of the Project), the Project's operational impact would be **less than significant**.

Electric Power

The Project proposes construction and operation of electrical components including new subtransmission lines and improvements to existing substations and a switchyard. The environmental effects of these Project components are discussed and evaluated throughout this EIR Chapter 3.

Construction

As discussed in Section 2.3.3.2, *Replacement, Modification, or Relocation of Project Facilities*, the Project would require the replacement, modification, and installation of electric power utilities. If existing distribution facilities are available, a temporary service and meter may be used for electrical power at one or more of the staging areas. If it is determined that temporary power is not needed or available at the staging areas full time, a portable generator may be used intermittently to provide electrical power at one or more of the staging areas. The temporary power lines and poles would be removed after construction of the Project.

During construction, portions of the existing electrical distribution lines in the Project area may be de-energized to connect the new conductor. To reduce the need to interrupt electrical service, de-energizing and re-energizing of the existing lines would be likely to occur at night when electrical demand is low. Relays would be reprogrammed and tested at all Project substations and the switchyard.

Given that the Project would not require extensive interruptions to electric service due to the nighttime timing of this work, and that the Project would rely on temporary meters or portable generators as needed, the resulting construction-related service interruptions would be minimal, and impacts would be **less than significant**.

Operation and Maintenance

The utility and service systems analysis focuses on the need for the Project to require additional facilities due to minor consumption of electricity. As discussed, the Project would include and result in the construction, operation and maintenance of electrical components including subtransmission lines, and substation improvements, as discussed and evaluated throughout Chapter 3. As noted in Section 3.1, Aesthetics the presence of subtransmission lines has the potential to interrupt the visual continuity of the skyline and present other potentially significant aesthetic impacts, which may not be mitigated to a less-than-significant level. Operation of the Project would require a minor increase in demand for electricity, discussed further in Section 3.6, *Energy*. The Project (in and of itself) is an electrical infrastructure project that would result in impacts disclosed and evaluated throughout this EIR.

Telecommunication Facilities

The Project includes construction and operation of telecommunications facilities including new telecommunications systems in the substations and switchyard, installation of fiber optic cable and optical ground wire and associated appurtenances on and near the new subtransmission lines, as described in Section 2.5.1.7. The environmental impacts associated with these facilities are disclosed and evaluated throughout Chapter 3.

Construction

Existing telecommunication utilities and facilities would be utilized throughout the Project area during Project construction in a manner consistent with existing use. As part of the Project, old telecommunication equipment may be demolished and replaced with new equipment. Further details on telecommunication equipment are outlined in Section 2.5.1.7 *Telecommunications*. Existing telecommunication lines may also be relocated to new structures or distribution poles on during construction. SCE would be required to coordinate with all third-party utility companies that would be potentially affected by utility relocation as required by California Government Code 4216. Project construction would be managed to minimize telecommunication service interruptions. Impacts would be **less than significant**.

Operation and Maintenance

Each of these new or expanded telecommunications facilities (described in Section 2.5.1.7, *Telecommunications*) would be installed within the Project's disturbance footprint. As such, they would not increase the Project's disturbance area and would not be anticipated to result in substantial environmental impacts beyond those described and evaluated within this EIR. The telecommunications facilities would be operated and maintained in a manner similar to existing SCE electrical and telecommunications facilities, consistent with SCE standard protocols and regulatory requirements. Operation and maintenance related impacts on telecommunication facilities would be **less than significant**.

Natural Gas

The proposed Kramer–Cal City 115 kV Subtransmission Line alignment intersects two existing natural gas lines in the vicinity of Kramer Junction and parallels an existing natural gas pipeline across U.S. 395 that is approximately 315 feet east of the proposed and existing SCE ROW. The Project subtransmission line alignment is proposed in the vicinity of existing natural gas lines; however, consistent with regulatory requirements (California Government Code Section 4216), such lines would be identified and marked to avoid potential conflicts.

Construction

Consistent with requirements under California Government Code 4216, all underground utilities including natural gas lines would be located and marked prior to ground disturbing construction. Potential temporary interruptions would require notification and would be subject to regulations including those intended to reduce conflicts with third-party utilities. SCE would be required to coordinate with all third-party utility companies and alert local agencies prior to construction to reduce potential utility conflicts, as required by state regulations. Minor relocations of existing gas lines would be resolved through the required third party and agency coordination. The impact would be **less than significant**.

Operation and Maintenance

As discussed in Chapter 2, *Project Description*, the Project may require maintenance practices, which could occasionally require ground disturbance. As required by California Government Code 4216, contractors would contact local utility owners in order to avoid and minimize impacts to natural gas utility lines. The impact would be **less than significant**.

Mitigation: None required.

Criterion b) Whether the Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years.

Impact 3.19-2: The Project would require water supplies. (*Less than Significant*)

Construction

Construction of the Project is expected to take place over 24 months and require a total of approximately 476 acre-feet of water. Water would be used during construction to control dust on access roads and work areas, in the construction of concrete foundations, and for washing equipment, among other uses. Construction water demand may be obtained directly from nearby hydrants (groundwater sources) along the Project alignment in California City and delivered by water trucks or stored in elevated tanks at Project staging areas.

Water for construction would be obtained from water suppliers in the region such as City of California City, or sourced through AVEK, and/or MWA. These water agencies procure water supplies through a variety of sources including surface water, recycled water, SWP supplies, and groundwater. According to the City of California City Urban Water Management Plan, the sustainable yield for groundwater extraction in California City is approximately 6,900 afy. If the construction demand was met entirely through California City (groundwater) supplies, the Project would access a small portion of the annual sustainable yield (approximately 3.4 percent annually) over the anticipated 24 months of construction. The sustainable yield for MWA across all year types is approximately 57,349 afy. Sustainable yield for AVEK across all year types and drought conditions is expected to be approximately 80,000 afy.

Given that the Project's construction water requirements could be obtained through a variety of sources, and all three water suppliers in the region have the capacity to supply this demand, the Project's construction water demand would not exceed available supplies. Therefore, the Project would have sufficient water, and construction related impacts would be **less than significant**.

Operation and Maintenance

Water requirements would continue following construction, mainly to control dust along unpaved access routes. Access road maintenance would be conducted as needed and has been estimated to require approximately 2.2 afy for dust control. Insulators could also require periodic washing with water to prevent the buildup of contaminants (e.g., dust, salts, droppings, smog, condensation). The frequency of insulator washing may vary depending on local conditions and buildup of contaminants. No permanent water fixtures such as showers or sinks would be constructed as part

of the Project. Operational water demands for road maintenance may be provided through surface and groundwater sources obtained from water suppliers in the region such as City of California City, AVEK, and/or MWA.

Given that the Project could rely on various water supply sources in the Project area and that all potential water suppliers in the Project area have adequate water supply to manage the estimated Project water demand, the impact associated with maintenance would be **less than significant**.

Mitigation: None required.

Criterion c) Whether the Project would 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.

The Project would not generate wastewater during operation, as there would be no permanent sanitary waste infrastructure constructed as part of the Project. Therefore, wastewater generation during Project operation is not discussed further, as there would be **no impact**. *(No impact)*

Impact 3.19-3: Project construction would result in a temporary demand for wastewater treatment during construction. (*Less than Significant*)

As described in Impact 3.19-1, sanitary wastewater would be generated during Project construction. All proposed sanitary facilities would be portable and temporary, and wastewater would be temporarily stored on-site and periodically transferred for treatment. Approximately 31,475 gallons of sanitary liquid waste would be generated during Project construction. Sanitary waste could be transported to, and treated at either the Rosamond Water Treatment Plant, which has a capacity of 14 mgd, or Lancaster Water Reclamation Plant, which has a capacity of 18 mgd. As described in the environmental setting, the City of California City only serves residents with wastewater treatment. However, the Lancaster Water Reclamation Plant provides wastewater treatment for portable toilets in the region and would have adequate capacity to service construction wastewater needs in addition to the provider's existing commitments. The impact would be **less than significant**.

Mitigation: None required.

Criterion d) Whether the Project would generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Impact 3.19-4: The Project would generate solid waste potentially in excess of local capacities. (*Less than Significant*)

Construction

As discussed in Section 2.7.13.1, *Solid Waste*, the solid waste generated by the Project during construction would comprise of metals, wood poles, wood pallets, cardboard, and other materials

associated with construction packaging, worker-generated solid waste (e.g., food waste and packaging), and organic waste (e.g., removed vegetation).

Only small volumes of hazardous waste would be generated during Project construction. These hazardous wastes would generally include empty fuel, lubricant, or cleaning solvent containers; materials contaminated with fuels, lubricants, or cleaning solvents (e.g., rags, drip pans); and used motor oil and solvents. All hazardous waste would be stored, handled, and used in accordance with applicable regulations.

The existing wood poles or portions of wood poles that would be removed for the Project would be hauled to a staging area. They would be either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or disposed of in the lined portion of a Regional Water Quality Control Board (RWQCB)–certified landfill or equivalent facility.

Approximately 253 wood poles identified for removal or replacement may require disposal of an estimated 1,325 cubic yards (cy) or 506 tons of solid waste. The final disposition site of recyclable materials has not been determined at this time, as the selection of such a site may depend upon market conditions at the time of construction. A list of open and active landfills that would be available for the Project is provided in Table 3.19-2. Of these, all but the California City Recycling and Transfer Station and McKittrick Waste Treatment Site accept construction/demolition debris. The remaining facilities may be used for Project-generated construction debris.

As discussed in Table 3.19-2, surrounding landfills would have adequate capacity to meet the solid waste needs of the Project during construction given that the Project would generate approximately 1,325 cy of waste and dispose of said waste in accordance with local and county regulations. The impact would be **less than significant**.

Operation and Maintenance

Solid waste generated during operation and maintenance could include vegetation trimmings and other debris. None of the Project sites would be inhabited; therefore, solid waste is expected to be nominal (limited to that required for maintenance) over the operational lifespan of the Project. Area landfills and other waste disposal sites would have the capacity to accept the limited quantities of solid waste generated by the Project during its operation and maintenance phase. The impact would be **less than significant**.

Mitigation: None required.

Criterion e) Whether the Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Impact 3.19-5: The Project could conflict with state and local management and reduction statutes and regulations related to solid waste. (*Less than Significant*)

The Project would generate solid waste of approximately 253 wood poles identified for removal or replacement, generating an estimated 1,325 cy or 506 tons of solid waste. SCE proposes to

recycle the entire mass of the removed wood poles if possible. SCE estimates that, at a minimum, three-quarters of the mass of metallic hardware and fittings and miscellaneous solid waste would be recycled (SCE 2023b), which would be compliant with the 50 percent minimum diversion rate required by the California Integrated Waste Management Act. If wood poles are not capable of reuse by SCE, they would be disposed of consistent with all regulatory requirements governing hazardous waste. Further discussion regarding the proposed management of solid waste is provided in Section 2.7.13, *Waste Generation and Management*. See also Section 3.9, *Hazards and Hazardous Materials.*

As discussed in Section 3.19-2, *Regulatory Setting*, the CPUC has sole and exclusive state jurisdiction over the siting and design of the Project. Pursuant to CPUC General Order 131-D (General Order 131-D), Section XIV.B, public utilities are directed to consider local regulations and consult with local agencies, but the local county and city regulations are not applicable as the counties and city do not have jurisdiction over the Project.

No federal regulations pertaining to reduction of solid wastes apply to the Project. However, the Project would be required to comply with state management and reduction statutes and regulations related to solid waste, including the California Integrated Waste Reduction Act, Title 22 Division 4 of the California Code of Regulations. Although the Project, under CPUC General Order 131-D, would not be required to adhere to local management and reduction statutes, such as the Kern County and Incorporated Cities Integrated Waste Management Plan and the California City Waste Management Plan, SCE is required to consult with local agencies regarding land use matters such as solid waste reduction. In the event that a building or demolition permit would be needed for construction of the Cal City Substation expansion, SCE would complete a waste management plan and pay refundable fees (which would be reimbursed if all applicable compliance requirements of the ordinance were met). However, SCE has indicated that no building or demolition permit is required (SCE 2025).

As the Project would comply with all regulatory requirements governing hazardous waste and would recycle the majority of materials capable of reuse, the Project would comply with state solid waste requirements and there would be no conflict with state solid waste reduction mandates. Therefore, the impact would be less than significant.

Mitigation: None required.

Criterion f) Whether the Project would increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?

Impact 3.19-6: the Project could increase the rate of corrosion of adjacent utility lines as a result of alternating current. (*Less than Significant*)

Alternating current (AC) associated with overhead electric transmission lines can cause interference with AC protection, which could lead to accelerated corrosion on buried transmission pipelines located near a power line if the current would exceed the design standards for protection of the metallic pipelines. The effects of AC on corrosion processes are of interest in several important

applications including induced AC effects on pipelines co-located with electric power transmission lines. The severity of interference effects is a function of the electric lines' operating amperage, the separation distance between the electric line and pipeline, the resistivity of the soil, the length of collocation, and the angle at which the electric line and pipeline cross each other. Project components would be constructed near existing pipelines; therefore, an evaluation of corrosive impacts on the existing lines as a result of AC is warranted.

Construction

While temporary power needs at construction sites may be met with temporary power or other utility lines installed at one or more staging areas to support construction activities, the temporary power lines and poles would be removed after construction of the Project. Given that these additional power lines would be temporary, they would not increase the rate of corrosion of adjacent utility lines as a result of AC impacts, as construction would not include activities that would introduce or increase electrical interference along existing pipeline facilities. As such, impacts would be **less than significant**.

Operation

As shown on Figure 3.19-1, the Kramer–Cal City 115 kV Subtransmission Line alignment intersects or parallels existing natural gas pipelines near U.S. 395. Along U.S. 395, the proposed subtransmission line would be adjacent to an existing utility corridor and the proposed line would be located west of existing SCE-operated 115 kV subtransmission and 220 kV transmission lines, and across U.S. 395 from the existing natural gas lines. The existing natural gas pipeline is located across U.S. 395, approximately 315 feet east of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment. Given the distance between the proposed Kramer–Cal City 115 kV Subtransmission Line alignment and the existing natural gas line across U.S. 395, and the fact that the voltage of the new line would be equal-to or lower than the existing voltages in the utility corridor, the Kramer–Cal City 115 kV line would not increase the rate of corrosion of the pipeline east of U.S. 395. Furthermore, due to the anticipated operating amperage and minimal length of collocation associated with the pipeline crossings (near Kramer Substation), the proposed Kramer–Cal City 115 kV Subtransmission Line would not result in an increase in corrosion potential.

The proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment intersects existing natural gas pipelines between Lorraine Avenue and Edwards Substation. Given the anticipated operating amperage of the proposed 115 kV line and the minimal length of collocation where the Project subtransmission line and existing pipelines would intersect, it is not anticipated that this Project component would increase the rate of corrosion of the adjacent utilities. SCE has committed to the Project's conformance with applicable standards of the National Electrical Safety Code pertaining to the need for interference analysis and anti-corrosion/cathodic protection. In addition, SCE would coordinate with third party utility companies prior to conducting maintenance in the area if potential conflicts with existing utility equipment or facilities could occur, as required by California Government Code 4216. Therefore, the operation of the infrastructure installed as part of the Project would not increase the rate of corrosion of adjacent utility lines due to alternating current effects, and the impact would be **less than significant**.

Mitigation: None required.

3.19.5.3 Cumulative Effects Analysis

This section presents an analysis of the cumulative effects of the Project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. Significant cumulative impacts related to utilities and service systems could occur if the incremental impacts of the Project combined with the incremental impacts of one or more cumulative projects. Section 3.0.4, *Approach to the Cumulative Impacts Analysis*, includes Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, which lists past, present, and reasonably foreseeable future projects within a 5-mile radius of the Project site.

The geographic scope of analysis for cumulative utilities and service system impacts includes the scope of all service and utility providers that service the Project area. The timeframe during which the Project could contribute to utility and service system effects includes the construction and operations phases. For the purposes of cumulative analysis, the Project's operations phase is considered permanent.

Criterion a)

As discussed above, in Section 3.19.5.2, *Direct and Indirect Effects of the Project*, there would be no impacts associated with the Project regarding water, wastewater treatment, or natural gas facilities. Therefore, the Project would not contribute to cumulative impacts associated with these topics. *(No Impact)*

Impact C.3.19-1a: The Project construction impact of new, expanded stormwater drainage would be cumulatively considerable. (*Less than Significant with Mitigation*)

As discussed in Impact 3.19-1a, the Project would have the potential to result in erosion and contribute runoff to the storm drains or surface waters in the region during construction, which could result in a potentially significant impact on stormwater systems. Cumulative projects could result in similar impacts. The incremental impact of the Project combined with the impacts of other projects identified in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, would be cumulatively considerable. Mitigation Measure 3.10-1a, *Erosion Control Plan* (described in Section 3.10 under Impact 3.10-1a), is recommended to augment the requirements in the Construction General Permit to ensure that the specific measures and BMPs are maintained, monitored, and tracked for effectiveness. Implementation of this mitigation measure would reduce the Project's contribution to the cumulative impact on stormwater systems to a **less-than-significant** level.

Mitigation: Implement Mitigation Measures 3.10-1a, *Erosion Control Plan*.

Impact C.3.19-1b: The Project operation impact of new, expanded stormwater drainage; relocation/construction of new electrical and telecommunications facilities; and relocation of natural gas facilities would not be cumulatively considerable. (*Less than Significant*)

As discussed in Impact 3.19-1b,The operation of the permanent stormwater collection and conveyance systems proposed as part of the Project would not result in conditions of excessive

runoff or erosion, and given that natural drainages would be restored and that additional drainage improvements would be designed to allow a natural flow path and would not result in conditions requiring new or relocated stormwater systems (other than those proposed as part of the Project), the Project's operational impact on stormwater drainage impact would be less than significant. Cumulative projects could result in similar impacts, but the incremental impact of the Project combined with the impacts of other projects in the aera would not be cumulatively considerable.

As also discussed in Impact 3.19-1b, the Project would not require new or expanded utility services, as existing service capacities would meet Project needs adequately. SCE would coordinate with third party utility companies in the area when conflicts with existing utility equipment or facilities would occur, as required by California Government Code 4216. Other projects involving ground disturbance would also be subject to this regulatory requirement and would implement similar procedures to reduce utility conflicts during construction. The Project impact on third party utilities would be less than significant. The Project's incremental impact combined with the incremental impacts of projects identified in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, would not be cumulatively considerable. The cumulative impact would be less than significant.

Mitigation: None required.

Criterion b)

Impact C.3.19-2: The Project impact on water supplies would not be cumulatively considerable. (*Less than Significant*)

As discussed under Impact 3.19-2, the Project's construction- and operation-related water consumption would be accommodated by existing water resources without compromising sustainable yields in the Project area and would result in a less-than-significant impact. Some of the projects listed in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, such as the commercial cannabis cultivation projects, may require elevated supplies of water; while the water demands for long-term operation and maintenance activities to support solar facility projects, like the Aratina and Kramer solar projects, would likely be mostly be limited to panel cleaning requirements. The Project's incremental less-than-significant impact associated with water demand, combined with the incremental impacts of other cumulative projects, would not result in an impact that would be cumulatively considerable with respect to water supply. The Project's cumulative impact would be less than significant.

Mitigation: None required.

Criterion c)

The Project would not result in the construction of permanent sanitary waste infrastructure or result in a wastewater capacity impact. Therefore, the Project would not contribute to a cumulative impact on wastewater infrastructure. *(No impact)*

Impact C.3.19-3: The Project construction impact related to temporary demand for wastewater treatment would not be cumulatively considerable. (*Less than Significant*)

As described in Impact 3.19-3, all sanitary facilities proposed to be used during construction would be portable and temporary, and wastewater would be temporarily stored on-site and periodically transferred for treatment. There would be capacity to service Project construction wastewater needs in addition to the provider's existing commitments. The Project impact would be less than significant. The projects listed in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, may also require wastewater disposal service; however, the Project's incremental less-than-significant impact, combined with the incremental impacts of other cumulative projects, would not result in an impact that would be cumulatively considerable with respect to wastewater disposal services. The Project's cumulative impact would be less than significant.

Mitigation: None required.

Criterion d)

Impact C.3.19-4: The Project impact associated with the generation of solid waste would not be cumulatively considerable. (*Less than Significant*)

As discussed in Impact 3.19-4, the Project would generate solid waste that would cause a less-than-significant impact. The Project would comply with applicable laws, regulations, plans and policies such as the Integrated Waste Management Act, described in Section 3.19.1.1. Other projects in the cumulative scenario would similarly adhere to the applicable laws and regulations, including the Integrated Waste Management Act. The cumulative scenario for solid waste would not be expected to exceed the permitted capacity of available landfills and the Project's incremental contribution would not be cumulatively considerable. The Project's cumulative impact would be less than significant.

Mitigation: None required.

Criterion e)

Impact C.3.19-5: The Project impact of potential conflicts with state and local management and reduction statutes and regulations related to solid waste would not be cumulatively considerable. (*Less than Significant*)

The Project would comply with the applicable state regulations such as the Integrated Waste Management Act, described in Section 3.19.1.1, and would result in a less-than-significant impact with regard to potential conflicts with state and local management and reduction statutes and regulations.

Some of the other projects in the area listed in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, such as the SCE's Ivanpah–Control Project, would also not be subject to local waste management reduction requirements. However, other cumulative projects would be subject to local requirements governing solid waste. For example, any building or residential development requiring a California City building or demolition permit would be required to prepare a waste management plan and demonstrate a waste reduction strategy as a conditional requirement for

this local permit. Therefore, when considered along with other projects, the Project's contribution to the cumulative impact would not be cumulatively considerable. Given the Project's compliance with state regulations, and the local permit requirements, the cumulative impact would be less than significant.

Mitigation: None required.

Criterion f)

Impact C.3.19-6: The Project impact related to increasing the rate of corrosion of adjacent utility lines as a result of alternating current impacts would not be cumulatively considerable. (*Less than Significant*)

The Project could temporarily increase the amount of distribution power lines in the Project area during construction; however, given that these additional utility power lines would be temporary, they would not increase the rate of corrosion of adjacent utility lines as a result of AC impacts, as construction would not include activities that would introduce or increase electrical interference along existing pipeline facilities. During the operation phase of the Project, there would be several long-term subtransmission power line crossings of natural gas pipelines. However, due to the anticipated operating amperage and minimal length of collocation associated with the pipeline crossings, the Project would not result in an increase in corrosion potential. In addition, as described in Impact 3.19-6, SCE has committed to the Project's conformance with applicable standards of the National Electrical Safety Code pertaining to the need for interference analysis and anti-corrosion/cathodic protection. Therefore, the construction and operation of the infrastructure installed as part of the Project would not increase the rate of corrosion of adjacent utility lines due to alternating current effects, and the impact would be less than significant.

Other electrical infrastructure projects described in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*, such as the Ivanpah–Control Project, would also involve the installation of new power lines that could cause a corrosive impact due to alternating currents. As would be required for the Project, other electrical infrastructure projects would adhere to applicable standards of the National Electrical Safety Code as necessary and as they pertain to the need for interference analysis and anti-corrosion/cathodic protection, pending final design and engineering. Therefore, the Project's incremental, less-than-significant impact, when considered along with the incremental impacts of projects identified in Table 3.0-1 would not be cumulatively considerable. The cumulative impact would be less than significant.

Mitigation: None required.

3.19.6 References

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3.20 Wildfire

This section evaluates the impacts of the Project related to wildfire. It presents information about the environmental and regulatory settings and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The information and analysis presented are based in part on the 2023-2025 Wildfire Mitigation Plan (SCE 2024) and the Southern California Edison (SCE) Standard Specifications No. SST8-2018 Transmission Line Fire Protection Plan (SCE 2018) (Appendix L), as well as information provided by SCE as part of its application for a Permit to Construct the Project (SCE 2023).

During the scoping period for the EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the EIR. **Appendix B**, *Scoping Report*, includes all comments received during the scoping period. The California Public Utilities Commission (CPUC) did not receive scoping comments pertaining to wildfire.

3.20.1 Environmental Setting

The Project would be located in the Mojave Desert region of California and would cross wildland desert scrub and developed areas in unincorporated Kern and San Bernardino counties, the City of California City, and lands on Edwards Air Force Base (EAFB). The Project would also be located on public lands under the jurisdiction of the California Department of Fish and Wildlife (CDFW) and the U.S. Bureau of Land Management (BLM).

3.20.1.1 Wildfire Conditions

Fire Environment

Fire behavior is primarily dependent upon fuels (e.g., vegetation), topography (e.g., slope, elevation, and aspect), and weather (e.g., wind, temperature, and humidity). The combination of these three factors, which are described in more detail below, can help or hinder the spread of wildfire if one occurs.

Vegetation/Fuels

Fuel in the context of wildfire is the material that feeds a fire and is a key factor in wildfire behavior. Vegetative fuel sources include dead tree leaves, twigs, branches, and standing trees; live trees and brush; and dry grasses. Additional fuel sources can include manmade combustible structures such as homes, buildings, and other materials. To predict potential fire behavior in a given area, forest and fire scientists have developed fire behavior fuel models. These models use descriptions of fuel properties and climate to calculate potential fire behavior. The Scott and Burgan Fire Behavior Fuel Model expanded the range of initial fuel models to include 40 classifications of fuel. The Burgan Fire Behavior Fuel Model data for the Project area is generally classified as a dry climate with low fuel loads (SCE 2023). Fuel types in the vicinity of the Project site consist primarily of desert vegetation, dry grasses, tumbleweed, creosote bush shrub, and various scrub plant communities (see Table 3.4-2 in Section 3.4, *Biological Resources*, for additional details of the vegetation types in the Project area).

Topography

Topography describes the shape of the land and includes descriptions of elevation (height above sea level), slope (the steepness of the land), aspect (the direction a slope faces), and terrain features such as canyons and valleys. Topography can strongly influence fire behavior, including how fast a fire moves through an area. Fire typically moves more quickly as it travels uphill compared to either downhill or across flat terrain. As heat rises in front of the fire, it preheats and dries upslope fuels, resulting in their rapid combustion (Bennett 2017).

Terrain varies dramatically in Kern County. San Joaquin Valley, the Mojave Desert, and interspersed mountain regions are part of Kern County. The Mojave Desert covers roughly the eastern quarter of the county including California City and is where the Project components would be located. Due to slopes and vegetation, the mountain region is more susceptible to wildfires than other regions of Kern County, whereas the valley and desert regions may be more affected by drought and contain less vegetative fuels (Kern County 2021). Additional discussion related to landslides and slope stability is provided in Section 3.7, *Geology and Soils*.

San Bernardino County is geographically the largest county in the continental United States, covering a land area of 20,102 square miles. San Bernardino County is characterized by three distinct geographic areas: valley, mountains, and desert. Of the three, the desert is the largest region (encompassing more than 93 percent of the county's land area) and includes parts of the Mojave Desert, where the Project would be located.

Weather/Climate

California City consists of generally flat terrain with perched playas and ephemeral washes. The Project area and surrounding vicinity are in the Mojave Desert in the rain shadow of the southern Sierra Nevada and Transverse Ranges. Temperatures in California City average 45 degrees Fahrenheit (°F) in the winter months with an occasional freeze. The average summer temperature is approximately 84°F but can reach more than 110 °F based on data from the nearest weather station at the Mojave California Station (Station ID 045756) (WRCC 2024). The desert in the rain shadow of a mountain is, by definition, protected from prevailing winds that carry moisture laden clouds. As clouds hit the mountains, they rise, cool, and lose moisture as precipitation on the windward side, causing the leeward side (rain shadow) to receive little or no rainfall. Winds that blow on the lee side of a mountain are called downslope winds, which carry low relative humidity and can rush at very strong speeds bringing heat to the surrounding air (Means 2020).

Generally, the study area is classified as desert or semi-arid, with hot, dry summers and mild, humid winters. In most areas, 90 percent of the precipitation occurs between November and April. The western side of the Tehachapi Mountains and Sierra Nevada receive as much as 40 inches of precipitation a year. The desert area, in the rain shadow of these mountains, receives an average of 3–6 inches of precipitation annually. Snowfall is rare in the desert and valley regions ranges from 1 to 4 inches annually in the mountainous areas (Kern County 2021).

As for San Bernardino County, the valleys between mountain ranges experience very high temperatures, while the adjacent mountains often experience much cooler temperatures, particularly at their summits. Rainfall and humidity are low. The differences in elevation and

topography are in part responsible for variations in temperature and precipitation from the valley and desert areas. Winter temperatures in some areas of the desert are as low as 0°F, the cold often compounded by the wind-chill factor. During the fall and winter months, strong "Santa Ana" winds blow across the area. The mountains experience a four-season climate. Precipitation throughout the desert area is less than 4 inches per year, usually of short duration and high intensity. The resulting flash floods rapidly modify the terrain that is exposed to the erosive surface runoff. Unusually heavy or persistent rains result in the temporary filling of dry lakes until the surface water evaporates or infiltrates the soil (San Bernardino County 2022a).

Wildfire and Air Quality

As wildfires burn fuel, large amounts of carbon dioxide, particulate matter, and ozone precursors are released into the atmosphere. Wildfires also emit a substantial amount of volatile and semi-volatile organic materials and nitrogen oxides that form ozone and organic particulate matter. These emissions can lead to harmful exposures for first responders, nearby residents, and even populations in regions farther from the wildfires (NOAA 2021). Exposure to these pollutants can cause asthma attacks, coughing, and shortness of breath. Chronic exposure to these pollutants can increase the risk of developing chronic health conditions such as heart disease, diabetes, and cancer (Hamers 2018; Milman 2018). These pollutants are described in more detail in Section 3.3, *Air Quality*.

Fire Protection Services

Because the Project sites and alignments are in a local and federal responsibility area, primary fire protection services in the Project area are provided by the California City Fire Department with mutual aid agreements with Kern County Fire Department (Stations 14, 17) and EAFB Fire Department. San Bernardino County Fire Department and BLM have jurisdiction on lands along U.S. Highway (U.S.) 395 in the eastern part of the Project area. Section 3.16, *Public Services*, outlines additional details regarding fire protection services.

U.S. Bureau of Land Management Wildland Fire Program

The BLM wildland fire management program encompasses 61 percent of the U.S. Department of the Interior's fire-related workforce and is directly responsible for fire management on more than 245 million acres of public land, predominantly in the western states and Alaska; wildfire is prevalent across this landscape. The public land is intermixed with other federal, state, and local jurisdictions, which makes partnerships and cooperative agreements crucial to the mission of safety and fire management. BLM implements fire protection on approximately 650 million acres of public land along with other fire management agencies and manages fuel treatments to reduce wildfire risk and support healthy ecosystems across the landscape (BLM 2024).

3.20.2 Regulatory Setting

3.20.2.1 Federal

North American Electric Reliability Corporation Standards

The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority comprising 10 regional reliability councils. The overarching goal of NERC is

to ensure the reliability of the bulk power system in North America. To achieve its goal, NERC develops and enforces reliability standards, monitors the bulk power systems, and educates, trains, and certifies industry personnel. To improve the reliability of regional electric transmission systems, NERC developed a transmission vegetation management program that is applicable to all transmission lines operated at 200 kilovolts (kV) and higher, as well as lower voltage lines designated by the regional reliability organization as critical to the reliability of the region's electric system (NERC 2020).

The program, which became effective on April 7, 2006, applies to SCE's transmission line–related vegetation management activities in the Project area such as NERC Standard FAC-003, Transmission Vegetation Management. It establishes the requirements of the formal transmission vegetation management program. These requirements include identifying and documenting clearances between vegetation and any overhead, ungrounded supply conductors, while considering transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain and elevation, and the effects of wind velocities on conductor sway. The clearances identified must be no less than those set forth in Institute of Electrical and Electronics Engineers (IEEE) Standard 516-2021 (*Guide for Maintenance Methods on Energized Power Lines*) (IEEE 2022), which establishes minimum vegetation-to-conductor clearances to maintain the electrical integrity of the electrical system.

3.20.2.2 State

California Department of Forestry and Fire Protection

California Code of Regulations (CCR) Title 14, Division 1.5, establishes regulations for the California Department of Forestry and Fire Protection (CAL FIRE) in State Responsibility Areas (SRAs) where CAL FIRE is responsible for wildfire protection. These regulations constitute the basic wildland fire protection standards of CAL FIRE. They have been prepared and adopted to establish minimum wildfire protection standards in conjunction with building, construction, and development in SRAs. Additionally, Title 14, Division 1.5, Chapter 7, Subchapter 2 sets forth the minimum standards for emergency access and egress (Article 2), signage (Article 3), water supply (Article 4), and fuel modification standards (Article 5) for lands within SRAs.

Emergency Services Act

Under the Emergency Services Act (Government Code Section 8550 et seq.), the state developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving wildfire and other natural and/or human-caused incidents is an important part of the plan, which is administered by the Governor's Office of Emergency Services (Cal OES). The office coordinates the responses of other agencies, including the California Environmental Protection Agency (CalEPA), the California Highway Patrol (CHP), regional water quality control boards, air quality management districts, and county disaster response offices (Cal OES 2023a).

CAL FIRE Strategic Plan 2024

Developed by the California Board of Forestry and Fire Protection, the CAL FIRE Strategic Plan outlines goals and objectives to implement CAL FIRE's overall policy direction and vision (CAL

FIRE 2024). The Strategic Plan 2024 builds on the prior (2019) strategic plan based on identification and prioritization of diverse operational and programmatic concerns confirmed through internal and external engagement. Renewed goals include those pertaining to hiring, cross training, removing barriers to equitable access, leveraging technology to modernize processes, strengthening physical and digital infrastructure, identifying core capabilities, and strengthening operational capacity. Through the 2024 Plan, CAL FIRE implements and enforces the policies and regulations set forth by the Board of Forestry and Fire Protection and carries forth the mandates of the Governor and the Legislature.

California Emergency Response Plan

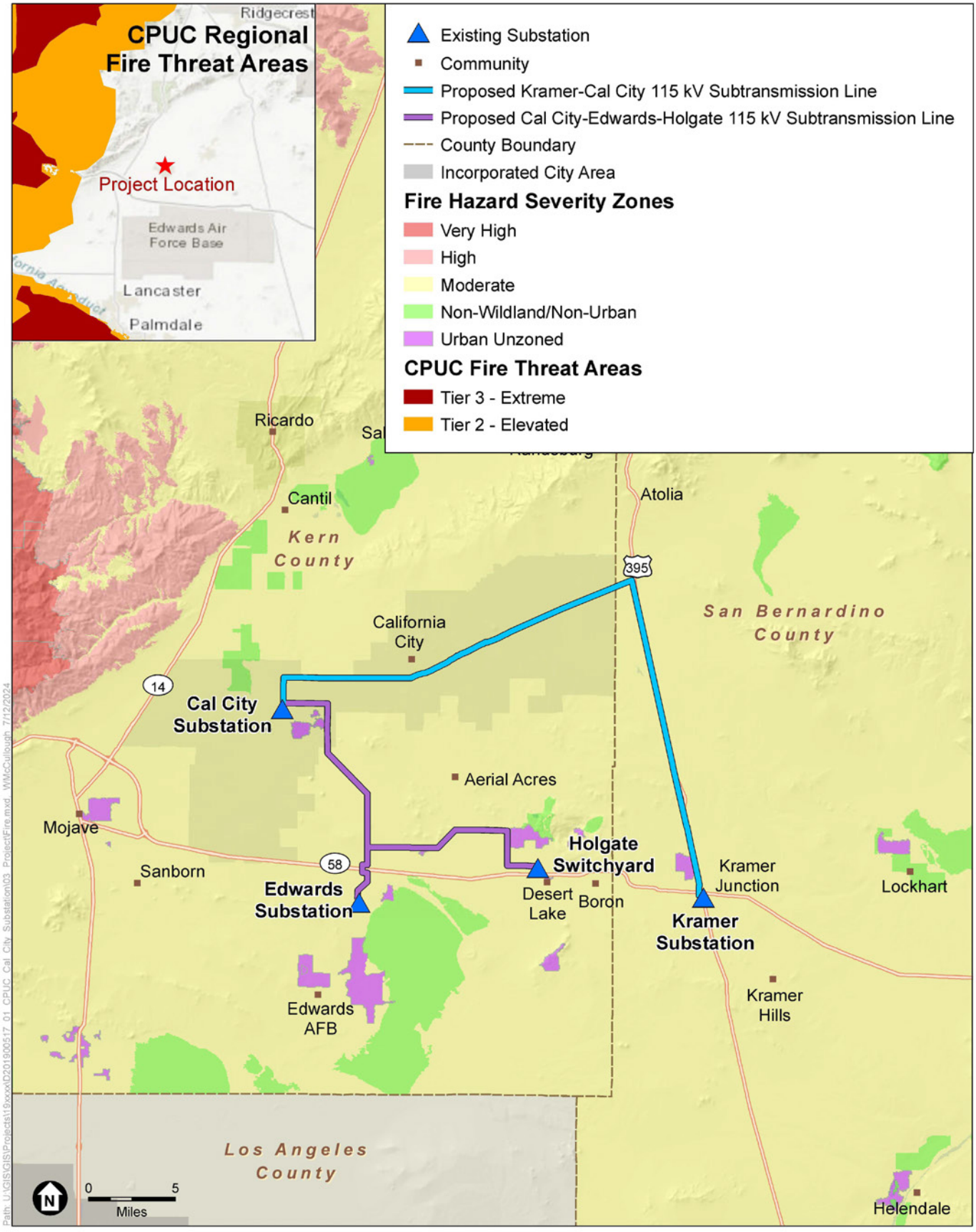
Pursuant to the Emergency Services Act (Government Code Section 8550 et seq.), California has developed an Emergency Plan to coordinate emergency services provided by federal, state, and local governmental agencies and private persons. Response to wildfire incidents is one part of this plan. The plan is administered by Cal OES. Cal OES coordinates the responses of other agencies, including the U.S. Environmental Protection Agency, CHP, CDFW, the nine regional water quality control boards, the local air districts, and local agencies. The State Emergency Plan defines the "policies, concepts, and general protocols" for the proper implementation of the California Standardized Emergency Management System (SEMS). The SEMS is an emergency management protocol that agencies within the State of California must follow during multi-agency response efforts (Cal OES 2023b).

California Public Resources Code

The California Public Resources Code includes fire safety provisions that are deemed necessary by the director or agency with primary responsibility for fire protection in the area. During the fire hazard season, these regulations restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas.

Fire Hazard Severity Zones—Public Resources Code Sections 4201-4204

California Public Resources Code Sections 4201–4204 require CAL FIRE to prepare fire hazard severity zone maps for all lands within SRAs, and to make recommendations for such zones in Local Responsibility Areas (LRAs). The geographic areas (or zones) range from "moderate" to "very" high fire hazard severity zones (FHSZ). Refer to **Figure 3.20-1**, *Fire Hazard Severity Zones*, for the FHSZ classifications in the Project area. Each zone is to encompass relatively homogeneous lands and is to be based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified as a major cause of wildfire spread. There are no SRAs crossed by Project component sites or alignments. The Project sites and alignments are located mostly in an LRA with "moderate" fire hazard severity; portions are designated as other moderate, other unzoned, or in a Federal Responsibility Area (FRA).



SOURCES: SCE 2023; CalFire 2024; CPUC 2024

Cal City Substation 115 kV Upgrade Project

Figure 3.20-1
Fire Hazard Severity Zones

Table 3.20-1 summarizes lengths of proposed subtransmission line alignments in fire hazard severity zones, including jurisdictions (state, local, and federal responsibility areas) and CPUC high fire threat districts (HFTDs). See the CPUC regulations discussion, below, for additional detail about HFTDs. All Project substations/switchyard sites are within moderate FHSZs; Cal City Substation, Kramer Substation, and Holgate Switchyard are in LRAs and Edwards Substation is in an FRA. None of the substations/switchyard sites are in very high FHSZs, SRAs, or CPUC HFTDs.

TABLE 3.20-1
MILES OF PROJECT THE ALIGNMENTS IN DESIGNATED FIRE HAZARD SEVERITY ZONES AND RESPONSIBILITY AREAS

Project Component	Alignment Length (miles)	Very High FHSZ (miles)	Moderate FHSZ (miles)	SRA (miles)	LRA (miles)	FRA (miles)	CPUC HFTD
Kramer–Cal City	42.1	0	42.1	0	27.5	14.5	0
Cal City–Edwards-Holgate	28.1	0	28.1	0	24	4.1	0

NOTES: CPUC HFTD = California Public Utilities Commission High Fire-Threat District; FHSZ = Fire Hazard Safety Zone; FRA = Federal Responsibility Area; LRA = Local Responsibility Area; SRA = State Responsibility Area.
SOURCE: SCE 2023.

California Building Code

In January 2008, California officially switched from the Uniform Building Code to the International Building Code. The International Building Code specifies construction standards to be used in urban interface and wildland areas where there is an elevated threat of fire. The California Building Code was updated in 2010, adding a chapter specific to materials and construction methods for exterior wildfire exposure to address fire safety standards in fire hazard severity zones in SRAs (as designated by CAL FIRE) and in the wildland urban interface[1] areas (Chapter 7A, California Building Code). The California City portion of the Project is within a wildland urban interface and partially in an intermix area (USFS 2023).

Assembly Bill 747

Assembly Bill 747 was adopted in 2019 and requires the safety element of a jurisdiction's general plan to be reviewed and updated as necessary to identify evacuation routes and their capacity, safety, and viability under a range of emergency scenarios. The law authorizes a city or county that has adopted a local hazard mitigation plan, emergency operations plan, or other document that fulfills commensurate goals and objectives, to comply with this requirement by summarizing and incorporating by reference that other plan or document in the safety element.

Senate Bill 1028

Senate Bill 1028 (2016) requires each electrical corporation to construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire

[1] The *wildland urban interface* is where structures or other human development intermingles with wildland vegetation or where residences are in the vicinity of large areas of wildland vegetation.

posed by those electrical lines and equipment, and makes a violation of these provisions by an electrical corporation a crime under state law. The bill also requires each electrical corporation to annually prepare a wildfire mitigation plan and submit it to the CPUC for review. The plan must include a statement of objectives, a description of preventive strategies and programs that are focused on minimizing risk associated with electric facilities, and a description of the metrics that the electric corporation uses to evaluate the overall wildfire mitigation plan performance and assumptions that underlie the use of the metrics.

Consistent with the requirements of Senate Bill 1028 (described above), SCE updated its wildfire mitigation plan in 2024 (see Appendix L). Additional discussion of the 2023-2025 Wildfire Mitigation Plan goals, strategies, and programs to minimize wildfire risk associated with SCE electric facilities is provided in Section 3.20.3.

Senate Bill 901

Senate Bill 901 (2018) expanded upon the wildfire mitigation plan requirements of Senate Bill 1028 and included a number of provisions related to wildfire risk and management in California including, but not limited to, the following: budget adjustments related to emergency response and readiness, the creation of a CAL FIRE Wildfire Resilience Program and increasing the maximum penalties that can be issued by the CPUC to a public utility that fails to comply with CPUC requirements. Additionally, the legislation requires that utilities prepare wildfire mitigation plans that include elements specified in the bill such as the following:

(1) A description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.

(2) Protocols for disabling reclosers and de-energizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.

(3) Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the electrical corporation’s service territory. These wildfire mitigation plans are required to be reviewed by an independent evaluator.

California Public Utilities Commission

In 2017, the CPUC established new policies and fire safety regulations including new fire prevention rules for utility poles, wires and major new rules for vegetation management. Additionally, the CPUC adopted high fire threat districts (HFTDs) and developed fire threat maps to identify areas with tree mortality high hazard zones (Tier 1), and areas of elevated and extreme risk for utility associated wildfires, categorized as Tiers 2 and 3, respectively. The fire safety regulations require electric utilities to prioritize correction of safety hazards, establish timelines for correction of non-immediate fire risks (in Tier 2 and 3 HFTDs), maintain clearance between vegetation and power lines, and prepare annual fire prevention plans if located in HFTDs, among other requirements. As noted in Table 3.20-1, the Project is not located in a CPUC HFTD.

General Order 95

CPUC General Order 95 applies to work conducted by SCE, including the construction and reconstruction of overhead electric lines. The replacement of poles, towers, or other structures is considered reconstruction and requires adherence to all strength and clearance requirements of this order. The CPUC has promulgated various rules to implement the fire safety requirements of General Order 95 (CPUC 2020):

- Rule 18A, which requires utility companies to take appropriate corrective action to remedy safety hazards and General Order 95 nonconformances. Additionally, this rule requires that each utility company establish an auditable maintenance program.
- Rule 31.2, which requires that lines be inspected frequently and thoroughly. It also requires that lines temporarily out of service be inspected and maintained.
- Rule 35, which requires that vegetation management activities be performed to establish necessary and reasonable clearances. These requirements apply to all overhead electrical supply and communication facilities that are covered by this General Order. Specifically, this applies to communication and electric supply circuits, energized at 750 volts or less, which must be kept clear of vegetation in new construction and when circuits are reconstructed or repaired.
- Rule 38, which establishes minimum vertical, horizontal, and radial clearances of wires from other wires.

General Order 165

General Order 165 establishes requirements for the inspection of electric distribution and transmission facilities that are not contained within a substation. Utilities must perform “patrol” inspections, which are defined as a simple visual inspection of utility equipment and structures (designed to identify obvious structural problems and hazards) at least once per year for each piece of equipment and structure. Detailed inspections, where individual pieces of equipment and structures are carefully examined, are required every 5 years for all overhead conductor and cables, transformers, switching/protective devices, and regulators/capacitors. By July 1 of each year, each utility subject to General Order 165 must submit an annual report of its inspections for the previous year under penalty of perjury (CPUC 2017).

General Order 166

General Order 166 Standard 1.E requires each investor-owned utility, such as SCE, to develop a fire prevention plan describing measures that the utility will implement to mitigate the threat of power line fires generally. Additionally, this standard requires that investor-owned utilities outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning event in a high-fire-threat area. Fire prevention plans formulated by investor-owned utilities are required to identify specific parts of the utility’s service territory where the conditions described above (i.e., Red Flag Warnings and high-wind events) may occur simultaneously. Standard 11 requires utilities to report annually to the CPUC regarding compliance with General Order 166 (CPUC 2021. In compliance with Standard 1.E of this General Order, SCE adopted a fire prevention plan in 2017. The effective current fire prevention plan for SCE’s service area (where the Project would be located) is the SCE 2023-2025 Wildfire Mitigation Plan (as discussed in Section 3.20.3).

3.20.2.3 Local

Although based on CPUC General Order 131(d), local jurisdictions are preempted from regulating the Project and alternatives with respect to land use, the general plan policies and local regulations described below are provided for informational purposes and to inform whether any actual adverse environmental impacts could occur as a result of a conflict with these plans, policies, and regulations.

Kern County

Kern County Multi-Jurisdictional Hazard Mitigation Plan

Approved in April 2021, Kern County's Multi-Jurisdictional Hazard Mitigation Plan is intended to reduce or eliminate any long-term risk to people and property from hazards such as floods, wildfires, severe weather, drought, and agricultural hazards that could have a significant impact on the county. Kern County and the other participating jurisdictions developed this multi-hazard mitigation plan to make the county and its residents less vulnerable to future hazard events, such as wildfire (Kern County 2021). The Multi-Hazard Mitigation Plan recommends multiple mitigation actions to reduce vulnerability to hazardous events, such as emergency plans or evacuation routes.

Kern County General Plan

The Kern County General Plan outlines planning strategies for the protection of the community from any unreasonable risks associated with the effects of geologic hazards, landslides, flooding, and wildland and urban fires (Kern County 2021). The following policies are relevant to fire hazards:

> ***Policy 3:*** The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.
>
> ***Policy 6:*** All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

San Bernardino County

San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan

The purpose of the San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan, adopted in December 2022, is to reduce or eliminate long-term risks to people and property from hazards such as floods, wildfire, severe weather, and drought. Although the plan does not specify specific evacuation routes, the plan does state that interstates (such as U.S. 395 near the Project) would serve as major emergency response and evacuation routes (San Bernardino County 2022a). The plan includes goals and objectives from the county General Plan (described below) related to reducing wildfire hazards.

San Bernardino County General Plan

The Hazards Element of the San Bernardino County General Plan outlines San Bernardino County's planning strategies regarding protecting life, property, and commerce from impacts associated with natural hazards, human-generated hazards, and increased risk due to climate

change (San Bernardino County 2022b). The following policies of the Hazards Element are relevant to fire hazards:

> ***Policy HZ-1.2:*** New development in environmental hazard areas. We require all new development to be located outside of the environmental hazard areas listed below. For any lot or parcel that does not have sufficient buildable area outside of such hazard areas, we require adequate mitigation, including designs that allow occupants to shelter in place and to have sufficient time to evacuate during times of extreme weather and natural disasters.
>
> - Flood: 100-year flood zone, dam/basin inundation area
> - Geologic: Alquist Priolo earthquake fault zone; County-identified fault zone; rockfall/debris-flow hazard area, medium or high liquefaction area (low to high and localized), existing and County-identified landslide area, moderate to high landslide susceptibility area)
> - Fire: high or very high fire hazard severity zone.
>
> ***Policy HZ-1.6:*** Critical and essential facility location. We require new critical and essential facilities to be located outside of hazard areas, whenever feasible.
>
> ***Policy HZ-1.13:*** Fire protection planning. We require that all new development in County-designated Fire Safety Overlay and/or CAL FIRE-designated Very High Fire Hazard Severity Zones meet the requirements of the California Fire Code and the California Building Code as amended by the County Fire Protection District, including Title 14 of the California Code of Regulations fire safety requirements for any new development within State Responsibility Areas, as well as provide and maintain a Fire Protection Plan or Defensible Space/Fuel Modification Plan and other pre-planning measures in accordance with the County Code of Ordinances.
>
> ***Policy HZ-1.14:*** Long-term fire hazard reduction and abatement. We require proactive vegetation management/hazard abatement to reduce fire hazards on existing private properties, along roadsides of evacuation routes out of wildfire prone areas, and other private/public land where applicable, and we require new development to enter into a long-term maintenance agreement for vegetation management in defensible space, fuel modification, and roadside fuel reduction in the Fire Safety Overlay and/or Very High Fire Hazard Severity Zones.
>
> ***Policy HZ-1.15:*** Evacuation route adequacy. We coordinate with CAL FIRE, California's Office of Emergency Services, and other local fire districts to identify strategies that ensure the maintenance and reliability of evacuation routes potentially compromised by wildfire, including emergency evacuation and supply transportation routes.

City of California City

California City Fire Department 2021-2026 Strategic Plan

Building upon the initial strategic plan (completed in 2015), the current California City Fire Department (CCFD) strategic plan is intended to be a living document (or work in progress) reflecting the mission and vision of the organization through a series of short- and long-term objectives. The intent is to drive CCFD toward a common vision while optimizing resources. The plan includes information regarding emergency response and mutual aid agreements in place with

Kern County Fire Department and EAFB Fire Department to optimize regional fire response (CCFD 2021).

City of California City General Plan

The Safety Element of the California City General Plan contains the following policies related to fire and wildfire (City of California City 2009):

- Ensure that new development does not create a burden on adequate levels of emergency response services, including fire protection services and law enforcement services.
- Work with the Fire Department and Police Department to ensure sufficient services can adequately protect and serve the community.
- Ensure that new development proposal shall provide street widths and clearance areas are consistent with the City's requirements and, therefore, adequate to accommodate fire protection and emergency response vehicles.
- Continue to enforce the Health, Fire, and Building standards for all new development proposed and rehabilitation of existing structures.
- Continue to monitor water supply for fire-flow to insure adequacy of fire protection services.
- Review all new development proposals for fire safety considerations.

3.20.3 Applicant Proposed Measures and Best Management Practices

Although no measures have been proposed by SCE to address potential specific Project-related wildfire impacts, the Applicant has committed to constructing the Project in a manner consistent with SCE Standard Specifications No. SST8-2018 Transmission Line Project Fire Plan (SCE 2018), summarized below. SCE would also operate and maintain the Project in accordance with the 2023-2025 Wildfire Mitigation Plan. Refer to Appendix L, *Southern California Edison Wildfire Plans*.

Southern California Edison Standard Specification No. SST8-2018 Transmission Line Project Fire Plan

The intent of the standard specification (SST8-208) is to ensure that uniform guidelines for the prevention, control, and extinguishment of fires are followed during transmission line construction projects, in recognition that not all sections of the specification would be applicable to all projects. The plan includes various safeguards and controls of fires such as: precautions in areas of fire hazards, measures to be followed for safety and to reduce ignition risks while constructing and operating equipment; protocols for plan review; vehicle and equipment inspection procedures; restrictions on smoking; notations for permits required for blasting, burning, and welding (among other activities); firefighting reporting tools and equipment; water tank/trailer requirements; emergency measures to follow at various project activity levels (including fire danger rating and weather monitoring); contact sheets and reporting forms, among other standards to be followed to proactively address potential fire risks while constructing transmission lines (see Appendix L).

Southern California Edison 2023-2025 Wildfire Mitigation Plan

The primary goal of the SCE 2023-2025 Wildfire Mitigation Plan consistent with California Public Utilities Code section 8386(a) is as follows:

> *Each electrical corporation shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment.*

The 2023–2025 Wildfire Mitigation Plan builds on successes of prior implementation efforts and incorporates lessons learned during recent years of extreme wildfire activity in various parts of California. The 2023-2025 Wildfire Mitigation Plan include the following strategies and programs:

- An enhanced, comprehensive grid hardening strategy anchored in advanced risk modeling and analytics.
- Risk-informed inspection, repair, and replacement programs.
- Continuation of comprehensive vegetation management and inspections.
- Deployment of improved wildfire cameras, satellite imagery, and advanced technology, data, and risk analytics capabilities.
- Emergency preparedness workforce training and aerial fire suppression resources.
- Increased situational awareness and response.
- Augmented activities for public safety power shut-offs, resilience and community engagement, particularly on behalf of under-represented groups and SCE access and functional needs (AFN) customers.
- New implementation actions to address risks associated with transmission lines and secondary conductors.

The 2023-2025 Wildfire Mitigation Plan also quantifies circuit miles for covered conductors installed and undergrounding; high fire risk inspections and remediations (repairs); hazard tree identification and vegetation management clearances completed; public safety power shut-offs and windspeed risk modeling; weather stations installed; high-definition cameras, sectionalizing devices, and fuses; and resiliency programs, among other measures to proactively address fire risk associate with SCE systems (SCE 2024).

3.20.4 Significance Criteria

According to Appendix G of the CEQA Guidelines, the Project would result in a significant impact related to wildfire effects if it would be located in or near state responsibility areas (SRAs) or lands classified as very high fire hazard severity zones (FHSZ) and it would:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan;

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

3.20.5 Direct and Indirect Effects

3.20.5.1 Approach to the Analysis

For purposes of the evaluation of potential wildfire-related impacts, the study area is defined as the footprint of all components of the Project and alternatives, including all areas of temporary and/or permanent ground disturbance and the surrounding communities within which the Project would be constructed and operated, as described in this section. To assess potential impacts with respect to the wildfire criteria identified in Section 3.20.4, the proximity of the nearest state responsibility areas and CPUC fire threat areas were evaluated in relation to the proposed components of the Project. Although the Project would not be located in an SRA or in a very high FHSZ, for the purpose of disclosure, the impacts discussion provided below evaluates ways in which the Project has the potential to contribute to ignition risks and conflict with emergency response.

The analysis assumes that various safety requirements would be in effect and enforced during construction and that the Project would be operated and maintained in compliance with CPUC's General Orders 95, 165, and 166 governing fire safety and in a manner consistent with SCE's standard practices and procedures with respect to fire safety, including the current SCE wildfire mitigation plan. Additionally, the cumulative analysis assumes that other projects, including the BESS facility adjacent to the Cal City Substation and the Ivanpah–Control project adjacent to the proposed Kramer-Cal City 115 kV Subtransmission Line alignment, would also comply with all applicable regulatory public safety and building code requirements governing fire safety.

3.20.5.2 Direct and Indirect Effects of the Project

Criterion a) If located in or near a state responsibility area or lands classified as very high fire hazard severity zone, whether the Project would substantially impair an adopted emergency response plan or emergency evacuation plan.

The Project is not proposed within or near an SRA, or upon or near lands classified as very high FHSZs. Operation and maintenance of the Project would not involve any road or lane closures nor substantially impair the implementation of an emergency response plan or emergency evacuation. Therefore, once constructed there would be no impact under this criterion. *(No Impact).*

Impact 3.20-1: Project construction could substantially impair an adopted emergency response plan or conflict with emergency evacuation. (*Less than Significant with Mitigation*)

The Project would consist of construction and operation of new subtransmission lines, an expanded and upgraded Cal City Substation, and modifications of existing substations and a switchyard as described in Chapter 2, *Project Description*. The locations for these components and the inherent risks associated with electrified structures and power lines are among the noteworthy considerations. Although the subtransmission lines and substations/switchyard associated with the Project are not proposed within or near an SRA nor on lands classified as a very high FHSZ, there are considerations regarding emergency response and evacuation that warrant evaluation.

The Project's proposed new Kramer–Cal City 115 kV Subtransmission Line would be constructed along U.S. 395, a north-south interstate highway classified as a principal arterial (as described in further detail in Section 3.17, *Transportation*). As noted in the *County of San Bernardino Multi-Jurisdictional Hazard Mitigation Plan* (described in Section 3.20.2, *Regulatory Setting*), San Bernardino County recognizes that interstates would serve as major emergency response and evacuation routes. The combination of Project-related slower-moving traffic associated with oversize vehicles and temporary lane closures could delay emergency response or evacuation if such events would be required during construction. The Project could generate delays and has the potential to conflict with emergency response and/or evacuation during construction (see Impact 3.17-3 in Section 3.17, *Transportation*, for additional details regarding the Project's potential to result in inadequate emergency access). See also Section 3.15.5 for discussion of the Project's effects on response times. The Project could substantially impair an adopted emergency response plan or emergency evacuation plan if the interstate was needed in the event of an evacuation or during an emergency. This would be a potentially **significant** impact.

Mitigation is recommended to reduce potential impacts and resolve conflicts with established emergency response and evacuation plans. Mitigation Measure 3.17-2a, *Traffic Management Plan* (see Section 3.17.5.2 for the text of mitigation), would provide for advanced coordination and communication with emergency response providers. The mitigation would also require that a traffic management plan be developed and implemented to ensure that construction activities and lane closures would not substantially affect emergency response. It is anticipated that the encroachment permit process would also require coordination and communication between SCE (as Applicant) and the state and local agencies, which would also minimize potential conflicts.

> **Mitigation:** Implement Mitigation Measure 3.17-2a, *Traffic Management Plan* (see Section 3.17.5.2 for the text of this mitigation measure).
>
> **Significance after Mitigation:** With the implementation of a traffic management plan, construction of the Project would not substantially impair an adopted emergency response plan or emergency evacuation plan and the impact would be reduced to less than significant.

Criterion b) If located in or near a state responsibility area or lands classified as very high fire severity zone, whether the Project would, due to prevailing winds and other factors, exacerbate wildfire risks, and thereby potentially expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Impact 3.20-2: The Project could, due to downslope winds, or other factors, exacerbate wildfire risks, and thereby contribute to the uncontrolled spread of a wildfire. (*Less than Significant*)

Although the Project sites and alignments are not proposed within or near an SRA or on lands classified as a very high FHSZ, there are considerations regarding exacerbation of wildfire risks that warrant evaluation. The Project structures would not be intended for occupation and therefore would not expose any occupants to increased risks associated with wildfire. However, Project segments do pass through the existing developed communities of California City and North Edwards. Therefore, the following analysis focuses on the potential for Project construction and operation to increase the exposure of these communities to wildfire risks. The Project would be on flat terrain; therefore, slope is a not a contributing issue that could exacerbate wildfire in the Project area. Although the Cal City Substation and the western portions of the Project components are somewhat protected against prevailing winds by the mountain ranges to the west of California City, there are downslope winds that could contribute to wildfire conditions. Prevailing westerly winds occur across the open parts of the Mojave Desert, including the eastern portions of the Project sites, such as the Kramer Substation and the portion of the Kramer–Cal City 115 kV Subtransmission Line alignment along U.S. 395.

As noted in the setting, the Project would be in a moderate FHSZ and mostly in an LRA. The exceptions to this involve the federal (BLM) lands along the proposed subtransmission line alignments and the spur line and work proposed at the Edwards Substation under the jurisdiction of the U.S. Department of Defense. There is no land in the vicinity of the Project sites or alignment in an SRA.

The Project would be designed and constructed in conformance with SCE's specifications pertaining to fire safety (SST8-2018) and consistent with California Building Code and Fire Standards, as applicable. Because these specifications proactively address fire safety, it is not anticipated that the Project would exacerbate wildfire risk during construction (see Appendix L).

The Project is proposed within a moderate FHSZ and is not in or near a CPUC-designated high fire threat zone. Once constructed, the new subtransmission lines and substation/switchyard upgrades would be operated and maintained in a manner consistent with SCE's standard safety procedures. Vegetation clearances within the road prism of the subtransmission line ROW would occur consistent with CPUC General Order 95 and other applicable regulatory requirements.

Therefore, due to its location, the Project would not exacerbate wildfire risks, expose receptors to pollution, or contribute to the uncontrolled spread of wildfire. Potential impacts would be limited and **less than significant**.

Mitigation: None required.

Criterion c) If located in or near a state responsibility area or lands classified as very high fire hazard severity zone, whether the project would require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

Impact 3.20-3: The Project would require the installation and maintenance of access roads, subtransmission power lines, and associated infrastructure that could exacerbate fire risk or result in temporary or ongoing impacts to the environment. (*Less than Significant*)

Although the Project sites and alignments are not proposed within or near an SRA or on lands classified as a very high FHSZ, there are considerations regarding Project facilities that could exacerbate wildfire risks that warrant evaluation. Project components (such as proposed new subtransmission lines and transformers at the Cal City Substation upgrade) have the potential to introduce ignition risks and/or exacerbate existing fire risks within the vicinity of the Project. Additionally, Project activities such as use of equipment upon dry terrain during construction or operation and maintenance could also introduce ignition risks or exacerbate conditions for fire.

Construction

Construction would entail the use of equipment and vehicles upon dry terrain in a sparsely inhabited desert location. Development and improvement of access roads and installation of subtransmission structures and the various other components of the Project would have the potential to generate ignition risks if sparks result in grass fires or other volatile incidents. Modifications within electrified substations also warrant fire risk consideration. Electrified substations contain structures and systems that can generate sparks if equipment were to fail, or an electrical arc were to occur. However, these systems are also highly regulated and subject to building and fire code requirements intended for safe operation and public safety protection. Construction within the substations would occur in a manner consistent with regulatory requirements intended to maintain the safety of workers and the public.

The Project would be constructed in a manner consistent with SCE Standard Specification SST8-2018, which contains proactive control measures to limit ignition risk and adhere to safety requirements to limit fire. The standard specifications include various safeguards to decrease ignition risk and controls for fires such as:

- Precautions in areas of fire hazards, measures to be followed for safety and to reduce ignition risks while constructing and operating equipment;
- Protocols for plan review; vehicle and equipment inspection procedures;
- Restrictions on smoking; details regarding required permits for blasting, burning, and welding (among others activities with ignition risks);
- Firefighting tools and equipment requirements;
- Water tank/trailer requirements; reporting requirements and emergency measures to follow at various project activity levels (including fire danger rating and weather monitoring); and

- Contact sheets and reporting forms would specify standards to be followed to proactively address potential fire risks during construction.

With these standards and safeguards in place, the Project's fire risk would be limited. Controls and procedures would be in place to proactively reduce fire hazards. Therefore, construction of the Project would not exacerbate fire risk and potential impacts would be **less than significant**.

Operation

Once constructed, the Project's removal of old wood distribution poles would result in a distribution system that would be more resilient, and a decreased fire risk compared to existing conditions. At the point of testing and commissioning and once operational, the Project would be operated and maintained in a manner that would conform to CPUC regulatory requirements governing fire safety and would maintain vegetation clearances consistent with CPUC general orders. SCE has committed to implementing the Project in accordance with the current wildfire mitigation plan, such that measures to proactively address and reduce fire risk would be taken during operation and maintenance of the Project.

Therefore, operation and maintenance of the Project would not exacerbate fire risk and potential impacts would be **less than significant**.

Mitigation: None required.

Criterion d) If located in or near a state responsibility area or lands classified as very high fire hazard severity zone, whether the Project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

The subtransmission lines and substations are not proposed within or near an SRA or lands classified as very high FHSZ. The Project is proposed on relatively flat sparsely developed lands and would not include habitable structures. Drainage changes proposed under the Project and their potential impacts are discussed below.

Impact 3.20-4. The Project could expose people or structures to significant risks as a result of runoff or drainage changes. (*Less than Significant with Mitigation*)

As described in Chapter 2, *Project Description*, Section 2.7.1 and discussed in Section 3.10, *Hydrology and Water Quality*, there are major drainage changes proposed as part of the Project. In the Project area, when occasional winter rain events occur, they can result in flash flood conditions that quickly result in flooding across the desert landscape. Water runs off into numerous ephemeral washes and temporarily fills lakes that become dry lakes as the water evaporates and seeps into the ground. Due to alteration of the terrain, the access routes could induce conditions of erosion and mobilize runoff if a flash flood occurred.

Although SCE has committed to implementing the BMPs from the 2019 *California Stormwater BMP Manual* (see Section 3.10.3.2), these measures are not site specific and do not support the

requirements of the current Construction General Permit. Therefore, the Project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, which would be a potentially significant impact. Therefore, to ensure that the Project drainage features would be maintained, perform as designed with respect to runoff, and do not result in sedimentation or otherwise substantially degrade surface water or groundwater, implementation of Mitigation Measure 3.10-1a, which would require the preparation of a Project-specific Erosion Control Plan, is recommended to augment the SCE BMPs.

With implementation of Mitigation Measure 3.10-1a, the risk of downstream flooding would be reduced. Moreover, no habitable structures (such as houses or workplaces requiring full-time staff) are proposed to be constructed as part of the Project and the area is sparsely populated. Therefore, the impact of exposing people or structures to significant risks, including downslope or downstream flooding or landslides, because of runoff, post-fire slope instability, or drainage changes would be mitigated to **less-than-significant** levels.

> **Mitigation:** Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Section 3.10.5.2 for the text of this mitigation measure).
>
> **Significance after Mitigation:** With the implementation of an erosion control plan, the risk of downstream flooding due to post-fire slope instability or drainage changes would be reduced to less than significant.

3.20.5.3 Cumulative Effects Analysis

The geographic scope for potential wildfire impacts consists of the footprint of the Project sites and alignments and a 2-mile buffer surrounding the sites. The main cumulative projects considered here include solar renewable energy generation facilities and other transmission infrastructure projects, as listed in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*. The environmental conditions in the Mojave Desert where the Project would be located are not highly conducive to the rapid spread of wildfire due to the lack of vegetated fuels and sparsely populated terrain of the region.

The cumulative scenario considers both the potential risks introduced by the Project and other projects due to electrified systems and the potential for mechanical failure or maintenance activities that could result in ignition. Operating solar projects, enclosed cannabis facilities, and the other projects listed in Table 3.0-1 could introduce risks for ignition; however, due to the nature and location of these projects, such land uses would not likely result in significant risks with respect to wildfire.

Criterion a)

The Project is not proposed within or near an SRA, or upon or near lands classified as very high FHSZ and operation and maintenance of the Project would not involve any road or lane closures nor substantially impair the implementation of an emergency response plan or emergency evacuation. Therefore, because there would be no operational impact associated with the Project, it would not contribute to a cumulative impact. *(No Impact)*

Impact C.3.20-1: The Project impact relative to construction substantially impairing an adopted emergency response plan or conflicting with emergency evacuation would be cumulatively considerable (*Less than Significant with Mitigation*).

As discussed under Impact 3.20-1, the Project has the potential to impair an adopted emergency response plan or interfere with evacuation if lane closures were needed due to the proposed location along U.S. 395, which is an interstate designated as an evacuation route in the San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan. Due to the proximity of the Kramer–Cal City 115 kV Subtransmission Line alignment, a potentially significant impact associated with the Project could result. Other projects listed on Table 3.0-1 with the potential to be constructed in a similar time frame along U.S. 395 include solar facilities and a transmission line in the vicinity of the Project. These projects could contribute similar potential traffic delays as the Project, they would also be required to manage traffic in a manner that would not interfere with emergency ingress and egress. Therefore, when combined with the incremental impacts of the cumulative projects, the potential Project impact would be cumulatively considerable.

Implementation of a traffic management plan would be required pursuant to Mitigation Measure 3.17-2a to reduce potential traffic conflicts associated with the Project and prevent emergency response and evacuation delays. With mitigation implemented, the Project impact would not be cumulatively considerable. The cumulative impact would be **less than significant with mitigation**.

> **Mitigation:** Implement Mitigation Measure 3.17-2a, *Traffic Management Plan* (see Section 3.17.5.2 for the text of this mitigation measure).
>
> **Significance after Mitigation:** Less than significant.

Criterion b)

Impact C.3.20-2: The Project impact of exacerbating wildfire risks, and thereby contributing to the uncontrolled spread of a wildfire would not be cumulatively considerable. (*Less than Significant*)

The Project would be located in a moderate fire hazard severity zone and mostly in a local responsibility area, as discussed under Impact 3.20-2. The area also has limited vegetative fuels and is sparsely populated. The Project does not include structures intended for occupation. Therefore, the Project would not exacerbate wildfire risks that could expose occupants to pollution or contribute to the uncontrolled spread of wildfire. As noted in Section 3.20.5.1, the cumulative effects analysis assumes that other projects in the cumulative scenario would adhere to the same or similar requirements governing fire prevention and public safety. For example, as with the Project, the SCE BESS facility and Ivanpah–Control project would be constructed and operated in a manner consistent with all applicable California and international building code standards and CPUC safety requirements. When considered together, the Project and other cumulative projects would be constructed and operated in strict compliance with fire safety standards, and would therefore, not exacerbate wildfire risk. Because the Project and the cumulative projects are proposed in a moderate FHSZ with low fuels and in a sparsely populated area, the risk for an uncontrolled wildfire is minimal. Therefore, the Project's less-than-significant

impact, when considered along with potential impacts of other projects in the cumulative scenario, would not result in a significant cumulative contribution to uncontrolled wildfire. The cumulative impact under this criterion would be **less than significant**.

Mitigation: None required.

Criterion c)

Impact C.3.20-3: The Project impact associated with installation and maintenance of access roads, subtransmission power lines, and associated infrastructure that could exacerbate fire risk or result in temporary or ongoing impacts to the environment would not be cumulatively considerable. (*Less than Significant*)

It is acknowledged in the analysis that the Project could contribute to ignition risks due to the use of equipment and vehicles on dry terrain during construction. Additionally, access road maintenance and the presence of electrified structures including powerlines could generate sparks that could result in a fire once operational. However, as discussed under Impact 3.20-3, because the Project would be constructed, operated, and maintained in accordance with SCE and CPUC fire safety standards, these risks would be minimal. Similar to the Project, other projects in the cumulative scenario would also be held to fire safety standards that would reduce the risk of fire, as discussed in Section 3.20.5.1. The impact attributable to the Project would not be cumulatively considerable, and the cumulative impact would be less than significant.

Mitigation: None required.

Criterion d)

Impact C.3.20-4. The Project impact associated with exposing people or structures to significant risks as a result of runoff or drainage changes would be cumulatively considerable. (*Less than Significant with Mitigation*)

As discussed under Impact 3.20-4, the Project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, which would be a potentially significant impact. When combined with the potential incremental impacts of the cumulative projects, the potential Project impact would be cumulatively considerable. Therefore, Mitigation Measure 3.10-1a, which would require the preparation of a Project-specific Erosion Control Plan, is recommended. With implementation of Mitigation Measure 3.10-1a, the risk of downstream flooding would be reduced, which would reduce the Project impact's contribution to the significant cumulative impact to less than cumulatively considerable. The cumulative impact would be mitigated to less-than-significant levels.

Mitigation: Implement Mitigation Measure 3.10-1a, *Erosion Control Plan* (see Section 3.10.5.2 for the text of this mitigation measure).

Significance after Mitigation: Less than significant.

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CHAPTER 4
Alternatives

4.1 Introduction to Alternatives

CEQA requires a lead agency to analyze a reasonable range of alternatives to a proposed project that could feasibly attain most of the basic objectives of the project while substantially reducing or eliminating significant environmental effects. It also requires that an EIR evaluate a "no project" alternative to allow decision-makers to compare impacts of approving a project with the impacts of not approving it (CEQA Guidelines Section 15126.6). This chapter describes the factors considered in identifying and screening potential alternatives, explains why some potential alternatives were eliminated from further consideration, and describes those alternatives that were carried forward for analysis. This chapter also compares the environmental impacts of the Project and alternatives evaluated in detail. This comparison is based on the analysis of environmental impacts of the Project provided in Chapter 3, *Environmental Analysis of the Project*.

4.2 CEQA Context for the Consideration of Alternatives

Section 15126.6 of the CEQA Guidelines provides the following guidance for discussion of project alternatives:

- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation (CEQA Guidelines Section 15126.6[a]).
- An EIR is not required to consider alternatives that are infeasible (Section 15126.6[a]).
- The discussion of alternatives shall 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 (Section 15126.6[b]).
- The range of alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects (Section 15126.6[c]).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project (Section 15126.6[d]).
- There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason (Section 15126.6[a]).

In addition to project alternatives, CEQA requires an EIR to evaluate a "no project" alternative to allow decision-makers to compare the impacts of approving a proposed project with the impacts of not approving it (CEQA Guidelines Section 15126.6[e]). The No Project Alternative analysis in this EIR evaluates the existing conditions at the time the notice of preparation was published (i.e., November 8, 2023) as well as what reasonably would be expected to occur in the foreseeable future if the Project were not approved.

4.3 Alternatives Development and Screening Process

According to CEQA Guidelines Section 15126.6(c), an EIR should "identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination." Consistent with CEQA Guidelines Section 15126.6, the California Public Utilities Commission (CPUC) screened potential alternatives and thereafter determined to carry some forward for more detailed consideration based on the criteria identified below in Sections 4.3.1 through 4.3.4.

4.3.1 Attainment of Project Objectives

Section 1.3.2, *Objectives*, in Chapter 1, *Introduction*, identifies the four Project objectives listed below. Any alternative determined not to meet most (i.e., at least three) of the basic Project objectives was not carried forward for more detailed review.

Objective 1: Add load-serving capacity in the California City portion of the electrical needs area (ENA) to serve current and long-term forecasted electrical demand.

In this context, *add load-serving capacity* means contribute to the local electrical grid's capacity to serve current and forecasted customer demands in the portion of the ENA within California City as shown in Figure 1-1, *Electrical Needs Area*, in Chapter 1. The maximum operating limit of Cal City Substation is limited by the power the two 33 kV distribution source lines can provide, which is 18 megavolt amperes (MVA). The 2024 electrical peak demand forecast for the California City portion of the ENA is 120 MVA and the long-term forecasted electrical demand for 2026 through 2031 is 167 MVA (SCE 2023a).[1] To meet Objective 1, an alternative must feasibly add at least 149 MVA within the California City portion of the ENA. Refer to Section 1.3.1, *Project Purpose*, for additional details about the forecasted maximum operating limit and the peak forecasted load for the California City portion of the ENA.

Objective 2: Improve system reliability within the ENA by providing diverse routes of power supply to the region.

For substations with only two source lines, *route diversity* (i.e., the ability for the source lines to follow different routes or paths to the substation) is critical to providing reliable electric service. Construction of two source lines along the same path—either physically adjacent to each other or on shared structures—increases the vulnerability of both lines to experiencing a concurrent

[1] SCE is currently implementing several "mitigation projects" to provide up to 77 MVA additional temporary capacity to minimize the amount of load that would otherwise go unserved until the Project would be constructed (see Section 1.3.1, *Project Purpose*, for details).

outage due to a common contingency event, such as a car strike. Reliability decreases the longer two source lines share a common path. Route diversity improves system reliability because an event resulting in an outage along one line is less likely to affect the second line if it is physically distanced from the other. To meet Objective 2, a subtransmission line alignment alternative must provide diverse routes of power supply to the region.

Objective 3: Improve system operational flexibility by minimizing reliance on the Edwards Substation (located on a military base with restricted access) to provide power to the ENA (adjacent to the military base).

To meet Objective 3, an alternative would need to include source lines to the Cal City Substation that would be connected to a power source other than, or in addition to, the Edwards Substation. The purpose of Objective 3 is to allow Southern California Edison (SCE) to maintain rapid accessibility of the subtransmission facilities for emergency and maintenance purposes in a location outside the secure areas of the Edwards Air Force Base.

Objective 4: Improve system reliability within the ENA by providing a diversely routed second 115 kV source line to the Edwards Substation.

To meet Objective 4, an alternative would need to include a second 115 kV source line to the Edwards Substation. Currently, the Edwards Substation is served by a single 115 kV subtransmission line (i.e., Edwards–Holgate-Southbase), which poses a reliability issue should that line become inoperable for any reason, such as to conduct maintenance activities or due to an emergency contingency event.

4.3.2 Feasibility

In this context, *feasible* means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (Public Resources Code Section 21061.1; CEQA Guidelines Sections 15126.6, 15364). None of these factors alone establishes a fixed limit on the scope of alternatives (CEQA Guidelines Section 15126.6[f]). A sufficient demonstration of financial infeasibility requires more than showing that the alternative would be more expensive or less profitable; it requires evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project (*Citizens of Goleta Valley* [1998] 197 Cal. App. 3d. 1167, 1181). The alternatives CPUC determined to be infeasible for any of the potential reasons identified previously were not carried forward for more detailed review in this EIR.

4.3.3 Significant Impacts of the Project

Chapter 3, *Environmental Analysis of the Project*, discloses and analyzes the Project's potential significant impacts. CEQA requires an alternative to "avoid or substantially lessen any of the significant effects of the project" (CEQA Guidelines Section 15126.6[a]). Alternatives that would not substantially reduce or avoid a significant effect of the proposed project are dismissed from further consideration. CEQA does not require the alternatives discussion to include as much detail as the analysis for the proposed project, but the EIR must contain "sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed

project" (CEQA Guidelines Section 15126[d]). The Project would result in significant and unavoidable environmental effects associated with aesthetics, noise, recreation, and tribal cultural resources (see **Table 4-15**, *Summary of Impacts of the Project and Alternatives*). No other significant impacts of the Project have been identified that cannot be reduced to a less-than-significant level with implementation of mitigation.

4.3.4 Alternative Cannot Be Remote or Speculative

For purposes of this analysis, *remote* means unlikely or having only a slight chance of occurring, and *speculative* means unsupported, theoretical, uncertain, or based on conjecture or guesswork. Any potential alternative determined to be remote or speculative was not carried forward for more detailed review.

4.4 Alternatives Considered

The CPUC considered various route alignments identified in the routing report prepared on behalf of SCE for the Project (Insignia 2022; see **Appendix M**). The CPUC also invited input about potential alternatives from SCE as part of the application process, from agencies and others during the public scoping period for the EIR, and from the CEQA team identified in Chapter 6, *Report Preparation*, as part of the EIR development process.

As a result of the alternatives development and screening process, this EIR initially considered the following 16 potential Project alternatives:

- Alternatives to the Cal City Substation Upgrade
- Technology Alternatives
  - 115 kV Loop Alternative
  - Cal City/Ivanpah–Control Collocation Alternative
  - Underground Line Alternative
  - 33 kV Reconductoring Alternative
  - Microgrid Alternative
- Alternatives to Subtransmission and Distribution Line Alignment (Routing Alternatives)
  - Sequoia Boulevard Alternative
  - Twenty Mule Team Parkway Alternative
  - Alternative Route 2 of the Pappas Line Realignment Options
  - Cal City–Edwards and Edwards–Holgate Alternative
  - Randsburg Alternative
  - Windhub Alternative
  - Goldtown Alternative
  - Kramer–Edwards Alternative
  - Kramer–Edwards-Holgate Alternative
  - State Route 58 Alternative Route

For the reasons discussed below, the CPUC carried the following three Project alternatives forward for more detailed consideration, in addition to the No Project Alternative:

- Cal City/Ivanpah–Control Collocation (Alternative 1)
- Twenty Mule Team Parkway Alternative (Alternative 2)
- Cal City/Ivanpah–Control Collocation with the Twenty Mule Team Parkway (Alternative 3)

4.5 Alternatives Rejected from Detailed Review

Any potential alternative determined not to meet most of the basic Project objectives; to be infeasible, not able to avoid or substantially lessen one or more potential significant impacts of the Project; or to be either remote or speculative was not carried forward for detailed consideration. A brief description and rationale for not carrying forward potential alternatives that failed the screening process is provided below.

4.5.1 Alternatives to the Cal City Substation Upgrade

4.5.1.1 Description

The Project would expand SCE's Cal City Substation by an area of 10 acres. SCE currently owns the parcels where the Cal City Substation expansion and improvements are proposed. This alternative would involve expanding the existing substation at a different site in the immediate vicinity of the existing substation. All of the other non-Cal City Substation components of the Project (e.g., the subtransmission lines) would be implemented as proposed.

4.5.1.2 Rationale for Rejection

CEQA Guidelines Section 15126.6(f)(2)(A) states:

> *The key question and first step in analysis 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 be considered for inclusion in the EIR.*
>
> *If the lead agency concludes that no feasible alternative locations exist, it… should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project that must be in close proximity to natural resources at a given location.*

As is evident from this language, the state recognizes that there are certain instances where a project is directly tied to a certain location due to the presence of resources on which the project depends.

The CPUC rejected Alternatives to the Cal City Substation Upgrade from more detailed consideration because the potential alternative failed screening based on one of the four screening criteria. **Table 4-1**, *Screening: Alternative Cal City Substation Sites*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-1
SCREENING: ALTERNATIVE CAL CITY SUBSTATION SITES

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	Alternative Cal City Substation Sites would be able to meet each of the Project objectives identified in Section 4.3.1 because it could feasibly add at least 149 MVA within the California City portion of the ENA, could accommodate diverse routes of power supply to the region, could include source lines that would be accessible for maintenance purposes in a location outside the secure areas of the Edwards Air Force Base, and could accommodate a second 115 kV source line to Edwards Substation.
Would the alternative be potentially feasible?	Pass	Alternative Cal City Substation Sites could be accomplished in a successful manner within a reasonable period of time taking into account the specified factors.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Fail	Alternative Cal City Substation Sites would likely result in similar impacts as the Project and would not avoid or substantially reduce any of the Project's potential significant impacts on aesthetics, noise, recreation, or tribal cultural resources because the infrastructure and activities that would cause the Project's significant impacts would also be required for the Alternative Cal City Substation Sites in the same region where aesthetic resources and tribal cultural resources, in particular, would be substantially similar to conditions in the immediate Project area.
Would the alternative be remote or speculative?	Pass	Alternative Cal City Substation Sites would have a reasonable chance of occurring, and based on the amount of undeveloped land in the immediate vicinity of the existing Cal City Substation, it is not considered speculative.

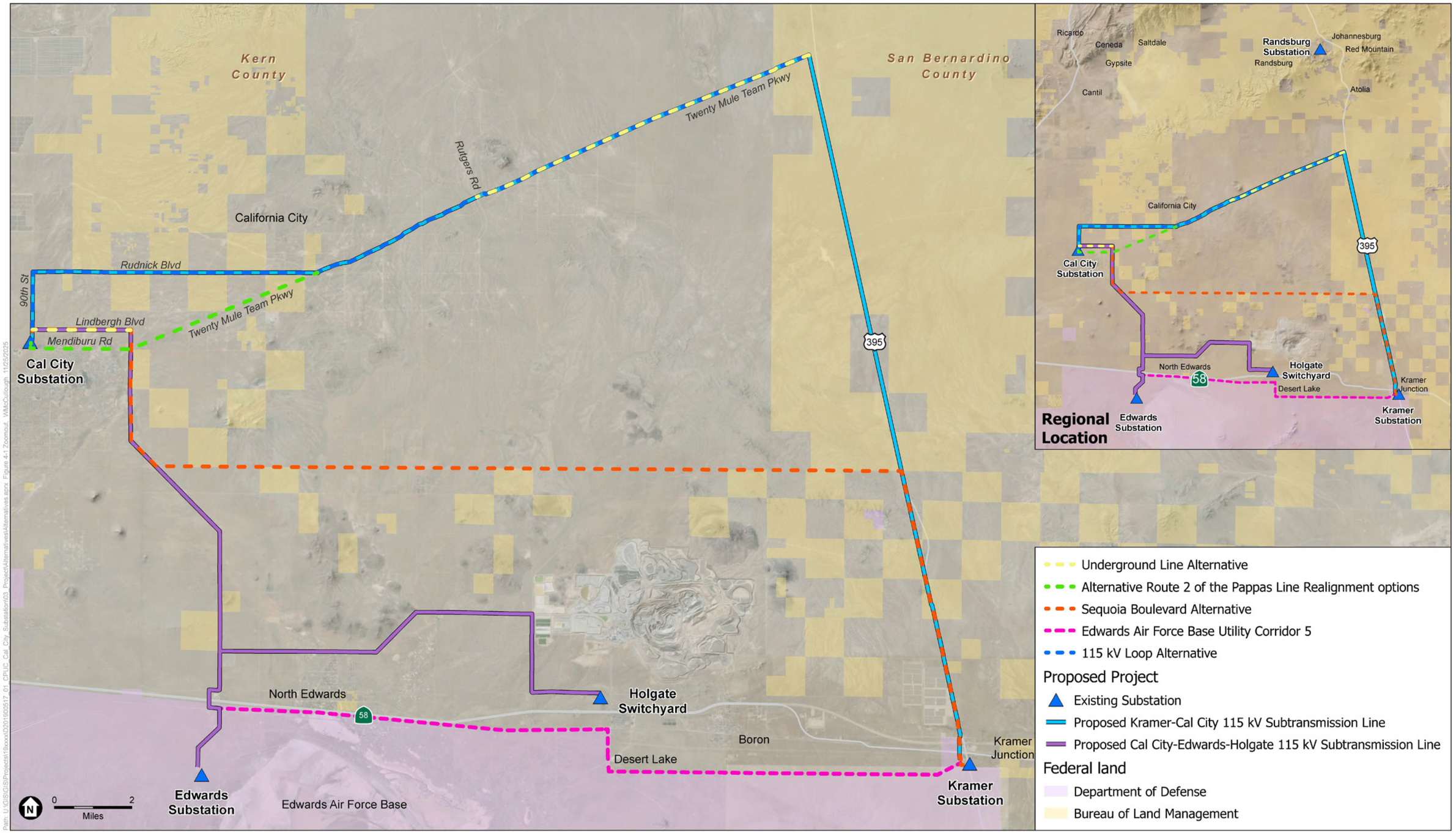
NOTES: ENA = electrical needs area; kV = kilovolt; MVA = megavolt amperes

4.5.2 115 kV Loop Alternative

4.5.2.1 Description

The 115 kV Loop Alternative would replace the proposed Kramer–Cal City 115 kV Subtransmission Line with a new, approximately 23-mile-long double-circuit 115 kV subtransmission line that would loop the existing Kramer–Inyokern-Randsburg No. 1 115 kV Subtransmission Line along the U.S. Highway 395 (U.S. 395) corridor into Cal City Substation, creating the new Kramer–Cal City 115 kV Subtransmission Line circuit and the new Cal City–Inyokern-Randsburg 115 kV Subtransmission Line circuit (Grid SME 2024). Under this alternative, the subtransmission line would be within the same alignment as the proposed Kramer–Cal City 115 kV Subtransmission Line from U.S. 395 to the Cal City Substation (see **Figure 4-1**, *Alternatives Screened from Detailed Review*); however, instead of a single-circuit subtransmission line, it would be a double-circuit subtransmission line, which means it would include six conductor phases instead of three conductor phases, and would likely include taller and more prominent tubular steel poles then the light-weight steel poles proposed for the Project. The 115 kV loop portion of the alternative would eliminate the need for the proposed 19-mile Kramer–Cal City 115 kV Subtransmission Line segment from Kramer Substation to Cuddeback Road.

The 115 kV Loop Alternative would include a single-circuit 115 kV subtransmission line from the Cal City Substation to the Edwards Substation. The new Cal City–Edwards 115 kV Subtransmission Line would follow the same alignment as the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line, except the alternative would not include the 12-mile alignment east of 140th Street and would instead rely on the existing Kramer–Holgate-Edwards 115 kV Subtransmission Line (Grid SME 2024).



SOURCE: ESA, 2022

Cal City Substation 115 kV Upgrade Project

Figure 4-1
Alternatives Screened from Detailed Review

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4.5.2.1 Rationale for Rejection

SCE has stated that implementation of the 115 kV Loop Alternative would result in all of SCE's Kramer 115 kV System being under California Independent System Operator (CAISO) control and would require that SCE submit the proposal through the CAISO Transmission Planning Process and obtain CAISO approval. If approved, all of SCE's existing non-CAISO-controlled Kramer 115 kV System facilities would be reviewed for compliance with CAISO planning criteria. This would have the potential to require additional system upgrades, which could substantially affect cost, Project timing, and environmental impacts (SCE 2025a). Regardless of the implications with CAISO, SCE has stated that for an alternative to the proposed Kramer–Cal City 115 kV Subtransmission Line to meet the needs of the Project, it would need to include construction of a new 115 kV line that directly connects the Kramer Substation and the proposed Cal City Substation (SCE 2025a).

Additionally, as part of its Ivanpah–Control Project,[2] SCE has proposed to tear down and rebuild the Kramer–Inyokern-Randsburg 115 kV Subtransmission Line. The technical feasibility of the 115 kV Loop Alternative is uncertain relative to the Kramer–Inyokern-Randsburg 115 kV Subtransmission Line's existing load capacity and its load capacity if the Ivanpah–Control Project is implemented.

The CPUC rejected a 115 kV Loop Alternative from more detailed consideration because the potential alternative failed screening based on two of the four screening criteria. **Table 4-2**, *Screening: 115 kV Loop Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-2
SCREENING: 115 KV LOOP ALTERNATIVE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	The 115 kV Loop Alternative would meet most of the Project objectives identified in Section 4.3.1. Although it is unknown if it would be able to serve current and long-term forecasted electrical demand (GridSME 2024), this alternative would provide three subtransmission source lines to the Cal City Substation, including two diverse routes of power supply to the region, would include two source lines that would be accessible for maintenance purposes in a location outside the secure areas of the Edwards Air Force Base, and would include a second 115 kV source line to Edwards Substation.
Would the alternative be potentially feasible?	Fail	Given the complications of the 115 kV Loop Alternative relative to the CAISO Transmission Planning Process, it does not have the potential to be accomplished in a successful manner within a reasonable period of time, taking into account the specified factors.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Fail	The 115 kV Loop Alternative would not avoid or substantially reduce the Project's potential significant impacts on aesthetics, noise, recreation, and tribal cultural resources. In fact, the large frame and increased scope of required tubular steel poles would likely increase those impacts relative to the Project.

[2] In 2019 and 2020, SCE submitted a permit to construct application and an amended application, respectively, to the CPUC for the Ivanpah–Control Project. The CPUC's environmental review process for the Ivanpah–Control Project is underway with the preparation of a Draft EIR that is expected to be published in early 2026.

Screening Criteria	Pass/Fail	Rationale
Would the alternative be remote or speculative?	Pass	The Kramer–Inyokern-Randsburg No. 1 115 kV Subtransmission Line was constructed over 110 years ago (in 1913), so its current integrity for use under this alternative is considered remote and speculative; however, SCE has proposed to tear down and replace the Kramer–Inyokern-Randsburg 115 kV Subtransmission Line as part of its Ivanpah–Control Project (see below and Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*), which would substantially improve the integrity of that line. Acknowledging both present uncertainty and the potential resolution of it, the 115 kV Loop Alternative has been determined to pass this screening criterion.

NOTES: CAISO = California Independent System Operator; kV = kilovolt.

4.5.3 Underground Line Alternative

4.5.3.1 Description

To reduce the significant and unavoidable aesthetics impact reflected at KOP 3 and the U.S. Bureau of Land Management (BLM)-suggested KOP 3 (see Section 3.1, Aesthetics, Impact 3.1-2c), this alternative would include two underground line segments, one for each of the proposed 115 kV subtransmission lines (see Figure 4-1, *Alternatives Screened from Detailed Review*). The portion of the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line along the northern perimeter of the city of California City urban center from 90th Street to the point where the proposed alignment turns south—a distance of approximately 2.5 miles—would be constructed within a concrete duct bank underground. The portion of the proposed Kramer–Cal City 115 kV Subtransmission Line along Twenty Mule Team Parkway from Rutgers Road to U.S. 395—a distance of approximately 9 miles—would also be constructed within a concrete duct bank underground. Most of the following discussion is based on the description for a similar SCE-proposed underground 115 kV subtransmission line (CPUC 2016).

The underground concrete duct banks would contain conduits, spacers, ground wire, and concrete encasements. Duct banks for 115 kV subtransmission lines typically contain six to eight polyvinyl chloride conduits (each approximately 6 inches wide) that are fully encased with a minimum of 3 inches of concrete. They can accommodate up to six cables and may include distribution or telecommunications lines. The underground duct banks would use three of the six conduits and leave three spare conduits for future use pursuant to SCE's standards for 115 kV underground construction. Each duct bank would be approximately 40 inches high by 20 inches wide and would require 36 inches of cover. Temporary disturbance area is assumed to be a width of 50 feet for trenching in new underground conduit per circuit (CPUC 2016).

Below-grade concrete enclosures, referred to as vaults, would be required where underground electrical or telecommunications lines would terminate, be spliced together, or transition to or from overhead positions. They would be placed at intervals approximately 1,500 feet apart along the underground subtransmission line. The vaults would be 10 feet wide by 20 feet long by 9 feet and 6 inches high (SCE 2015). Each underground vault would require 150 feet by 150 feet of temporary disturbance and would result in a permanent disturbance area of 20 feet by 20 feet for maintenance access.

4.5.3.2 Rationale for Rejection

The Underground Line Alternative would satisfy the Project objectives, but could substantially lengthen the schedule for the CEQA and NEPA permit process due to increased studies that would be needed to adequately design the alternative and assess its environmental impacts as well as increase the duration of construction, both of which could extend the expected in-service date of the Project beyond 2028 and prolong the inadequate load-serving capacity in the California City portion of the ENA. Additionally, it could result in significant new impacts on air quality, particularly related to the generation of fugitive dust, and result in greater risk of inadvertent discovery and damage to potential eligible cultural and tribal cultural resources. This alternative would also increase ground disturbance-related impacts on biological resources, including desert tortoise, Mohave ground squirrel, and other sensitive wildlife and plant species. Finally, the Underground Line Alternative is remote and speculative because it would require BLM authorization that the BLM is not entertaining as part of the NEPA review for the Project (BLM 2025).

The CPUC rejected the Underground Line Alternative from more detailed consideration because the potential alternative failed screening based on two of the four screening criteria. **Table 4-3**, *Screening: Underground Line Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-3
SCREENING: UNDERGROUND LINE ALTERNATIVE

Screening Criteria	Pass / Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	The Underground Line Alternative has the potential to meet all of the Project objectives identified in Section 4.3.1.
Would the alternative be potentially feasible?	Fail	The Underground Line Alternative does not have the potential to be accomplished in a successful manner within a reasonable period of time, taking into account the specified factors, due to the schedule extension needs and potential to cause the additional significant environmental impacts described above.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Pass	The Underground Line Alternative technically passes this criterion because it would substantially reduce the Project's potential significant impacts on aesthetics. As noted above in the context of environmental factors affecting feasibility, however, this alternative could substantially increase impacts relative to the Project on air quality, biological resources, and tribal cultural resources.
Would the alternative be remote or speculative?	Fail	The Underground Line Alternative is remote and speculative because it would require BLM authorization that the BLM is not entertaining as part of the NEPA review for the Project (BLM 2025).

NOTE: BLM = U.S. Bureau of Land Management

4.5.4 33 kV Reconductoring Alternative

4.5.4.1 Description

The operating capacity of the Cal City Substation to serve the ENA is currently limited to 18 MVA under a normal system configuration (SCE 2023b). Although the substation has a total transformer capacity of 36.4 MVA, its full utilization is unachievable because the 33 kV distribution source

lines, which deliver power to the substation, are constrained by voltage limitations that limit the maximum power they can deliver to 18 MVA (SCE 2023b). Given the MVA capacity level of the existing 33 kV lines supporting the Cal City Substation (from the Randsburg and Edwards stations), simply increasing the capacity of the 33 kV lines via reconductoring was considered as an alternative to the Cal City Substation 115 kV Upgrade Project.

Reconductoring the 33 kV source lines to the Cal City Substation would increase the load-serving capacity in the California City portion of the ENA. In fact, SCE has already completed partial reconductoring of the existing Cal City Substation source lines, including the 33 kV source line from the Edwards Substation, and is in the process of extending a 33 kV line to the Cal City Substation from the Randsburg Substation, referred to as the Distribution Pappas 33 kV Line (see Cumulative Project No. 7 in Table 3.0-1, *Cumulative Projects within 5 Miles of the Project*). Additionally, SCE has installed temporary 33/12 kV distribution pad mount substations in the ENA.[3] The overall capacity available to the ENA under this alternative would be a combination of the available capacity at the Cal City Substation with the reconductored sources line and the capacity of the temporary 33/12 kV distribution pad mount substations.

4.5.4.2 Rationale for Rejection

The reconductoring would contribute to the overall capacity of the ENA; however, this increased capacity is not sufficient to meet the projected demand, and the temporary 33/12 kV distribution pad mount substations are not feasible long-term substitutes for the proposed Cal City Substation improvements (SCE 2023a). Transmission-voltage facilities would be required to supply the forecasted load to meet the demand in the California City portion of the ENA. This is because distribution-voltage facilities alone would not be sufficient to maintain operation of the power grid without significant power outages if a grid component fails. This event sometimes is referred to as an N-1 condition.[4] In addition to the technical infeasibility of this alternative relative to not being able to add load servicing capacity to the California City portion of the ENA, this alternative would not achieve the system reliability objectives (Objectives 2 and 4). However, it would minimize reliance on the Edwards Substation (located on a military base with restricted access) compared to the Project because it would include a new line on the Edwards Air Force Base (Objective 3). Because only one of the Project objectives would be achieved from the 33 kV Reconductoring Alternative, it was rejected from detailed review in this EIR.

The CPUC rejected the 33 kV Reconductoring Alternative from more detailed consideration because the potential alternative failed screening based on two of the four screening criteria. **Table 4-4**, *Screening: 33 kV Reconductoring Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

[3] Temporary distribution pad mount substations consist of pad-mounted distribution transformers and associated switching and protective equipment. They provide temporary capacity, but they are not constructed using substation-class equipment, cannot accommodate many of the design elements associated with a standard substation (e.g., telemetry, remote monitoring and operation, emergency overload capacity, security measures), and they are not adequate for long-term use and do not provide a level of service consistent with the rest of SCE's electrical system.

[4] Stated another way, an N-1 condition is a sequence of events consisting of the initial loss of a single generator or transmission component (Primary Contingency), followed by system adjustments, followed by another loss of a single generator or transmission component (Secondary Contingency).

TABLE 4-4
SCREENING: 33 KV RECONDUCTORING ALTERNATIVE

Screening Criteria	Pass / Fail	Rationale
Would the alternative meet most of the basic project objectives?	Fail	The 33 kV Reconductoring Alternative would not meet three of the Project objectives identified in Section 4.3.1 because it would not add at least 149 MVA within the California City portion of the ENA, would not provide new diverse routes of power supply to the region, and would include a second 115 kV source line to the Edwards Substation.
Would the alternative be potentially feasible?	Fail	The 33 kV Reconductoring Alternative does not have the potential to be accomplished in a successful manner within a reasonable period of time, taking into account the specified factors. Details about this potential alternative's infeasibility are described above.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Pass	The 33 kV Reconductoring Alternative would avoid the potential significant impacts of the proposed 115 kV subtransmission lines on aesthetics, tribal cultural resources, and noise.
Would the alternative be remote or speculative?	Pass	The 33 kV Reconductoring Alternative is neither remote nor speculative.

NOTES: ENA = Electrical Needs Area; kV = kilovolt; MVA = megavolt-ampere

4.5.5 Microgrid Alternative

4.5.5.1 Description

The Microgrid Alternative includes the construction of up to 16 10 megawatt (MW) microgrid facilities to supply the projected capacity to the California City portion of the ENA. Each microgrid facility would require the construction of a battery energy storage substation and, due to the lack of existing electrical infrastructure to charge the batteries, this alternative would include construction of new renewable energy facilities, such as an approximately 8 MW photovoltaic solar system, an 8 MW wind turbine, or a 10 MW generator. Each of these microgrid facilities would require approximately 40 acres of new permanent land disturbance; therefore, the total new disturbance for this alternative would be 640 acres. The photovoltaic solar systems that would be used to charge the batteries in instances where wind generation is not sufficient are the primary drivers of the new land requirements for this alternative. The Microgrid Alternative would also require new interconnection subtransmission and/or distribution lines to connect each of the 16 microgrid facilities to the grid. This alternative would also involve the construction of a new Kramer–Edwards-Holgate 115 kV Subtransmission Line, as described in Section 4.5.6.8.

4.5.5.2 Rationale for Rejection

The Microgrid Alternative would contribute to the overall capacity of the ENA (Objective 1), would provide multiple diverse routes of power supply to the California City portion of the ENA (Objective 2), and would minimize reliance on the Edwards Substation (Objective 3); however, it is unclear if the Kramer–Edwards-Holgate 115 kV Subtransmission Line would provide a diversely routed second 115 kV source line to the Edwards Substation (Objective 4). Although it would appear to meet most of the Project objectives, the permanent area of disturbance associated with the microgrid facilities would likely result in an increased level of environmental impacts relative to the Project.

Additionally, the Microgrid Alternative would be infeasible for two separate reasons. First, the potential alternative would be infeasible based on environmental considerations. The development of this alternative would result in substantial permanent land disturbance that would likely result in impacts that would be greater than those of the Project on biological, cultural, paleontological, and hydrologic resources as well as on air quality and noise. Second, the Microgrid Alternative would also be infeasible based on legal considerations. Consistent with the Court's decisions in *Habitat & Watershed Caretakers v. City of Santa Cruz* (2013) 213 CA4th 1277 and in *Kenneth Mebane Ranches v. Superior Court* (1992) 10 CA4th 276, an alternative may be found legally infeasible if its adoption is beyond the powers conferred by law on the lead agency. Here, the CPUC does not have authority to approve solar, wind, generator, or energy storage project components. Because the Microgrid Alternative was determined to be infeasible, it was dismissed from further consideration.

The CPUC rejected the Microgrid Alternative from more detailed consideration because the potential alternative failed screening based on two of the four screening criteria. **Table 4-5**, *Screening: Microgrid Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-5
SCREENING: MICROGRID ALTERNATIVE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	The Microgrid Alternative has the potential to meet three of the four Project objectives identified in Section 4.3.1; however, it is unclear if the Kramer–Edwards-Holgate 115 kV Subtransmission Line would provide a diversely routed second 115 kV source line to the Edwards Substation (Objective 4). The CPUC preliminarily has determined that the alternative does have the potential to accomplish most of the Project objectives, so that it passes this screening criterion.
Would the alternative be potentially feasible?	Fail	The Microgrid Alternative does not have the potential to be accomplished in a successful manner within a reasonable period of time, taking into account legal factors, including the CPUC's lack of jurisdiction over electrical generation facilities and environmental ones. This alternative would be expected to cause new or more significant adverse impacts than the Project due to land disturbance-related effects on biological, cultural, paleontological, and hydrologic resources as well as on air quality and noise. Additional details are provided above.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Pass	For purposes of screening, the Microgrid Alternative has been determined to pass this criterion even though the answer is uncertain. Depending on the locations of the microgrid facilities and associated interconnection subtransmission lines, the Microgrid Alternative may or may not avoid the specific significant and unavoidable impacts of the Project. As noted above, in the context of environmental factors affecting feasibility, this alternative would likely result in new additional significant and unavoidable impacts beyond those described for the Project.
Would the alternative be remote or speculative?	Fail	Approval and implementation of the Microgrid Alternative in this permit to construction proceeding is remote and speculative due to CPUC's lack of jurisdiction over electrical generation facilities. Additional details are provided above.

NOTES: CPUC = California Public Utilities Commission; kV = kilovolt

4.5.6 Subtransmission and Distribution Line Alignment Alternatives

Nine alignment alternatives have been rejected from detailed review in this EIR. Below are brief descriptions of each of the nine alternatives and the reasons why the alternatives were not carried forward for detailed review.

4.5.6.1 Sequoia Boulevard Alternative

Description

SCE identified the Sequoia Boulevard Alternative in its Proponent's Environmental Assessment Section 4.1.9.1, *Sequioa Boulevard Alternative* (SCE 2023b). This alternative alignment differs from the Project in that the new Kramer–Cal City 115 kV Subtransmission Line would follow a mostly different route than that identified for the Project (see Figure 4-1, *Alternatives Screened from Detailed Review*).

This alternative alignment would begin at the Kramer Substation and generally follow an existing utility corridor north along the west side of U.S. 395 for approximately 7.6 miles. Instead of continuing north for an additional approximately 11 miles like the Project alignment, the alternative alignment would then turn due west and continue for 1.3 miles along the same alignment as the Isner distribution line and access road before the distribution line would turn northwest and the alternative alignment would continue overland in an area with no existing utility infrastructure or access roads for 3.1 miles to 270th Street. The Isner distribution line would be added as underbuild to the alternative subtransmission line along the 1.3-mile segment, and the existing distribution line wood poles would be removed. West of 270th Street, the alignment would continue west and parallel Sequoia Boulevard, an existing unimproved dirt road, for 15 miles, to the intersection of Sequoia Boulevard and 140th Street, where the route would meet the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment. From Claymine Road to a location about 3.1 miles west of Claymine Road, the Castle Butte distribution line would be added as underbuild on the subtransmission line, and the existing wood distribution poles would be removed.

At the location where the alternative alignment meets the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment, the alternative alignment turns northwest, and both lines would follow roughly the same alignment. The alternative subtransmission line poles would parallel the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line poles approximately 50 feet to the east. The alternative route for the new Kramer–Cal City 115 kV Subtransmission Line would include the same components as the Project; however, the new alternative Kramer–Cal City 115 kV Subtransmission Line would be shortened from approximately 42 miles to 34 miles, an 8-mile reduction in length. This alternative would require 19 miles of road improvements or new roads that would require grading along this east-west segment. Much of this segment would establish a new utility corridor where one currently does not exist.

Rationale for Rejection

This alternative would satisfy all of the Project objectives by adding the projected capacity to the California City portion of the ENA, reducing reliance on the Edwards Substation, adding a second 115 kV subtransmission source line to the Edwards Substation, and improving system reliability by providing diverse routes of power to the region. Although the approximately 7 miles of the new Kramer–Cal City 115 kV Subtransmission Line and new Cal City–Edwards-Holgate 115 kV Subtransmission Line would be within 50 feet adjacent to each other (and so would be non-diverse), this alternative would satisfy Objective 2 to a lesser degree when compared to the more diverse routes associated with the Project. Placing these lines physically adjacent to each other increases the vulnerability of both lines being subject to a concurrent outage due to a common event, thereby reducing reliability.

The alternative is not considered to be legally feasible as defined in CEQA Guidelines Section 15126.6(f)(1) because SCE cannot reasonably acquire, control, or otherwise obtain access to parts of the alignment without BLM authorization, which BLM is not entertaining as part of the NEPA review for the Project (BLM 2025). Additionally, although the Sequoia Boulevard Alternative would avoid or reduce the Project's specific potential significant impacts on aesthetics and recreation and the impact associated with construction noise, it would likely result in other potential significant impacts on aesthetics.

The CPUC rejected the Sequoia Boulevard Alternative from more detailed consideration because the potential alternative failed screening based on two of the four screening criteria. **Table 4-6**, *Screening: Sequoia Boulevard Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-6
SCREENING: SEQUOIA BOULEVARD ALTERNATIVE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	The Sequoia Boulevard Alternative has the potential to meet the Project objectives identified in Section 4.3.1 even though it would include reduced diverse routes of power supply to the region than the Project (Objective 2).
Would the alternative be potentially feasible?	Fail	The Sequoia Boulevard Alternative does not have the potential to be accomplished in a successful manner because SCE cannot reasonably acquire, control, or otherwise obtain access to parts of the alignment without BLM authorization, which BLM is not entertaining as part of the NEPA review for the Project.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Pass	The Sequoia Boulevard Alternative would avoid or substantially reduce the Project's potential significant impacts on aesthetics and recreation, and the impact associated with construction noise.
Would the alternative be remote or speculative?	Fail	The Sequoia Boulevard Alternative is remote and speculative because it would require BLM authorization, which the BLM is not entertaining as part of the NEPA review for the Project (BLM 2025).

NOTES: BLM = U.S. Bureau of Land Management; SCE = Southern California Edison

4.5.6.2 Alternative Route 2 of the Pappas Line Realignment Options

Alternative Route 2 of the Pappas Line Realignment Options is an alignment suggested by BLM that would exit the Cal City Substation toward the south, turn east along Mendiburu Road, then east-northeast onto Twenty Mule Team Parkway before joining the proposed Kramer–Cal City 115 kV Subtransmission Line at Twenty Mule Team Road Parkway and Rudnick Boulevard (see Figure 4-1, *Alternatives Screened from Detailed Review*). From that location, the alternative alignment would follow the proposed alignment along Twenty Mule Team Parkway northeast to U.S. Route 395, then south-southeast along the west side of U.S 395 to the Kramer Substation. Under this alternative, the Kramer–Cal City circuit would pass along the northern edge of the urban core of California City along Mendiburu Road.

Rationale for Rejection

Alternative Route 2 of the Pappas Line Realignment Options would satisfy all of the Project objectives by adding the projected capacity to the California City portion of the ENA, reducing reliance on the Edwards Substation, adding a second 115 kV subtransmission source line to the Edwards Substation, and improving system reliability by providing diverse routes of power to the region. The Alternative Route 2 alignment appears to be both economically and technically feasible but follows Mendiburu Road along the northern edge of the urban core of California City. As outlined in SCE's Routing Report (see Appendix M), the Project was designed to avoid the urban areas of California City, and SCE has stated that siting a segment of the Kramer–Cal City 115 kV Subtransmission Line along Mendiburu Road within the urban core of California City presents technical concerns and may introduce new potential environmental effects, such as interaction with other utilities, increased visual and noise impacts, increased pole-car interface, and increased disruptions to traffic and public services during construction and maintenance activities (SCE 2025b).

Although Alternative Route 2 would avoid the significant and unavoidable aesthetics impact associated with the Kramer–Cal City 115 kV Subtransmission Line along Rudnick Boulevard, it would introduce a new significant aesthetics impact along Mendiburu Road and Nelson Road that would be more severe than the Project impact along Rudnick Boulevard given the substantially higher concentration of viewers along the northern edge of the urban core of California City. Additionally, this alternative would substantially increase the severity of the significant unavoidable construction impact identified for the Project at the single residence near Borax Bill Park by exposing dozens of additional Cal City residences to substantial increases in ambient noise levels.

The CPUC rejected Alternative Route 2 of the Pappas Line Realignment Options from more detailed consideration because the potential alternative failed screening based on two of the four screening criteria. **Table 4-7**, *Screening: Alternative Route 2 of the Pappas Line Realignment Options*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-7
SCREENING: ALTERNATIVE ROUTE 2 OF THE PAPPAS LINE REALIGNMENT OPTIONS

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	Alternative Route 2 of the Pappas Line Realignment Options could meet all of the Project objectives identified in Section 4.3.1.
Would the alternative be potentially feasible?	Fail	Alternative Route 2 of the Pappas Line Realignment Options could be accomplished successfully within a reasonable period of time, taking into account economic, legal, social, and technological factors. However, Alternative Route 2 has been determined to be infeasible when considering environmental factors because it would introduce a more severe significant aesthetics impact than the Project that would affect a substantially higher concentration of viewers. Additionally, it would substantially increase the severity of the Project's significant unavoidable construction impact by affecting not one residence but dozens of them to substantial increases in ambient noise levels.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Fail	Alternative Route 2 of the Pappas Line Realignment Options would replace one significant unavoidable aesthetics impact with a significant unavoidable aesthetics impact in a different location—one that would affect more people. Therefore, it has been determined that Alternative Route 2 would not avoid or substantially reduce this significant impact of the Project. Also, as noted above in the context of environmental factors affecting feasibility, this alternative would cause substantially more severe significant and unavoidable noise impacts than the Project.
Would the alternative be remote or speculative?	Pass	Implementation of Alternative Route 2 of the Pappas Line Realignment Options would not be remote or speculative.

4.5.6.3 Cal City–Edwards and Edwards–Holgate Alternative

Description

The Cal City–Edwards and Edwards–Holgate Alternative would involve the construction of two distinct subtransmission lines rather than the proposed single-circuit tap (i.e., the Cal City–Edwards-Holgate 115 kV Subtransmission Line) to provide the second source line to the Edwards Substation. Although the Cal City–Edwards subtransmission line under this alternative would share the same alignment as the proposed Cal City–Edwards-Holgate alignment minus the tap to Holgate Switchyard, it would require an additional line between the Edwards Substation and the Holgate Switchyard that would follow part of the alignment as the existing Edwards–Holgate-Southbase Subtransmission Line, partially within the Edwards Air Force Base Utility Corridor 5, which spans the northern perimeter of the Edwards Air Force Base (see Figure 4-1, *Alternatives Screened from Detailed Review*, for the location of Utility Corridor 5). All remaining Project components, including the Kramer–Cal City 115 kV Subtransmission Line, would be included as part of this alternative.

Rational for Rejection

Project Objective 3 would not be satisfied by the Cal City–Edwards and Edwards–Holgate Alternative because the Edwards Substation would be relied upon to provide power to the ENA. Nonetheless, this alternative would satisfy three of the four (and so "most") Project objectives by adding the projected capacity to the California City portion of the ENA, proving two diversely routed 115 kV subtransmission source lines to the Cal City Substation, and improving system reliability by providing a diversely routed 115 kV source line to the Edwards Substation.

However, the Edwards–Holgate alignment would require access to the Edwards Air Force Base Utility Corridor 5, which the U.S. Department of Defense has denied (SCE 2025d) (see Figure 4-1, *Alternatives Screened from Detailed Review*, for the location of Utility Corridor 5). Because the U.S. Department of Defense has rejected use of its utility corridor for the proposed purpose, this alternative is infeasible as well as remote and speculative because SCE cannot reasonably acquire, control, or otherwise obtain access to the part of the Edwards–Holgate alignment that would be within Utility Corridor 5. Additionally, none of the significant and unavoidable impacts of the Project would be avoided or substantially reduced under this alternative.

The CPUC rejected a Cal City–Edwards and Edwards–Holgate Alternative alignment from more detailed consideration because the potential alternative failed screening based on three of the four screening criteria. **Table 4-8**, *Screening: Cal City–Edwards and Edwards–Holgate Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-8
SCREENING: CAL CITY–EDWARDS AND EDWARDS–HOLGATE ALTERNATIVE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	The Cal City–Edwards and Edwards–Holgate Alternative would have the potential to meet three of the four Project objectives identified in Section 4.3.1. It would not improve system operational flexibility (Objective 3) because one of the source lines to the Cal City Substation would be connected directly to the Edwards Substation.
Would the alternative be potentially feasible?	Fail	The Cal City–Edwards and Edwards–Holgate Alternative does not have the potential to be accomplished successfully because the U.S. Department of Defense has denied SCE the use of Utility Corridor 5, which would be required for this alternative to be potentially feasible.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Fail	The Cal City–Edwards and Edwards–Holgate Alternative would not avoid or substantially reduce the Project's potential significant impacts on aesthetics, noise, or recreation because those impacts are exclusively associated with the proposed Kramer–Cal City 115 kV Subtransmission Line, which is not addressed by this alternative. Additionally, it would not avoid or substantially reduce the Project's potential significant impact on tribal cultural resources because it would result in similar or increased length of subtransmission line and associated ground disturbance.
Would the alternative be remote or speculative?	Fail	The Cal City–Edwards and Edwards–Holgate Alternative is remote and speculative because the U.S. Department of Defense has denied SCE the use of its Utility Corridor 5, which would be required for this alternative.

NOTES: kV = kilovolt; SCE = Southern California Edison

4.5.6.4 Randsburg Alternative

Description

The Randsburg Alternative would include construction of a new 26-mile 115 kV subtransmission line from the Cal City Substation to the Randsburg Substation and a new 11-mile 115 kV subtransmission line from the Cal City Substation to the Edwards Substation. The alternative would include the expansion of the existing Cal City Substation to include a 115/12 kV switchrack while retaining the existing 33/12 kV facilities and 14 new 12 kV distribution getaways. At the Edwards Substation, one new 115 kV line position would be added, and at the Randsburg Substation, the 115 kV switchrack would be rebuilt and a new Mechanical Electrical Equipment

Room would be constructed. The Randsburg Alternative would also include the transfer of the existing Heavy 33 kV or Pappas 33 kV distribution extension lines on the new Cal City–Randsburg poles between mileposts 26 and 35 and upgrade the existing Balchen 33 kV or Castle Butte 33 kV distribution lines to 115 kV subtransmission lines between milepost 14 and 20. The Kramer–Randsburg alignment would be the same as the proposed Kramer–Cal City 115 kV Subtransmission Line alignment from the Cal City Substation to Rutgers Road.

Rationale for Rejection

This alternative would satisfy three of the four (so "most") Project objectives by adding the projected load-serving capacity in the Cal City portion of the ENA, adding diverse routes of power to supply the Cal City portion of the ENA, and adding a second diversely routed source line to the Edwards Substation. This alternative would not improve system operational flexibility as the second source line to the Cal City Substation would be connected directly to the Edwards Substation (Objective 3).

This alternative would require access to several miles of BLM-controlled land. SCE cannot reasonably acquire, control, or otherwise obtain access to parts of an alignment without BLM authorization, which BLM is not entertaining as part of the NEPA review for the Project. Additionally, the Randsburg Alternative would require the complete rebuild of the Randsburg Substation and would require substantial grading because of hilly terrain in the area (see Appendix M). The Cal City–Randsburg Alternative would result in the same or similar significant and unavoidable impacts on aesthetics, tribal cultural resources, recreation, and noise as the Project.

The CPUC rejected the Randsburg Alternative from more detailed consideration because the potential alternative failed screening based on three of the four screening criteria. **Table 4-9**, *Screening: Randsburg Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-9
SCREENING: RANDSBURG ALTERNATIVE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	The Randsburg Alternative would have the potential to meet three of the four Project objectives identified in Section 4.3.1. It would not improve system operational flexibility (Objective 3) because one of the source lines to the Cal City Substation would be connected directly to the Edwards Substation.
Would the alternative be potentially feasible?	Fail	The Randsburg Alternative does not have the potential to be accomplished successfully because SCE cannot reasonably acquire, control, or otherwise obtain access to parts of the alignment without BLM authorization, which BLM is not entertaining as part of the NEPA review for the Project.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Fail	The Randsburg Alternative would not avoid or substantially reduce the Project's potential significant impacts on aesthetics, recreation, tribal cultural resources, or noise because its Kramer–Randsburg alignment would be same as the proposed Kramer–Cal City alignment from the Cal City Substation to Rutgers Road, which is where those impacts for the Project would occur.
Would the alternative be remote or speculative?	Fail	The Randsburg Alternative is remote and speculative because it would require a BLM authorization that the BLM is not entertaining as part of the NEPA review for the Project.

NOTES: BLM = U.S. Bureau of Land Management; SCE = Southern California Edison

4.5.6.5 Windhub Alternative

Description

The Windhub Alternative would include installation of two new 25-mile 66 kV subtransmission lines from the Cal City Substation to the Windhub Substation. It would also require expansion of the existing Cal City Substation to include 66/33 kV and 66/12 kV switchracks and two new 33 kV and 14 new 12 kV and distribution getaways at the Cal City Substation, as well as the removal of its existing 33/12 kV facilities and installation of one new 66 kV subtransmission line position at the Windhub Substation.

Rationale for Rejection

The Windhub Alternative would have the potential to meet two of the four (and so not "most") Project objectives identified in Section 4.3.1. It would not improve system operational flexibility (Objective 3) because it would not reduce SCE's reliance on the Edwards Substation, and it would not improve system reliability within the ENA (Objective 4) because it would not include a diversely routed second 115 kV source line to the Edwards Substation

The CPUC rejected the Windhub Alternative from more detailed consideration because the potential alternative failed screening based on one of the four screening criteria. **Table 4-10**, *Screening: Windhub Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-10
SCREENING: WINDHUB ALTERNATIVE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Fail	The Windhub Alternative would have the potential to meet only two of the four Project objectives identified in Section 4.3.1. It would not improve system operational flexibility (Objective 3), and it would not improve system reliability within the ENA (Objective 4).
Would the alternative be potentially feasible?	Pass	Because it is unknown whether the Windhub Alternative could be capable of being accomplished successfully within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors, this analysis assumes for purposes of screening that it would be.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Pass	Because it is unknown whether the Windhub Alternative could avoid or substantially reduce a potential significant impact of the Project, this analysis assumes for purposes of screening that it could.
Would the alternative be remote or speculative?	Pass	Because the likelihood of the Windhub Alternative is unknown, this analysis assumes for purposes of screening that it is neither remote nor speculative.

NOTE: ENA = Electrical Needs Area

4.5.6.6 Goldtown Alternative

Description

The Goldtown Alternative would include one new 66 kV subtransmission line to the Goldtown Substation or rebuild one or more existing 66 kV subtransmission lines that connect to the Goldtown Substation as well as installation of one new 33/12 kV distribution substation in the ENA that would include 14 new 12 kV distribution getaways at the new 33/12 kV substation in the ENA. It would also include upgrades to the Goldtown Substation, including expansion of the 66 kV switchrack and construction of a new 33 kV switchrack; one or more new 66 kV line positions at existing substations in the area to accommodate new and/or rebuilt 66 kV lines; and six new 25-mile 33 kV lines from the Goldtown Substation to the new 33/12 kV substation in the ENA.

Rationale for Rejection

The Goldtown Alternative would have the potential to meet two of the four (and so not "most") Project objectives identified in Section 4.3.1. It would not improve system operational flexibility (Objective 3) because it would not reduce SCE's reliance on the Edwards Substation, and it would not improve system reliability within the ENA (Objective 4) because it would not include a diversely routed second 115 kV source line to the Edwards Substation.

The CPUC rejected the Goldtown Alternative from more detailed consideration because the potential alternative failed screening based on one of the four screening criteria. **Table 4-11**, *Screening: Goldtown Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-11
SCREENING: GOLDTOWN ALTERNATIVE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Fail	The Goldtown Alternative would only have the potential to meet two of the four (and so not "most") Project objectives identified in Section 4.3.1. It would not improve system operational flexibility (Objective 3), and it would not improve system reliability within the ENA (Objective 4).
Would the alternative be potentially feasible?	Pass	Because it is unknown whether the Goldtown Alternative would be potentially feasible, this analysis assumes for purposes of screening that it would be.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Pass	Because it is unknown whether the Goldtown Alternative could avoid or substantially reduce the potential significant impacts of the Project on aesthetics, noise, recreation, or tribal cultural resources, this analysis assumes for purposes of screening that it could.
Would the alternative be remote or speculative?	Pass	Because the likelihood of the Goldtown Alternative is unknown, this analysis assumes for purposes of screening that it is neither remote nor speculative.

NOTE: ENA = Electrical Needs Area

4.5.6.7 Kramer–Edwards Alternative

Description

The Kramer–Edwards Alternative would include installation of one new 21-mile 115 kV subtransmission line from the Kramer Substation to the Edwards Substation and six new 11-mile 33 kV distribution lines from the Edwards Substation to the Cal City Substation. This alternative

would also include installation of one new 33/12 kV switchrack and 14 12 kV distribution getaways at the Cal City Substation. Additionally, one new 115 kV line position and expansion of the 115 kV and 33 kV switchracks would be required at the Edwards Substation and one new 115 kV line position would be required at the Kramer Substation. The Kramer–Edwards 115 kV Subtransmission Line would be installed within the Edwards Air Force Base Utility Corridor 5, which spans the northern perimeter of the Edwards Air Force Base (see Figure 4-1, *Alternatives Screened from Detailed Review*, for the location of Utility Corridor 5).

Rationale for Rejection

The Kramer–Edwards Alternative would have the potential to meet only two of the four (and so not "most") Project objectives identified in Section 4.3.1. It would not meet the forecasted demand of 167 MVA by 2026; therefore, it would not meet the current and long-term forecast electrical demand for the California City portion of the ENA (Objective 1). This alternative would also fail to improve system operational flexibility (Objective 3) because it would increase the reliance on the Edwards Substation, as the six new 33 kV lines that would serve as the source to the Cal City Substation would all traverse the Edwards Air Force Base (SCE 2023b).

The Kramer–Edwards Alternative alignment would require access to the Edwards Air Force Base Utility Corridor 5, which the U.S. Department of Defense has denied (SCE 2025d). Because the U.S. Department of Defense has rejected use of its utility corridor for the Project, this alternative is not feasible and is remote and speculative because SCE cannot reasonably acquire, control, or otherwise obtain access to the part of the Kramer–Edwards Alternative alignment that would be within Utility Corridor 5. It is not clear if the significant and unavoidable impacts that would be associated with the Project would be avoided or substantially reduced under this alternative.

The CPUC rejected the Kramer–Edwards Alternative alignment from more detailed consideration because the potential alternative failed screening based on three of the four screening criteria. **Table 4-12**, *Screening: Kramer–Edwards Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-12
SCREENING: KRAMER–EDWARDS ALTERNATIVE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Fail	The Kramer–Edwards Alternative would have the potential to meet only two of the four Project objectives identified in Section 4.3.1. It would not meet the current and long-term forecast electrical demand for the California City portion of the ENA (Objective 1), and it would increase the reliance on the Edwards Substation (Objective 3).
Would the alternative be potentially feasible?	Fail	The Kramer–Edwards Alternative does not have the potential to be accomplished successfully because the U.S. Department of Defense has denied SCE the use of Utility Corridor 5, which would be required for this alternative to be potentially feasible.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Pass	Because it is unknown whether the Kramer–Edwards Alternative would avoid or substantially reduce the Project's potential significant impacts on aesthetics, noise, recreation, or tribal cultural resources, this analysis assumes for purposes of screening that it could.
Would the alternative be remote or speculative?	Fail	The Kramer–Edwards Alternative is remote and speculative because the U.S. Department of Defense has denied SCE the use of its Utility Corridor 5, which would be required for this alternative.

NOTES: ENA = Electrical Needs Area; SCE = Southern California Edison

4.5.6.8 Kramer–Edwards-Holgate Alternative

Description

The Kramer–Edwards-Holgate Alternative would include installation of a new 33/12 kV substation with 14 12 kV distribution getaways in the ENA, and six new 25-mile 33 kV lines from the Holgate Switchyard to the new substation. This alternative would also require a new 26-mile 115 kV Kramer–Edwards-Holgate Subtransmission Line, and a number of upgrades to three substations, including a new 115 kV line position at the Edwards Substation, a new 115/33 kV switchrack at the Holgate Switchyard, and a new 115 kV line position at the Kramer Substation. The Kramer–Edwards-Holgate 115 kV subtransmission line would be installed within Edwards Air Force Base Utility Corridor 5, which spans the northern perimeter of the Edwards Air Force Base (see Figure 4-1, Alternatives Screened from Detailed Review, for the location of Utility Corridor 5).

Rationale for Rejection

The Kramer–Edwards-Holgate Alternative would have the potential to meet all of the Project objectives identified in Section 4.3.1. However, it would require access to the Edwards Air Force Base Utility Corridor 5, which the U.S. Department of Defense has denied (SCE 2025d). Because the U.S. Department of Defense has rejected use of its utility corridor for the proposed purposes, this alternative is infeasible and also remote and speculative because SCE cannot reasonably acquire, control, or otherwise obtain access to the part of the Kramer–Edwards-Holgate Alternative alignment that would be within Utility Corridor 5. It is not clear if the significant and unavoidable impacts that would be associated with the Project would be avoided or substantially reduced under this alternative.

The CPUC rejected the Kramer–Edwards-Holgate Alternative from more detailed consideration because the potential alternative failed screening based on two of the four screening criteria. **Table 4-13**, *Screening: Kramer–Edwards-Holgate Alternative*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-13
SCREENING: KRAMER–EDWARDS-HOLGATE ALTERNATIVE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	The Kramer–Edwards-Holgate Alternative would have the potential to meet all of the Project objectives identified in Section 4.3.1.
Would the alternative be potentially feasible?	Fail	The Kramer–Edwards-Holgate Alternative does not have the potential to be accomplished successfully because the U.S. Department of Defense has denied SCE the use of Utility Corridor 5, which would be required for this alternative to be potentially feasible.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Pass	Because it is unknown whether the Kramer–Edwards-Holgate Alternative would avoid or substantially reduce the Project's potential significant impacts, this analysis assumes for purposes of screening that it could.
Would the alternative be remote or speculative?	Fail	The Kramer–Edwards-Holgate Alternative is remote and speculative because the U.S. Department of Defense has denied SCE the use of Utility Corridor 5, which would be required for this alternative.

NOTE: SCE = Southern California Edison

4.5.6.9 State Route 58 Alternative Route

Description

The State Route 58 Alternative Route would be a 115 kV subtransmission line between the Kramer Substation and the Cal City Substation that would parallel the south side of State Route 58. The route options for this alternative would require access to the Edwards Air Force Base Utility Corridor 5 for its east-west alignment (see Figure 4-1, *Alternatives Screened from Detailed Review*, for the location of Utility Corridor 5) and would parallel the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line along its north-south alignment from the Edwards Air Force Base to the Cal City Substation. This alternative would also include installation of the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line and associated infrastructure.

Rationale for Rejection

The State Route 58 Alternative Route would have the potential to meet three of the four (and so "most") Project objectives identified in Section 4.3.1. It would not improve system reliability within the ENA by providing diverse routes of power supply to the region (Objective 2) because it would parallel the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line for approximately 15 miles. However, it would require access to the Edwards Air Force Base Utility Corridor 5, which the U.S. Department of Defense has denied (SCE 2025d). Because the U.S. Department of Defense has rejected use of its utility corridor for the proposed purpose, this alternative is infeasible and also remote and speculative because SCE cannot reasonably acquire, control, or otherwise obtain access to the part of the State Route 58 Alternative Route that would be within Utility Corridor 5. It is not clear if the significant and unavoidable impacts that would be associated with the Project would be avoided or substantially reduced under this alternative.

The CPUC rejected the State Route 58 Alternative Route from more detailed consideration because the potential alternative failed screening based on two of the four screening criteria. **Table 4-14**, *Screening: State Route 58 Alternative Route*, provides a brief explanation of the reasons underlying the CPUC's determination.

TABLE 4-14
SCREENING: STATE ROUTE 58 ALTERNATIVE ROUTE

Screening Criteria	Pass/Fail	Rationale
Would the alternative meet most of the basic project objectives?	Pass	The State Route 58 Alternative Route would have the potential to meet most of the Project objectives identified in Section 4.3.1; however, it would not improve system reliability within the ENA by providing diverse routes of power supply to the region.
Would the alternative be potentially feasible?	Fail	The State Route 58 Alternative Route does not have the potential to be accomplished successfully because the U.S. Department of Defense has denied SCE the use of Utility Corridor 5, which would be required for this alternative to be potentially feasible.
Could the alternative avoid or substantially reduce a potential significant impact of the Project?	Pass	Because it is unknown whether the State Route 58 Alternative Route would avoid or substantially reduce the Project's potential significant impacts, this analysis assumes for purposes of screening that it could.
Would the alternative be remote or speculative?	Fail	The State Route 58 Alternative Route is remote and speculative because the U.S. Department of Defense has denied SCE the use of Utility Corridor 5, which would be required for this alternative.

NOTES: ENA = Electrical Needs Area; SCE = Southern California Edison

4.6 Alternatives Evaluated in Detail

4.6.1 No Project Alternative

4.6.1.1 Description

Under the No Project Alternative, the proposed improvements to the Cal City Substation, the two new subtransmission lines, and the other associated proposed components would not be constructed and operated. The distribution capacity that serves the ENA would remain unchanged and the Cal City Substation and the California City portion of the ENA would continue to be served by two 33 kV distribution source lines.

The No Project Alternative would fail to meet each of the Project objectives, and as a result, the California City portion of the ENA would continue to experience a shortage of electricity, and the electrical distribution system would become vulnerable to upset. The distribution system would experience increased system-wide power flow and reliability problems due to overloading the existing source lines as new demand is added to the system. This could result in thermal overload[5] and blackouts. Improved system reliability within the ENA would not be achieved because diverse routes of power supply and a second diversely routed subtransmission source line to the Edwards Substation would not be added to the ENA. Additionally, improved system operational flexibility would not be achieved because the California City portion of the ENA would continue to rely on the 33 kV distribution source line from the Edwards Substation, which is located on a military base with restricted access for SCE.

If the No Project Alternative is implemented, SCE would continue to implement operating mitigation procedures to compensate for the existing and expected shortfall in the supply of electric power for the California City portion of the ENA. Operating procedures to relieve the shortfall may include transferring load between area substations via the existing 33 kV distribution circuits that source the Cal City Substation with electricity, load dropping on one or more of the distribution circuits, or disconnecting entire circuits from the Cal City Substation system. The latter two operating measures could cause extended outages within the California City portion of the ENA until the shortfall conditions could be eliminated.

SCE would also likely be required to implement demand-side management (DSM) programs to reduce customer energy consumption and overall electricity use, including shifting energy use to off-peak periods.[6]

[5] Potential consequences of thermal overload can include significant damage to electrical equipment (such as motors, transformers, and wires) primarily due to excessive heat generation caused by high current flow, potentially resulting in component failure and, in severe cases, fires if not properly protected by safety devices.

[6] The CPUC supervises various DSM programs administered by the regulated utilities, and many municipal electric utilities have their own DSM programs. The combination of these programs constitutes the most ambitious overall approach to reducing electricity demand administered by any state in the nation. However, reducing demand is an essential part of SCE's management of the electric grid with or without the Project.

4.6.1.2 Environmental Impacts

The No Project Alternative would result in no impacts because no transmission project–related development would occur that could cause impacts.

4.6.2 Alternative 1: Cal City/Ivanpah–Control Collocation

4.6.2.1 Description

SCE submitted its Amended Permit to Construct application and Proponent's Environmental Assessment for the Ivanpah–Control Project on April 13, 2020 (CPUC 2024). The Ivanpah–Control Project includes the construction of a new 115 kV subtransmission line, referred to as the Kramer–Inyokern #1, in which conductors for only one circuit would be installed on double-circuit structures, leaving a vacant position available for future use. After this line would be energized, the existing double-circuit Kramer–Inyokern #1 line and structures would be removed. The Cal City Project line proposed to be constructed in this segment would be a single-circuit 115 kV subtransmission line on an entirely separate set of poles west of both the existing and the future Ivanpah–Control lines.

The Cal City/Ivanpah–Control Collocation alternative would replace the approximately 18.5-mile segment of the proposed Kramer–Cal City 115 kV Subtransmission Line from the Kramer Substation to Cuddeback Road, where the proposed Kramer–Cal City 115 kV Subtransmission Line alignment turns southwest toward the Cal City Substation (see **Figure 4-2**, *Alternatives Evaluated in Detail*). Due to the existing electrical and telecommunication facilities located on the wood poles that support the Isner 33 kV distribution line adjacent to U.S. 395, the first 3 miles of the collocation alternative north of the Kramer Substation would be within the proposed Cal City Project alignment in order to increase construction efficiency and to reduce the potential for necessary 115 kV circuit outages to the existing Kramer–Inyokern #1 115 kV circuit when that segment of line would be in construction (SCE 2025a). North of that area, from approximately 3.5 miles north of the Kramer Substation (e.g., at the location where the Kramer–BLM West 220 kV towers join the alignment from the east) to approximately 15 miles north-northwest of that location near Cuddeback Road, the collocation alternative would be installed with the Ivanpah–Control Project alignment, approximately 50 feet east of the proposed Kramer–Cal City 115 kV Subtransmission Line alignment along the west side of U.S. 395 (SCE 2025a).

The proposed Kramer–Cal City 115 kV Subtransmission Line conductors would be installed in the vacant position on the west side of SCE's double-circuit structures proposed for SCE's Ivanpah–Control Project rather than on newly constructed Cal City Project structures. The new transmission line poles, access roads, and associated work areas for the 18.5-mile segment of the proposed Kramer–Cal City 115 kV Subtransmission Line along U.S. 395 would be eliminated under this alternative.

Although SCE has expressed concerns about the timing for reviews, Project approvals, coordination, and construction activities that would be associated with this alternative, SCE believes if (a) both CPUC and BLM are aligned and pursuing the common objective reflecting this work in the area; and (b) SCE receives approvals from both CPUC and BLM for both the Cal City and

Ivanpah–Control projects in a fairly synchronized time frame, then both projects can coordinate and modify the engineering design, address procurement needs, and adjust construction scheduling efforts to allow for collocation of the Ivanpah–Control structures (SCE 2024).

The overall construction sequencing of the Ivanpah–Control Project has not been developed; however, because of the stand-alone utility of each Ivanpah–Control Project segment, it is feasible that the scheduling for construction of the Ivanpah–Control 15-mile-long segment that overlaps with the Cal City Project's Kramer–Cal City 115 kV Subtransmission Line alignment could be aligned with the timing needed to serve the Cal City portion of the ENA load (SCE 2024). The Cal City–Kramer conductors may be installed at the same time as the Ivanpah–Control conductors, or they may be installed at a different time (SCE 2025a).

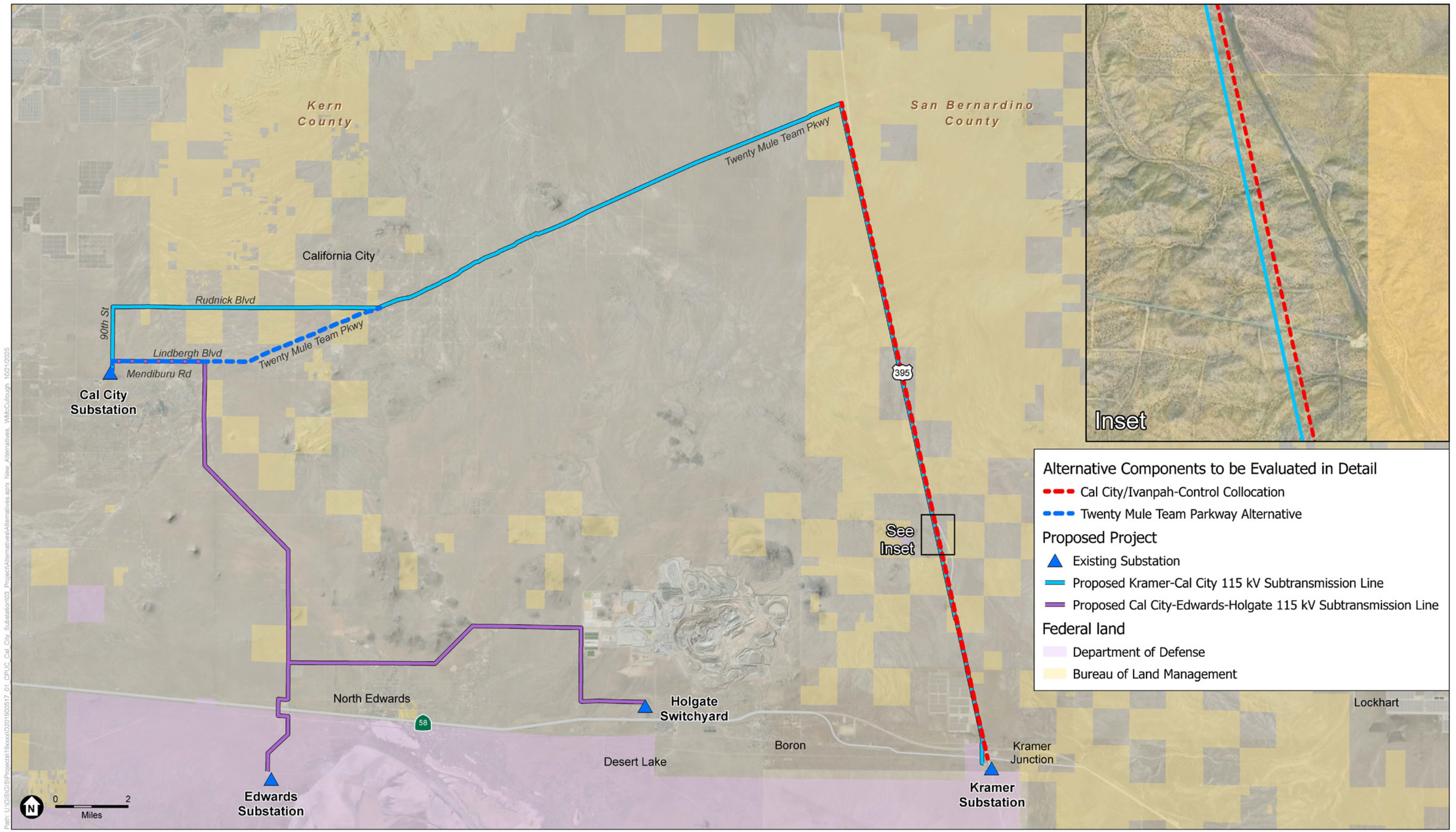
The CPUC has determined that the Cal City/Ivanpah–Control Collocation alternative can proceed for detailed consideration in this Draft EIR because the alternative passed the screening based on all four screening criteria.

4.6.2.2 Environmental Impacts

The Cal City/Ivanpah–Control Collocation alternative would reduce the severity of significant impacts in comparison to the Project due to the use of the Ivanpah–Control structures to support the proposed Kramer–Cal City Project 115 kV Subtransmission Line conductors instead of the light-weight steel poles proposed for the Project. The reduced impacts would be a result of installation of fewer poles, reduced miles of new access roads, and reduced permanent and temporary disturbance areas, such as cable/conductor pull-and-tension/stringing sites as compared to the requirements of the proposed Kramer–Cal City 115 kV Subtransmission Line. For example, the Cal City/Ivanpah–Control Collocation alternative would eliminate the need for approximately 285 light-weight steel poles and 15 miles of new access road in the vicinity of U.S. 395. Compared to the Project, this would result in the elimination of approximately 140 acres of temporary construction work disturbance area, including elimination of about 48 acres of permanent distance area.

Like the Project, construction and operation of the Cal City/Ivanpah–Control Collocation alternative would result in significant impacts on biological resources that would be reduced to less-than-significant levels with mitigation measures, including to special-status plant (e.g., western Joshua trees) and wildlife (e.g., Crotch's bumble bee, desert tortoise, Mohave ground squirrel) species (see discussion under Section 3.3, *Biological Resources*); however, given the substantial reduction in disturbance area under this alternative, the overall impact on special-status species would be reduced relative to the Project. Additionally, fewer subtransmission line poles under this alternative would reduce the potential for new raven nesting sites on new subtransmission line structures, which would minimize the effects of raven predation on desert tortoise during the operation and maintenance phase compared to the Project.

Similarly, given the high potential for unrecorded subsurface archaeological materials to be uncovered during ground-disturbing activities, Alternative 1 could cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American Tribe like the Project, which would be a significant and unavoidable impact even with incorporation of mitigation (see discussion under Section 3.18, *Tribal Cultural Resources*).



SOURCE: ESA, 2022

Cal City Substation 115 kV Upgrade Project

Figure 4-2
Alternatives Evaluated in Detail

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However, given the decreased ground disturbance that would occur in undisturbed areas under this alternative, there would be a reduced potential for unrecorded subsurface archaeological materials that may also be tribal cultural resources to be uncovered during ground-disturbing activities compared to the Project.

Like the impact identified for the Project, construction of Alternative 1 would result in significant impacts that could be reduced to less-than-significant levels relative to soil erosion or the loss of topsoil (see discussions under Section 3.7, *Geology, Soils, and Paleontology*); could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or groundwater quality and would alter drainage patterns, result in erosion and runoff in a manner that could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; and could impede or redirect flood flows in a flood hazard zone, which would present a risk of release of pollutants due to inundation during flooding. However, these impacts would be somewhat reduced under the Cal City/Ivanpah–Control Collocation alternative given its reduced ground disturbance requirements.

4.6.3 Alternative 2: Twenty Mule Team Parkway Alternative

4.6.3.1 Description

The Twenty Mule Team Parkway Alternative would replace the segment of the proposed Kramer–Cal City 115 kV Subtransmission Line along 90th Street starting from approximately 0.4 mile north of the Cal City Substation to Rudnick Boulevard, and Rudnick Boulevard from 90th Street east to Twenty Mule Team Parkway. The alignment for this alternative would parallel the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment approximately 50 feet to the north, along Lindbergh Boulevard. Where the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment turns south, the Twenty Mule Team Parkway Alternative alignment would continue east along Lindbergh Boulevard to Twenty Mule Team Parkway, where it continues east-northeast along Twenty Mule Team Parkway to Rudnick Boulevard where it would rejoin with the proposed Kramer–Cal City 115 kV Subtransmission Line alignment (see Figure 4-2, *Alternatives Evaluated in Detail*).

The existing distribution Line along Twenty Mule Team Parkway along this alternative alignment southwest of Rudnick Boulevard would be transferred to the subtransmission line light-weight steel poles and the existing distribution line wood poles would be removed, which is similar as proposed for the Project's Kramer–Cal City 115 kV Subtransmission Line along Twenty Mule Team Parkway northeast of Rudnick Boulevard.

The Twenty Mule Team Parkway Alternative would result in parallel circuits along Lindbergh Boulevard, which would reduce route diversity and reliability; however, the section of parallel circuits would be relatively short in comparison to the overall length of the Project subtransmission line alignments, and the reduction in diversity and associated reduction in reliability would be addressed by placing the circuits on separate structures that would be separated in distance by at least 50 feet. This would result in a more reliable situation in the event of a car strike because the second source line would be isolated from the event (SCE 2025c). Therefore, the CPUC has determined that the Twenty Mule Team Parkway Alternative can proceed for detailed consideration because the alternative passes all four screening criteria.

4.6.3.2 Environmental Impacts

The Twenty Mule Team Parkway Alternative would reduce the severity of significant and unavoidable and significant impacts in comparison to the Project due to the alternative alignment for the Kramer–Cal City 115 kV Subtransmission Line that would avoid Rudnick Boulevard, which is an area with high visual quality, and it would be approximately 1.2 miles shorter than the proposed alignment, which would result in reduced temporary and permanent ground disturbance.

This alternative would avoid introduction of an industrial element of visual quality within the expansive natural surroundings along Rudnick Boulevard that would create a strong visual contrast and high level of visual change under the Project. The significant unavoidable aesthetics impact of the Project at Key Observation Point 2 would be avoided under the Twenty Mule Team Parkway Alternative (see Section 3.1, *Aesthetics*, Impact 3.1-2c, and Figures 3.1-14a and 3.1-14b). The significant unavoidable aesthetics impact of the Project at Key Observation Point 3 would continue to be significant and unavoidable under this alternative because the alternative alignment would parallel the proposed Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment approximately 50 feet to the north and the monopoles would continue to be visible and maintain a strong visual contrast relative to existing conditions. The alternative alignment east of where the Cal City–Edwards-Holgate 115 kV Subtransmission Line alignment turns south would result in a less-than-significant aesthetics impact due to the sparsity of viewpoints and viewers in that area, and due to the presence of the existing distribution line along Twenty Mule Team Parkway. The alternative would not create a strong visual contrast compared to the existing conditions in that area.

As discussed previously, the Twenty Mule Team Parkway Alternative would avoid the Project's presence of poles and subtransmission line along Rudnick Boulevard that affects the visual quality and alters the scenic character of recreational facilities, such as the off-highway vehicle-designated area west of Borax Bill Park and the California City off-highway vehicle trail. This alternative would eliminate the significant long-term recreation impact of the proposed subtransmission line along Rudnick Boulevard by placing the subtransmission line to the south along Lindbergh Boulevard in the same alignment as proposed for the Cal City–Edwards-Holgate 115 kV Subtransmission Line.

Like the Project, construction and operation of the Twenty Mule Team Parkway Alternative would result in potential significant impacts on biological resources that would be reduced to less-than-significant levels with mitigation measures, including to special-status plant (e.g., western Joshua trees) and wildlife (e.g., Crotch's bumble bee, desert tortoise, Mohave ground squirrel) species (see discussion under Section 3.3, *Biological Resources*); however, given the reduction in length of the subtransmission line and associated disturbance area under this alternative, as well as its avoidance of the Fremont-Kramer Area of Critical Environmental Concern, the overall impact on special-status species would be reduced relative to the Project. Additionally, fewer subtransmission line poles under this alternative would reduce the potential for new raven nesting and perching sites on new subtransmission line structures, which would minimize the effects of raven predation on desert tortoise during the operation and maintenance phase compared to the Project.

Similarly, given the high potential for unrecorded subsurface archaeological materials to be uncovered during ground-disturbing activities, Alternative 2 could cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American Tribe like the Project, which would be a significant and unavoidable impact even with incorporation of mitigation (see discussion under Section 3.18, *Tribal Cultural Resources*). However, given the decreased length of the subtransmission line and associated ground disturbance that would occur in undisturbed areas under this alternative, there would be a reduced potential for unrecorded subsurface archaeological materials that may also be tribal cultural resources to be uncovered during ground-disturbing activities compared to the Project.

Like the impact identified for the Project, construction of Alternative 2 would result in significant impacts that could be reduced to less-than-significant levels relative to soil erosion or the loss of topsoil (see discussions under Section 3.7, *Geology, Soils, and Paleontology*); could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or groundwater quality and would alter drainage patterns, result in erosion and runoff in a manner that could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; and could impede or redirect flood flows a flood hazard zone, which would present a risk of release of pollutants due to inundation during flooding (see discussions under Section 3.10, *Hydrology and Water Quality*). However, these impacts would be somewhat reduced under the Twenty Mule Team Parkway Alternative given its reduced length of subtransmission line.

4.6.4 Alternative 3: Cal City/Ivanpah–Control Collocation with Twenty Mule Team Parkway Alternative

4.6.4.1 Description

Alternative 3 combines the Cal City/Ivanpah–Control Collocation with the Twenty Mule Team Parkway Alternative. Refer to Sections 4.6.2.1 and 4.6.3.1 for descriptions of those individual alternative components that would be combined under Alternative 3.

4.6.4.2 Environmental Impacts

Refer to Sections 4.6.2.2 and 4.6.3.2 for discussions of the environmental impacts relative to the individual alternative components that would be combined under Alternative 3.

4.7 Comparison Methodology

The following methodology was used to compare alternatives in this Draft EIR:

- **Step 1: Determine the Project's Environmental Impacts.** Environmental impacts of the Project are identified and analyzed in Chapter 3, *Environmental Analysis of the Project*, including potential direct, indirect, and cumulative impacts related to construction, operation, and maintenance activities.
- **Step 2: Identify Alternatives.** Informed by the significant impacts of the Project (including its significant and unavoidable impacts) and considering other elements of the alternatives screening and development process described in Section 4.3, the CPUC identified the No

Project Alternative and Alternative 1, Alternative 2, and Alternative 3 as those to be carried forward for more detailed environmental review.

- **Step 3: Compare Impacts.** As a final step, the CPUC conducted a comparative analysis of the environmental impacts of the No Project Alternative and Alternative 1, Alternative 2, and Alternative 3 relative to the environmental impacts of the Project as proposed to make a preliminary determination of the environmentally superior alternative.

4.8 Comparison of Alternatives

The comparison of alternatives provided in **Table 4-15**, *Summary of Impacts of the Project and Alternatives*, is designed to satisfy the requirements of CEQA Guidelines Section 15126.6(d), which states:

> *The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.*

4.9 Environmentally Superior Alternative

The CPUC understands the environmentally superior alternative for purposes of CEQA to be the alternative with the least adverse impacts on the project area and its surrounding environment. The No Project Alternative is considered the environmentally superior alternative for CEQA purposes because it would avoid all impacts of the Project. However, the No Project Alternative would fail to meet the basic objectives of the Project. When the environmentally superior alternative is the No Project Alternative, CEQA Guidelines Section 15126.6(e)(2) requires the EIR to "also identify an environmentally superior alternative among the other alternatives."

Determining an environmentally superior alternative can be difficult because of the many factors that must be balanced. Nonetheless, at this draft stage, Alternative 3 has been determined to be preferred because, relative to the Project, it would avoid and/or reduce significant impacts of the Project on aesthetics, biological resources, geology and soils, hydrology and water quality, recreation, and tribal cultural resources. It would also generate fewer air quality and greenhouse gas emissions.

Additional information received in or developed during the agency and public review period for the Draft EIR, or during the Project approval process, could affect the balancing of the respective benefits and consequences of the alternatives. Accordingly, while a preliminary determination has been made that Alternative 3 is the environmentally superior alternative, it is premature to formally designate it as such at this stage. This preliminary determination as to which alternative is the environmentally superior alternative will be confirmed or corrected in the Final EIR.

TABLE 4-15
SUMMARY OF IMPACTS OF THE PROJECT AND ALTERNATIVES

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Aesthetics				
Criterion a: No Impact. The Project would not have a substantial adverse effect on a scenic vista. **Impact 3.1-1: LTS.** The Project would not substantially damage scenic resources within a state scenic highway. **Impact 3.1-2a: LTS.** Project construction would degrade the existing visual character or quality of public views of the site and its surroundings in non-urbanized areas. **Impact 3.1-2b: LTS**. Project operation in the vicinity of Key Observation Points (KOPs) 1, 4, 5, and 6, and Viewpoint 7 would degrade the existing visual character or quality of public views of the sites and their surroundings in non-urbanized areas. **Impact 3.1-2c: SU.** Project operation in the vicinity of KOPs 2 and 3 and BLM-suggested KOP 3 would substantially degrade the existing visual character or quality of public views of the sites and their surroundings in non-urbanized areas. The implementation of Mitigation Measure 3.1-2c would reduce the severity of the impact but not to a less-than-significant level. **Impact 3.1-3: LTS.** The Project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area. **Cumulative – Criterion a:** No Impact. The Project would not contribute to cumulative impacts related to this criterion. **Impact C.3.1-1: LTS.** The Project impact of damaging a scenic resource within a state scenic highway would not be cumulatively considerable. **Impact C.3.1-2: LTS.** The Project impacts of degrading an existing visual character or quality of public views of the sites and their surroundings in non-urbanized areas would not be cumulatively considerable. **Impact C.3.1-3: LTS.** The Project impact of substantial light or glare adversely affect daytime or nighttime views in the area would not be cumulatively considerable.	**Overall: Less than the Project** **Criterion a:** No Impact (same as the Project) because no transmission project–related development would occur that could have a substantial adverse effect on a scenic vista. **Criterion b:** No Impact (less than the Project) because no transmission project-related development would occur that could substantially degrade the existing visual character or quality of public views of the site and its surroundings. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could conflict with applicable zoning and other regulations governing scenic quality in the area. **Criterion d:** No Impact (less than the Project) because no transmission project–related development would occur that could create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Less than the Project** **Criterion a:** No Impact. Same as the Project because there are no designated scenic vistas in the area. **Impact 3.1-1: LTS**. Less than the Project because this alternative would include fewer poles in the vicinity of the eastern subtransmission line crossing of State Route 58, a locally designated scenic route, and would not otherwise be in the vicinity of a state scenic highway. **Impact 3.1-2a: LTS.** Less than the Project because there would be fewer construction sites along U.S. 395 that could degrade the existing visual character or quality of public views of the site and its surroundings in non-urbanized areas. **Impact 3.1-2b: LTS.** Less than the Project because there would be no new poles along U.S. 395 associated with this alternative that could degrade the existing visual character or quality of public views in the vicinity of KOP 5. This alternative would cause the same other (less than significant) impacts as the Project. **Impact 3.1-2c: SU.** Same as the Project because this alternative has the same alignment as the Project in the vicinity of KOPs 2 and 3 and BLM-suggested KOP 3. The implementation of Mitigation Measure 3.1-2c would reduce the severity of the impact but not to a less-than-significant level. **Impact 3.1-3: LTS.** Less than the Project because this alternative would not require new poles along U.S. 395 that could require aviation lighting that would be a source of substantial light. This alternative would cause the same other (less than significant) impacts as the Project. **Cumulative – Criterion a:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.1-1: LTS.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to fewer poles visible in the vicinity of a proposed cumulative project (i.e., SCE Ivanpah-Control Project) and the eastern subtransmission line crossing of State Route 58. **Impact C.3.1-2: LTS.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to fewer visible poles in the vicinity of a proposed cumulative project (i.e., the SCE Ivanpah-Control Project). **Impact C.3.1-3: LTS.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to fewer visible poles in the vicinity of a proposed cumulative project (i.e., SCE Ivanpah-Control Project).	**Overall: Less than the Project** **Criterion a:** No Impact. Same as the Project because there are no designated scenic vistas in the area. **Impact 3.1-1: LTS**. Same as the Project because this alternative would be the same as the Project in the vicinity of State Route 58, a locally designated scenic route, and would not otherwise be in the vicinity of a state scenic highway. **Impact 3.1-2a: LTS.** Less than the Project because construction activities along Rudnick Boulevard in the vicinity recreational motorists that could degrade the existing visual character or quality of public views of the site and its surroundings in non-urbanized areas would be avoided. This alternative would cause the same other (less than significant) impacts as the Project. **Impact 3.1-2b: LTS.** Same as the Project because this alternative has the same alignment as the Project in the vicinity of KOPs 1, 4, 5, and 6, and Viewpoint 7. **Impact 3.1-2c: SU.** Less than the Project because this alternative would avoid the significant impact along Rudnick Boulevard in the vicinity of KOP 2, although it would continue to result in a significant impact in the vicinity of KOP 3 and BLM-suggested KOP 3. The implementation of Mitigation Measure 3.1-2c would reduce the severity of the impact but not to a less-than-significant level. **Impact 3.1-3: LTS.** Less than the Project because this alternative would require less new poles along 99th Street that could require aviation lighting that would be a source of substantial light. **Cumulative – Criterion a:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.1-1: LTS.** Same as the Project because the Project impact in the vicinity of State Route 58 would be the same. **Impact C.3.1-2: LTS.** Same as the Project because this alternative would include the same contribution to the cumulative impact in the vicinity of other proposed cumulative projects (e.g., the SCE Ivanpah-Control Project and the SCE Battery Energy Storage System). **Impact 3.1-3: LTS.** Same as the Project because this alternative would include the same contribution to the cumulative impact in the vicinity of the cumulative projects.	**Overall: Less than the Project** **Criterion a:** No Impact. Same as the Project because there are no designated scenic vistas in the area. **Impact 3.1-1: LTS**. Less than the Project because this alternative would include fewer poles in the vicinity of the eastern subtransmission line crossing of State Route 58, a locally designated scenic route, and would not otherwise be in the vicinity of a state scenic highway. **Impact 3.1-2a: LTS.** Less than the Project because there would be fewer construction sites along U.S. 395 and construction activities along Rudnick Boulevard in the vicinity recreational motorists that could degrade the existing visual character or quality of public views of the site and its surroundings in non-urbanized areas would be avoided. **Impact 3.1-2b: LTS.** Less than the Project because there would be no new poles along U.S. 395 associated with this alternative that could degrade the existing visual character or quality of public views in the vicinity of KOP 5. This alternative would cause the same other (less than significant) impacts as the Project. **Impact 3.1-2c: SU.** Less than the Project because this alternative would avoid the significant impact along Rudnick Boulevard in the vicinity of KOP 2, although it would continue to result in a significant impact in the vicinity of KOP 3 and BLM-suggested KOP 3. The implementation of Mitigation Measure 3.1-2c would reduce the severity of the impact but not to a less-than-significant level. **Impact 3.1-3: LTS.** Less than the Project because this alternative would not require new poles along U.S. 395 and would require fewer new poles along 99th Street that could require aviation lighting that would be a source of substantial light. This alternative would cause the same other (less than significant) impacts as the Project. **Cumulative – Criterion a:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.1-1: LTS.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to fewer visible poles in the vicinity of the eastern subtransmission line crossing of State Route 58. **Impact C.3.1-2: LTS.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to fewer visible poles in the vicinity of a proposed cumulative project (i.e., SCE Ivanpah-Control Project). **Impact C.3.1-3: LTS.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to fewer poles in the vicinity of a proposed cumulative project (i.e., SCE Ivanpah-Control Project).

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Agriculture and Forestry Resources				
Criterion a: No Impact. The Project sites and alignments would not be located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as defined by the DOC. **Criterion b:** No Impact. The Project would not involve any parcels under Williamson Act contracts. **Criterion c:** No Impact. No portion of the Project alignment would cross or be constructed, operated, and maintained on lands zoned or otherwise designated as timberland or forest land. **Criterion d:** No Impact. The Project would be located outside areas zoned or designated as forest land. **Criterion e:** No Impact. The Project would not involve any alterations to the current environment that could lead to the conversion of farmland into non-agricultural use or forest land into non-forest use. **Cumulative –** No Impact. The Project would not result in impacts that could contribute to cumulative impacts.	**Overall: Same as the Project** **Criterion a:** No Impact (same than the Project) because no transmission project–related development would occur that could convert Prime Farmland to non-agricultural use. **Criterion b:** No Impact (same as the Project) because no transmission project-related development would occur that could conflict with existing zoning for agricultural use or a Williamson Act. **Criterion c:** No Impact (same as the Project) because no transmission project-related development would occur that could conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. **Criterion d:** No Impact (same as the Project) because no transmission project-related development would occur that could result in the loss of forest land or conversion of forest land to non-forest use. **Criterion e:** No Impact (same than the Project) because no transmission project–related development would involve other changes in the existing environment which could result in conversion of agricultural land to non-agricultural use **Cumulative –** No Impact (same as the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Same as the Project** **Criteria a through d:** No Impact. Same as the Project because this alternative would have no impact on agriculture or forestry resources. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Same as the Project** **Criteria a through d:** No Impact. Same as the Project because this alternative would have no impact on agriculture or forestry resources. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Same as the Project** **Criteria a through d:** No Impact. Same as the Project because this alternative would have no impact on agriculture or forestry resources. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could contribute to cumulative impacts.
Air Quality				
Impact 3.3-1: LTS. The Project would not conflict with or obstruct implementation of the applicable air quality plans for Eastern Kern County Air Pollution Control District (EKAPCD) and Mojave Desert Air Quality Management District (MDAQMD). **Impact 3.3-2: LTS.** The Project would result in a net increase of criteria pollutants for which the project region is nonattainment under an applicable federal or State ambient air quality standard. **Impact 3.3-3: LTS.** The Project would expose sensitive receptors to substantial pollutant concentrations. **Impact 3.3-4: LTS.** The Project would result in emissions (such as those leading to odors) that could adversely affect people. **Impact 3.3-5: LTS.** Construction activities associated with the Project would expose local sensitive receptors to Coccidioides immitis spores. **Impact C.3.3-1: LTS.** The Project impact of conflicting with or obstructing implementation of the applicable air quality plans for EKAPCD and MDAQMD would not be cumulatively considerable. **Impact C.3.3-2: LTS.** The Project impact of generating a net increase of criteria pollutants for which the Project region is nonattainment under an applicable federal or state ambient air quality standard would not be cumulatively considerable. **Impact C.3.3-3: LTS.** The Project impact of exposing sensitive receptors to pollutant concentrations would not be cumulatively considerable. **Impact C.3.3-4: LTS.** The Project impact of emissions (such as those leading to odors) adversely affecting people would not be cumulatively considerable.	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could conflict with or obstruct implementation of the applicable air quality plan. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could result in a cumulatively considerable net increase of criteria pollutants for which the project region is nonattainment under an applicable federal or State ambient air quality standard. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could expose sensitive receptors to substantial pollutant concentrations. **Criterion d:** No Impact (less than the Project) because no transmission project–related development would occur that could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. **Cumulative -** No Impact (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Less than the Project** **Impact 3.3-1: LTS.** Less than the Project because this alternative would include less construction activities and emissions in the MDAQMD due to the installation of fewer poles and access roads in the MDAQMD. **Impact 3.3-2: LTS.** Less than the Project because this alternative would include less construction activities and emissions in the MDAQMD due to the installation of fewer poles and access roads in the MDAQMD. **Impact 3.3-3: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the closest sensitive receptors. **Impact 3.3-4: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the closest sensitive receptors. **Impact 3.3-5: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the closest sensitive receptors. **Impact C.3.3-1: LTS.** Less than the Project because this alternative would generate less construction emissions in the MDAQMD that would contribute to the cumulative impact. **Impact C.3.3-2: LTS.** Less than the Project because this alternative would generate less construction emissions in the MDAQMD that would contribute to the cumulative impact. **Impacts C.3.3-3 through C.3.3-5: LTS.** Same as the Project because this alternative would be the same vicinity of the SCE Battery Energy Storage System cumulative project, which is the only cumulative project	**Overall: Less than the Project** **Impact 3.3-1: LTS.** Less than the Project because this alternative would include less construction activities and emissions in the EKAPCD due to its reduced length of subtransmission line in the EKAPCD. **Impact 3.3-2: LTS.** Less than the Project because this alternative would include less construction activities and emissions due to its reduced length of subtransmission line in the EKAPCD. **Impact 3.3-3: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the closest sensitive receptors. **Impact 3.3-4: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the closest sensitive receptors. **Impact 3.3-5: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of closest sensitive receptors. **Impact C.3.3-1: LTS.** Less than the Project because this alternative would generate fewer construction emissions in the EKAPCD that would contribute to the cumulative impact. **Impact C.3.3-2: LTS.** Less than the Project because this alternative would generate fewer construction emissions in the EKAPCD that would contribute to the cumulative impact. **Impacts C.3.3-3 through C.3.3-5: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the SCE Battery Energy Storage System cumulative project, which is the only	**Overall: Less than the Project** **Impact 3.3-1: LTS.** Less than the Project because this alternative would include less construction activities and emissions in the MDAQMD due to the installation of less poles and access road in the MDAQMD and would include less construction activities and emissions in the EKAPCD due to its reduced length of subtransmission line in the EKAPCD. **Impact 3.3-2: LTS.** Less than the Project because this alternative would include less construction activities and emissions in the MDAQMD due to the installation of fewer poles and access roads in the MDAQMD and would include less construction activities and emissions in the EKAPCD due to its reduced length of subtransmission line in the EKAPCD. **Impact 3.3-3: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the closest sensitive receptors. **Impact 3.3-4: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the closest sensitive receptors. **Impact 3.3-5: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the closest sensitive receptors. **Impact C.3.3-1: LTS.** Less than the Project because this alternative would generate fewer construction emissions in the MDAQMD and the EKAPCD that would contribute to the cumulative impact. **Impact C.3.3-2: LTS.** Less than the Project because this alternative would generate fewer construction emissions

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Impact C.3.3-5: LTS. The Project impact of exposing local sensitive receptors to Coccidioides immitis spores would not be cumulatively considerable.		considered in the geographical context of cumulative impacts on sensitive receptors.	cumulative project considered in the geographical context of cumulative impacts on sensitive receptors.	in the MDAQMD and the EKAPCD that would contribute to the cumulative impact. **Impacts C.3.3-3 through C.3.3-5: LTS.** Same as the Project because this alternative would be the same as the Project in the vicinity of the SCE Battery Energy Storage System cumulative project, which is the only cumulative project considered in the geographical context of cumulative impacts on sensitive receptors.
Biological Resources				
Impact 3.4-1: LSM. Project construction would have an adverse effect on special-status plant species. The implementation of Mitigation Measures 3.4-1a through 3.4-1c would reduce the impact to less than significant. **Impact 3.4-2: LSM.** Project construction would have a substantial adverse effect on special-status wildlife species. The implementation of Mitigation Measure 3.4-1a Mitigation Measures 3.4-2a through 3.4-2f would reduce the impact to less than significant. **Impact 3.4-3: LSM.** Project operation would have a substantial adverse effect on special-status plant and wildlife species. The implementation of Mitigation Measure 3.4-3 would reduce the impact to less than significant. **Impact 3.4-4: LSM.** The Project could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS. The implementation of Mitigation Measures 3.4-1b, 3.4-3, and 3.4-4 would reduce the impact to less than significant. **Impact 3.4-5a: LSM.** Project construction could have an adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means. The implementation of Mitigation Measure 10-1a would reduce the impact to less than significant. **Impact 3.4-5b: LTS.** Project operation and maintenance could have an adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means. **Impact 3.4-6: LSM.** Project construction and operation could interfere with the movement of migratory wildlife species or migratory wildlife corridors or impede the use of native wildlife nursery sites. The implementation of Mitigation Measures 3.4-2b, 3.4-2c and 3.4-3 would reduce the impact to less than significant. **Impact 3.4-7a: LSM.** Project construction would conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The implementation of Mitigation Measure 3.4-1b would reduce the impact to less than significant. **Impact 3.4-7b: LTS.** Project operation would not conflict with any local policies or ordinances protecting biological resources. **Criterion f:** No Impact. The Project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP. **Impact 3.4-8: LTS.** Project operation would create a collision and/or electrocution risk for birds or bats. **Impact C.3.4-1: LSM.** The Project construction impact related to an adverse effect on special-status plant species would be cumulatively considerable. The implementation of Mitigation	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could 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. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could 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. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. **Criterion d:** No Impact (less than the Project) because no transmission project–related development would occur that could 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. **Criterion e:** No Impact (less than the Project) because no transmission project–related development would occur that could conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **Criterion f:** No Impact (same as the Project) because no transmission project–related development would occur that could conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. **Criterion g:** No Impact (less than the Project) because no transmission project–related development would occur that could create a substantial collision or electrocution risk for birds or bats. **Cumulative -** No Impacts (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Less than the Project** **Impact 3.4-1: LSM.** Less than the Project because this alternative would include less construction activities and temporary disturbance that would have an adverse effect on special-status plant species. The implementation of Mitigation Measures 3.4-1a through 3.4-1c would reduce the impact to less than significant. **Impact 3.4-2: LSM.** Less than the Project because this alternative would include less construction activities and temporary disturbance that would have a substantial adverse effect on special-status wildlife species. The implementation of Mitigation Measure 3.4-1a and Mitigation Measures 3.4-2a through 3.4-2f would reduce the impact to less than significant. **Impact 3.4-3: LSM.** Less than the Project because this alternative would include less permanent disturbance areas that would have a substantial adverse effect on special-status plant and wildlife species and would include substantially fewer poles that would reduce the risk of raven predation on desert tortoise. The implementation of Mitigation Measure 3.4-3 would reduce the impact to less than significant. **Impact 3.4-4: LSM.** Less than the Project because this alternative would include less ground disturbance that could have a substantial adverse effect on any riparian habitat or other sensitive natural community. The implementation of Mitigation Measures 3.4-1b, 3.4-3, and 3.4-4 would reduce the impact to less than significant. **Impact 3.4-5a: LSM.** Less than the Project because this alternative would include less construction and ground disturbance that could have an adverse effect on non-wetland waters of the state. The implementation of Mitigation Measure 10-1a would reduce the impact to less than significant. **Impact 3.4-5b: LTS.** Less than the Project because this alternative would require less maintenance of poles that could have an adverse effect on non-wetland waters of the state. **Impact 3.4-6: LSM.** Less than the Project because this alternative would include fewer permanent disturbance areas and would include substantially fewer poles and so would reduce the risk of raven predation on desert tortoise, which would interfere with the movement of migratory wildlife species or migratory wildlife corridors or impede the use of native wildlife nursery sites. The implementation of Mitigation Measures 3.4-2b, 3.4-2c and 3.4-3 would reduce the impact to less than significant. **Impact 3.4-7a: LSM.** Less than the Project because this alternative would affect fewer Joshua trees which would reduce the impact of a conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The implementation of	**Overall: Less than the Project** **Impact 3.4-1: LSM.** Less than the Project because this alternative would include less construction activities and temporary disturbance that would have an adverse effect on special-status plant species. The implementation of Mitigation Measures 3.4-1a through 3.4-1c would reduce the impact to less than significant. **Impact 3.4-2: LSM.** Less than the Project because this alternative would include less construction activities and temporary disturbance areas that would have a substantial adverse effect on special-status wildlife species. The implementation of Mitigation Measure 3.4-1a and Mitigation Measures 3.4-2a through 3.4-2f would reduce the impact to less than significant. **Impact 3.4-3: LSM.** Less than the Project because this alternative would include fewer permanent disturbance areas that would have a substantial adverse effect on special-status plant and wildlife species and would include 1.2 miles fewer subtransmission line poles that would reduce the risk of raven predation on desert tortoise. The implementation of Mitigation Measure 3.4-3 would reduce the impact to less than significant. **Impact 3.4-4: LSM.** Less than the Project because this alternative would include less ground disturbance that could have a substantial adverse effect on any riparian habitat or other sensitive natural community. The implementation of Mitigation Measures 3.4-1b, 3.4-3, and 3.4-4 would reduce the impact to less than significant. **Impact 3.4-5a: LSM.** Less than the Project because this alternative would include less construction and ground disturbance that could have an adverse effect on non-wetland waters of the state. The implementation of Mitigation Measure 10-1a would reduce the impact to less than significant. **Impact 3.4-5b: LTS.** Less than the Project because this alternative would require maintenance of reduced mileage of subtransmission line that could have an adverse effect on non-wetland waters of the state. **Impact 3.4-6: LSM.** Less than the Project because this alternative would include fewer permanent disturbance areas and would include fewer miles of subtransmission line poles and so would reduce the risk of raven predation on desert tortoise that would reduce interference with the movement of migratory wildlife species or migratory wildlife corridors or impede the use of native wildlife nursery sites. The implementation of Mitigation Measures 3.4-2b, 3.4-2c and 3.4-3 would reduce the impact to less than significant. **Impact 3.4-7a: LSM.** Same as the Project because this alternative would affect the same amount of Joshua trees that would conflict with local policies or ordinances protecting biological resources, such as a tree	**Overall: Less than the Project** **Impact 3.4-1: LSM.** Less than the Project because this alternative would include less construction activities and temporary disturbance that would have an adverse effect on special-status plant species. The implementation of Mitigation Measures 3.4-1a through 3.4-1e would reduce the impact to less than significant. **Impact 3.4-2: LSM.** Less than the Project because this alternative would include less construction activities and temporary disturbance areas that would have a substantial adverse effect on special-status wildlife species. The implementation of Mitigation Measure 3.4-1a and Mitigation Measures 3.4-2a through 3.4-2f would reduce the impact to less than significant. **Impact 3.4-3: LSM.** Less than the Project because this alternative would include fewer permanent disturbance areas that would have a substantial adverse effect on special-status plant and wildlife species and would include substantially fewer poles and related subtransmission line and so would reduce the risk of raven predation on desert tortoise. The implementation of Mitigation Measure 3.4-3 would reduce the impact to less than significant. **Impact 3.4-4: LSM.** Less than the Project because this alternative would include less ground disturbance that could have a substantial adverse effect on any riparian habitat or other sensitive natural community. The implementation of Mitigation Measures 3.4-1b, 3.4-3, and 3.4-4 would reduce the impact to less than significant. **Impact 3.4-5a: LSM.** Less than the Project because this alternative would include less construction and ground disturbance that could have an adverse effect on non-wetland waters of the state. The implementation of Mitigation Measure 10-1a would reduce the impact to less than significant. **Impact 3.4-5b: LTS.** Less than the Project because this alternative would require less maintenance of poles and subtransmission line that could have an adverse effect on non-wetland waters of the state. **Impact 3.4-6: LSM.** Less than the Project because this alternative would include fewer permanent disturbance areas and would include substantially fewer poles and miles of subtransmission line that would reduce the risk of raven predation on desert tortoise, which would interfere with the movement of migratory wildlife species or migratory wildlife corridors or impede the use of native wildlife nursery sites. The implementation of Mitigation Measures 3.4-2b, 3.4-2c and 3.4-3 would reduce the impact to less than significant. **Impact 3.4-7a: LSM.** Less than the Project because this alternative would affect fewer Joshua trees which would reduce the impact of a conflict with local policies or ordinances protecting biological resources, such as a tree

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Measures 3.4-1a through 3.4-1c would reduce the impact to less than significant. **Impact C.3.4-2: LSM.** The Project construction impact related to an adverse effect on special-status wildlife species would be cumulatively considerable. The implementation of Mitigation Measure 3.4-1a and Mitigation Measures 3.4-2a through 3.4-2f would reduce the impact to less than significant. **Impact C.3.4-3: LSM.** The Project operational impact related to a substantial adverse effect on special-status plant and wildlife species would be cumulatively considerable. The implementation of Mitigation Measure 3.4-3 would reduce the impact to less than significant. **Impact C.3.4-4: LSM.** The Project impact related to having a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS, would be cumulatively considerable. The implementation of Mitigation Measures 3.4-1bd, 3.4-3, and 3.4-4 would reduce the impact to less than significant. **Impact C.3.4-5a: LSM.** The Project construction impact related to having a substantial adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means would be cumulatively considerable. The implementation of Mitigation Measure 10-1a would reduce the impact to less than significant. **Impact C.3.4-5b: LTS.** The Project operation and maintenance impact related to having a substantial adverse effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means would not be cumulatively considerable. **Impact C.3.4-6: LSM.** The Project impact related to interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or to impeding the use of native wildlife nursery sites, would be cumulatively considerable. The implementation of Mitigation Measures 3.4-2b, 3.4-2c, and -3.4-3 would reduce the impact to less than significant. **Impact C.3.4-7a: LSM.** The Project construction impact related to a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, would be cumulatively considerable. The implementation of Mitigation Measure 3.4-1b would reduce the impact to less than significant. **Impact C.3.4-7b: LTS.** The Project operational impact related to a conflict with any local policies or ordinances protecting biological resources would not be cumulatively considerable. **Cumulative Criterion f:** No Impact. The Project would not contribute to cumulative impacts related to this criterion. **Impact C.3.4-8: LTS.** The Project operational impact related to creating a collision or electrocution risk for birds or bats would not be cumulatively considerable.		Mitigation Measure 3.4-1b would be needed to reduce the impact to less than significant. **Impact 3.4-7b: LTS.** Less than the Project because this alternative would include less pole maintenance that could conflict with any local policies or ordinances protecting biological resources. **Criterion f:** No Impact. Same as the Project because this alternative would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP. **Impact 3.4-8: LTS.** Less than the Project because this alternative would include fewer poles that could create a collision risk for birds or bats. **Impact C.3.4-1: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to reduced construction effects on special-status plant species near other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measures 3.4-1a through 3.4-1c would reduce the impact to less than significant. **Impact C.3.4-2: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to reduced construction effects on special-status wildlife species near other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measure 3.4-1a and Mitigation Measures 3.4-2a through 3.4-2f would reduce the impact to less than significant. **Impact C.3.4-3: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative operational impact on special-status plant and wildlife species in the vicinity of other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measure 3.4-3 would reduce the impact to less than significant. **Impact C.3.4-4: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative effect on any riparian habitat or other sensitive natural community in the vicinity of other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measures 3.4-1b, 3.4-3, and 3.4-4 would reduce the impact to less than significant. **Impact C.3.4-5a: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means in the vicinity of other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measure 10-1a would reduce the impact to less than significant. **Impact C.3.4-5b: LTS.** Less than the Project because this alternative would include less of a contribution to the cumulative impact on non-wetland waters of the state. **Impact C.3.4-6: LSM.** Less than the Project because this alternative would include a reduced contribution to permanent disturbance areas and would include substantially less poles that would reduce the cumulative risk of raven predation on desert tortoise. The implementation of Mitigation Measures 3.4-2b, 3.4-2c, and 3.4-3 would reduce the impact to less than significant. **Impact C.3.4-7a: LSM.** Less than the Project because this alternative would affect less Joshua trees, which	preservation policy or ordinance. The implementation of Mitigation Measure 3.4-1b would be needed to reduce the impact to less than significant. **Impact 3.4-7b: LTS.** Less than the Project because this alternative would include less pole maintenance that could conflict with any local policies or ordinances protecting biological resources. **Criterion f:** No Impact. Same as the Project because this alternative would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP. **Impact 3.4-8: LTS.** Less than the Project because this alternative would include fewer miles of subtransmission line that could create a collision and electrocution risk for birds or bats. **Impact C.3.4-1: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to reduced construction effects on special-status plant species near other cumulative projects. The implementation of Mitigation Measures 3.4-1a through 3.4-1c would reduce the impact to less than significant. **Impact C.3.4-2: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to reduced construction effects on special-status wildlife species near other cumulative projects. The implementation of Mitigation Measure 3.4-1a and Mitigation Measures 3.4-2a through 3.4-2f would reduce the impact to less than significant. **Impact C.3.4-3: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative operational impact on special-status plant and wildlife species in the vicinity of other cumulative projects. The implementation of Mitigation Measure 3.4-3 would reduce the impact to less than significant. **Impact C.3.4-4: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative effect on any riparian habitat or other sensitive natural community in the vicinity of other cumulative projects. The implementation of Mitigation Measures 3.4-1b, 3.4-3, and 3.4-4 would reduce the impact to less than significant. **Impact C.3.4-5a: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means in the vicinity of other cumulative projects. The implementation of Mitigation Measure 10-1a would reduce the impact to less than significant. **Impact C.3.4-5b: LTS.** Less than the Project because this alternative would include less of a contribution to the cumulative impact on non-wetland waters of the state. **Impact C.3.4-6: LSM.** Less than the Project because this alternative would include a reduced contribution to permanent disturbance areas and would include less miles of subtransmission line that would reduce the cumulative risk of raven predation on desert tortoise. The implementation of Mitigation Measures 3.4-2b, 3.4-2c, and 3.4-3 would reduce the impact to less than significant. **Impact C.3.4-7a: LSM.** Same as the Project because this alternative would affect the same amount of Joshua trees that would contribute to the cumulative impact of conflicting	preservation policy or ordinance. The implementation of Mitigation Measure 3.4-1b would be needed to reduce the impact to less than significant. **Impact 3.4-7b: LTS.** Less than the Project because this alternative would include less pole and subtransmission line maintenance that could conflict with any local policies or ordinances protecting biological resources. **Criterion f:** No Impact. Same as the Project because this alternative would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP. **Impact 3.4-8: LTS.** Less than the Project because this alternative would include fewer poles and miles of subtransmission line that could create a collision risk for birds or bats. **Impact C.3.4-1: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to reduced construction effects on special-status plant species near other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measures 3.4-1a through 3.4-1c would reduce the impact to less than significant. **Impact C.3.4-2: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative impact due to reduced construction effects on special-status wildlife species near other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measure 3.4-1a and Mitigation Measures 3.4-2a through 3.4-2f would reduce the impact to less than significant. **Impact C.3.4-3: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative operational impact on special-status plant and wildlife species in the vicinity of other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measure 3.4-3 would reduce the impact to less than significant. **Impact C.3.4-4: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative effect on any riparian habitat or other sensitive natural community in the vicinity of other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measures 3.4-1b, 3.4-3, and 3.4-4 would reduce the impact to less than significant. **Impact C.3.4-5a: LSM.** Less than the Project because this alternative would include less of a contribution to the cumulative effect on non-wetland waters of the state through direct removal, filling, hydrological interruption, or other means in the vicinity of other cumulative projects, such as the SCE Ivanpah-Control Project. The implementation of Mitigation Measure 10-1a would reduce the impact to less than significant. **Impact C.3.4-5b: LTS.** Less than the Project because this alternative would include less of a contribution to the cumulative impact on non-wetland waters of the state. **Impact C.3.4-6: LSM.** Less than the Project because this alternative would include a reduced contribution to permanent disturbance areas and would include substantially less poles that would reduce the cumulative risk of raven predation on desert tortoise. The implementation of Mitigation Measures 3.4-2b, 3.4-2c, and 3.4-3 would reduce the impact to less than significant.

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
		would reduce its contribution to the cumulative impact of conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, that would be cumulatively considerable. The implementation of Mitigation Measure 3.4-1b would be needed to reduce the impact to less than significant. **Impact C.3.4-7b: LTS.** Less than the Project because this alternative would include less maintenance that could cumulatively conflict with any local policies or ordinances protecting biological resources. **Cumulative Criterion f:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.4-8: LTS.** Less than the Project because this alternative would include fewer poles that that would contribute to the cumulative collision risk for birds or bats.	with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The implementation of Mitigation Measure 3.4-1b would be needed to reduce the impact to less than significant. **Impact C.3.4-7b: LTS.** Less than the Project because this alternative would include a reduced contribution to the maintenance cumulative impact if conflicting with any local policies or ordinances protecting biological resources. **Cumulative Criterion f:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.4-8: LTS.** Less than the Project because this alternative would include reduced mileage of subtransmission line that would contribute to the cumulative collision risk for birds or bats.	**Impact C.3.4-7a: LSM.** Less than the Project because this alternative would affect fewer Joshua trees, which would reduce its contribution to the cumulative impact of conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, that would be cumulatively considerable. The implementation of Mitigation Measure 3.4-1b would be needed to reduce the impact to less than significant. **Impact C.3.4-7b: LTS.** Less than the Project because this alternative would include less maintenance that could cumulatively conflict with any local policies or ordinances protecting biological resources. **Cumulative Criterion f:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.4-8: LTS.** Less than the Project because this alternative would include fewer poles and miles of subtransmission line that that would contribute to the cumulative collision risk for birds or bats.
Cultural Resources				
Impact 3.5 1: Project construction could cause an adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines. **Impact 3.5-2: LTS.** Project construction could cause an adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines. **Impact 3.5-3: LTS.** The Project may disturb human remains, including those interred outside of dedicated cemeteries. **Impact C.3.5-1: LTS.** The Project construction impact related to causing an adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines would not be cumulatively considerable. **Impact C.3.5-2: LTS.** The Project construction impact related to causing an adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines would not be cumulatively considerable. **Impact C.3.5-3: LTS.** The Project impact related to disturbance of human remains, including those interred outside of dedicated cemeteries, would not be cumulatively considerable.	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could disturb any human remains, including those interred outside of dedicated cemeteries. **Cumulative -** No Impacts (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Less than the Project** **Impact 3.5-1: LTS**. Less than the Project because this alternative would include less construction that could cause an adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines. **Impact 3.5-2: LTS.** Less than the Project because this alternative would include less ground disturbance that could cause an adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines. **Impact 3.5-3: LTS.** Less than the Project because this alternative would include less ground disturbance that could disturb human remains, including those interred outside of dedicated cemeteries. **Impact C.3.5-1: LTS.** Less than the Project because this alternative would result in less construction that would reduce its contribution to the cumulative construction impact related to causing an adverse change in the significance of a historical resource. **Impact C.3.5-2: LTS.** Less than the Project because this alternative would result in construction of fewer poles that would reduce its contribution to the cumulative construction impact related to causing an adverse change in the significance of an archaeological resource. **Impact C.3.5-3: LTS.** Less than the Project because this alternative would result in construction of fewer poles that would reduce its contribution to the cumulative impact related to disturbance of human remains, including those interred outside of dedicated cemeteries.	**Overall: Less than the Project** **Impact 3.5-1: LTS**. Less than the Project because this alternative would include less construction that could cause an adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines. **Impact 3.5-2: LTS.** Less than the Project because this alternative would include less ground disturbance that could cause an adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines. **Impact 3.5-3: LTS.** Less than the Project because this alternative would include less ground disturbance that could disturb human remains, including those interred outside of dedicated cemeteries. **Impact C.3.5-1: LTS.** Less than the Project because this alternative would result in less construction that would reduce its contribution to the cumulative construction impact related to causing an adverse change in the significance of a historical resource. **Impact C.3.5-2: LTS.** Less than the Project because this alternative would result in construction of fewer miles of subtransmission line that would reduce its contribution to the cumulative construction impact related to causing an adverse change in the significance of an archaeological resource. **Impact C.3.5-3: LTS.** Less than the Project because this alternative would result in construction of fewer miles of subtransmission line that would reduce its contribution to the cumulative impact related to disturbance of human remains, including those interred outside of dedicated cemeteries.	**Overall: Less than the Project** **Impact 3.5-1: LTS**. Less than the Project because this alternative would include less construction that could cause an adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines. **Impact 3.5-2: LTS.** Less than the Project because this alternative would include less ground disturbance that could cause an adverse change in the significance of an archaeological resource pursuant to Section 15064.5 [of the CEQA Guidelines]. **Impact 3.5-3: LTS.** Less than the Project because this alternative would include less ground disturbance that could disturb human remains, including those interred outside of dedicated cemeteries. **Impact C.3.5-1: LTS.** Less than the Project because this alternative would result in less construction that would reduce its contribution to the cumulative construction impact related to causing an adverse change in the significance of a historical resource. **Impact C.3.5-2: LTS.** Less than the Project because this alternative would result in construction of fewer poles and miles of subtransmission line that would reduce its contribution to the cumulative construction impact related to causing an adverse change in the significance of an archaeological resource. **Impact C.3.5-3: LTS.** Less than the Project because this alternative would result in construction of fewer poles and miles of subtransmission line that would reduce its contribution to the cumulative impact related to disturbance of human remains, including those interred outside of dedicated cemeteries.
Energy				
Impact 3.6-1: LTS. The Project would result in consumption of energy resources during construction and operation. **Criterion b:** No Impact. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that would result in wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of resources.	**Overall: Less than the Project** **Impact 3.6-1: LTS.** Less than the Project because this alternative would result in less consumption of energy resources during construction and operation.	**Overall: Less than the Project** **Impact 3.6-1: LTS.** Less than the Project because this alternative would result in less consumption of energy resources during construction and operation.	**Overall: Less than the Project** **Impact 3.6-1: LTS.** Less than the Project because this alternative would result in less consumption of energy resources during construction and operation.

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Criterion c: No Impact. The Project would not add capacity for the purpose of serving a nonrenewable energy resource. **Impact C.3.6-1: LTS.** The Project impact of consumption of energy resources during construction and operation would not be cumulatively considerable. **Cumulative - Criteria b and c:** No Impact. The Project would not contribute to cumulative impacts related to these criteria.	**Criterion b:** No Impact (same as the Project) because no transmission project-related development would occur that could conflict with or obstruct a local or state plan for renewable energy or energy efficiency. **Criterion c:** No Impact (same as the Project) because no transmission project-related development would occur that could add capacity for the purpose of serving a nonrenewable energy resource. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Criterion b:** No Impact. Same as the Project because this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **Criterion c:** No Impact. Same as the Project because this alternative would not add capacity for the purpose of serving a nonrenewable energy resource. **Impact C.3.6-1: LTS.** Less than the Project because this alternative would result in less pole and access road construction activities that would reduce its contribution to the cumulative impact of consumption of energy resources. **Cumulative - Criteria b and c:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to these criteria.	**Criterion b:** No Impact. Same as the Project because this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **Criterion c:** No Impact. Same as the Project because this alternative would not add capacity for the purpose of serving a nonrenewable energy resource. **Impact C.3.6-1: LTS.** Less than the Project because this alternative would result in less subtransmission line construction activities that would reduce its contribution to the cumulative impact of consumption of energy resources. **Cumulative - Criteria b and c:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to these criteria.	**Criterion b:** No Impact. Same as the Project because this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **Criterion c:** No Impact. Same as the Project because this alternative would not add capacity for the purpose of serving a nonrenewable energy resource. **Impact C.3.6-1: LTS.** Less than the Project because this alternative would result in less pole, access road, and subtransmission line construction activities that would reduce its contribution to the cumulative impact of consumption of energy resources. **Cumulative - Criteria b and c:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to these criteria.
Geology, Soils, and Paleontological Resources				
Criterion a.i: No Impact. The Project would result in no impact regarding rupture of a known earthquake fault. **Impact 3.7-1: LTS.** The Project would be subject to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading. **Criterion a.iv:** No Impact. The Project components would be constructed on flat terrain, where there is no risk of landslides or slope instability. **Impact 3.7-2a: LSM.** Project construction would result in soil erosion or the loss of topsoil. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact 3.7-2b: LTS.** Project operation and maintenance would result in soil erosion or the loss of topsoil. **Impact 3.7-3: LTS.** The Project could 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 subsidence or collapse. **Impact 3.7-4: LTS.** The Project would be located on expansive soil that could create direct or indirect risks to life or property. **Criterion e:** No Impact. The Project would result in no impact associated with septic tanks or alternative wastewater disposal systems. **Impact 3.7-5: LTS.** Construction of the Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. **Cumulative Criteria a.i, a.iv, and e:** No Impact. The Project would not contribute to cumulative impacts related to these criteria. **Impact C.3.7-1: LTS.** The Project impact related to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading would not be cumulatively considerable. **Impact C.3.7-2a: LSM.** The Project construction impact of soil erosion or loss of topsoil would be cumulatively considerable. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.7-2b: LTS.** The Project operation and maintenance impact of soil erosion or loss of topsoil would not be cumulatively considerable.	**Overall: Less than the Project** **Criterion a.i:** No Impact (same as the Project) because no transmission project–related development would occur that could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. **Criterion a.ii:** No Impact (less than the Project) because no transmission project–related development would occur that could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. **Criterion a.iii:** No Impact (less than the Project) because no transmission project–related development would occur that could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. **Criterion a.iv:** No Impact (same as the Project) because no transmission project–related development would occur that could directly or indirectly cause a risk of landslides or slope instability. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could result in substantial soil erosion or the loss of topsoil. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could 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. **Criterion d:** No Impact (less than the Project) because no transmission project–related development would occur that could be located on expansive soil creating substantial direct or indirect risks to life or property. **Criterion e:** No Impact (same as the Project) because no transmission project–related development would occur that could have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. **Criterion f:** No Impact (less than the Project) because no transmission project–related development would occur that could directly or indirectly destroy a unique	**Overall: Less than the Project** **Criterion a.i:** No Impact. Same as the Project because this alternative would result in no impact regarding rupture of a known earthquake fault. **Impact 3.7-1: LTS.** Less than the Project because this alternative would include fewer poles that would be subject to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading. **Criterion a.iv:** No Impact. Same as the Project because the alternative components would be constructed on flat terrain, where there is no risk of landslides or slope instability. **Impact 3.7-2a: LSM.** Less than the Project because this alternative would include fewer poles and reduced length of access road that would require less construction ground disturbance and associated soil erosion or the loss of topsoil. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.7-2b: LTS.** Less than the Project because this alternative would require maintenance of fewer poles and access roads that would result in less soil erosion or the loss of topsoil. **Impact 3.7-3: LTS.** Less than the Project because this alternative would require less poles and access road construction ground disturbance that would reduce the potential for a geologic unit or soil to become unstable and potentially result in on- or off-site subsidence or collapse. **Impact 3.7-4: LTS.** Less than the Project because this alternative would require less pole and access road construction ground disturbance that would reduce the potential for expansive soil to create direct or indirect risks to life or property. **Criterion e:** No Impact. Same as the Project because this alternative would result in no impact regarding septic tanks or alternative wastewater disposal systems. **Impact 3.7-5: LTS.** Less than the Project because this alternative would require less pole and access road construction ground disturbance in alluvium, which would result in less of a potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**Overall: Less than the Project** **Criterion a.i:** No Impact. Same as the Project because this alternative would result in no impact regarding rupture of a known earthquake fault. **Impact 3.7-1: LTS.** Less than the Project because this alternative would include reduced mileage of subtransmission line that would be subject to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading. **Criterion a.iv:** No Impact. Same as the Project because the alternative components would be constructed on flat terrain, where there is no risk of landslides or slope instability. **Impact 3.7-2a: LSM.** Less than the Project because this alternative would include reduced mileage of subtransmission line that would require less construction ground disturbance and associated soil erosion or the loss of topsoil. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.7-2b: LTS.** Less than the Project because this alternative would require maintenance of reduced mileage of subtransmission line that would result in less soil erosion or the loss of topsoil. **Impact 3.7-3: LTS.** Less than the Project because this alternative would require less subtransmission line construction ground disturbance that would reduce the potential for a geologic unit or soil to become unstable and potentially result in on- or off-site subsidence or collapse. **Impact 3.7-4: LTS.** Less than the Project because this alternative would require less subtransmission line construction ground disturbance that would reduce the potential for expansive soil to create direct or indirect risks to life or property. **Criterion e:** No Impact. Same as the Project because this alternative would result in no impact regarding septic tanks or alternative wastewater disposal systems. **Impact 3.7-5: LTS.** Less than the Project because this alternative would require less subtransmission line construction ground disturbance in alluvium, which would result in less of a potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**Overall: Less than the Project** **Criterion a.i:** No Impact. Same as the Project because this alternative would result in no impact regarding rupture of a known earthquake fault. **Impact 3.7-1: LTS.** Less than the Project because this alternative would include fewer poles and reduced mileage of subtransmission line that would be subject to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading. **Criterion a.iv:** No Impact. Same as the Project because the alternative components would be constructed on flat terrain, where there is no risk of landslides or slope instability. **Impact 3.7-2a: LSM.** Less than the Project because this alternative would include fewer poles, reduced length of access road, and reduced mileage of subtransmission line that would require less construction ground disturbance and associated soil erosion or the loss of topsoil. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.7-2b: LTS.** Less than the Project because this alternative would require maintenance of fewer poles, access roads, and reduced mileage of subtransmission line that would result in less soil erosion or the loss of topsoil. **Impact 3.7-3: LTS.** Less than the Project because this alternative would require fewer poles and access roads, and reduced mileage of subtransmission line construction ground disturbance that would reduce the potential for a geologic unit or soil to become unstable and potentially result in on- or off-site subsidence or collapse. **Impact 3.7-4: LTS.** Less than the Project because this alternative would require less poles, access roads, and reduced mileage of subtransmission line construction ground disturbance that would reduce the potential for expansive soil to create direct or indirect risks to life or property. **Criterion e:** No Impact. Same as the Project because this alternative would result in no impact regarding septic tanks or alternative wastewater disposal systems. **Impact 3.7-5: LTS.** Less than the Project because this alternative would require fewer poles and access roads, and reduced mileage of subtransmission line construction

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Impact C.3.7-3: LTS. The Project impact causing or contributing to unstable soils would not be cumulatively considerable. **Impact C.3.7-4: LTS.** The Project impact related to expansive soil would not be cumulatively considerable. **Impact C.3.7-5: LTS.** The Project construction impact relative to destruction of a unique paleontological resource or site or unique geologic feature would not be cumulatively considerable.	paleontological resource or site or unique geologic feature. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Cumulative Criteria a.i, a.iv, and e:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to these criteria. **Impact C.3.7-1: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because fewer poles would be subject to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading. **Impact C.3.7-2a: LSM.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because construction of fewer poles and access roads would reduce the impact of soil erosion or loss of topsoil. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.7-2b: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because it would require maintenance of fewer poles and access roads. **Impact C.3.7-3: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because there would be less pole and access road construction that could cause or contribute to unstable soils would not be cumulatively considerable. **Impact C.3.7-4: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because there would be less pole and access road construction in expansive soils. **Impact C.3.7-5: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because there would be less pole and access road construction that could destroy a unique paleontological resource or site.	**Cumulative Criteria a.i, a.iv, and e:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to these criteria. **Impact C.3.7-1: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because reduced miles of subtransmission line would be subject to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading. **Impact C.3.7-2a: LSM.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because construction of fewer miles of subtransmission line would reduce the impact of soil erosion or loss of topsoil. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.7-2b: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because it would require maintenance of fewer miles of subtransmission line. **Impact C.3.7-3: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because there would be fewer miles of subtransmission line construction that could cause or contribute to unstable soils would not be cumulatively considerable. **Impact C.3.7-4: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because there would be fewer miles of subtransmission line construction in expansive soils. **Impact C.3.7-5: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because there would be fewer miles of subtransmission line construction that could destroy a unique paleontological resource or site.	ground disturbance in alluvium, which would result in less of a potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. **Cumulative Criteria a.i, a.iv, and e:** No Impact. Same as the Project because this alternative would not contribute to cumulative impacts related to these criteria. **Impact C.3.7-1: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because fewer poles and reduced mileage of subtransmission line would be subject to strong seismic ground shaking or seismic-related ground failure, including liquefaction and lateral spreading. **Impact C.3.7-2a: LSM.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because construction of fewer poles, less access roads, and reduced mileage of subtransmission line would reduce the impact of soil erosion or loss of topsoil. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.7-2b: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because it would require maintenance of fewer poles, access roads, and miles of subtransmission line. **Impact C.3.7-3: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because there would be less pole, access road, and subtransmission line construction that could cause or contribute to unstable soils would not be cumulatively considerable. **Impact C.3.7-4: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because there would be less pole, access road, and subtransmission line construction in expansive soils. **Impact C.3.7-5: LTS.** Less than the Project because this alternative's contribution to cumulative effects would be reduced because there would be less pole, access road, and subtransmission line construction that could destroy a unique paleontological resource or site.
Greenhouse Gas Emissions				
Impact 3.8-1: LTS. The Project would generate greenhouse gas emissions. **Impact 3.8-2: LTS.** The Project could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. **Impact C.3.8-1: LTS.** The Project impact due to the generation of greenhouse gas emissions would not be cumulatively considerable. **Impact C.3.8-2: LTS.** The Project impact associated with potential conflicts with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases would not be cumulatively considerable.	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could generate greenhouse gas emissions. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Less than the Project** **Impact 3.8-1: LTS.** Less than the Project because this alternative would require less pole and access road construction, which would generate fewer greenhouse gas emissions. **Impact 3.8-2: LTS.** Less than the Project because this alternative would require less pole and access road construction, which would generate fewer greenhouse gas emissions that could conflict with applicable plans, policies, and regulations for reducing GHG emissions. **Impact C.3.8-1: LTS.** Less than the Project because this alternative's contribution to the cumulative generation of greenhouse gas emissions would be less. **Impact C.3.8-2: LTS.** Less than the Project because this alternative's contribution to the cumulative generation of greenhouse gas emissions that could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases would be less.	**Overall: Less than the Project** **Impact 3.8-1: LTS.** Less than the Project because this alternative would require reduced miles of subtransmission line construction, which would generate fewer greenhouse gas emissions. **Impact 3.8-2: LTS.** Less than the Project because this alternative would require reduced miles of subtransmission line construction, which would generate fewer greenhouse gas emissions that could conflict with applicable plans, policies, and regulations for reducing GHG emissions. **Impact C.3.8-1: LTS.** Less than the Project because this alternative's contribution to the cumulative generation of greenhouse gas emissions would be less. **Impact C.3.8-2: LTS.** Less than the Project because this alternative's contribution to the cumulative generation of greenhouse gas emissions that could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases would be less.	**Overall: Less than the Project** **Impact 3.8-1: LTS.** Less than the Project because this alternative would require less pole, access road, and subtransmission line construction, which would generate fewer greenhouse gas emissions. **Impact 3.8-2: LTS.** Less than the Project because this alternative would require less pole, access road, and subtransmission line construction, which would generate fewer greenhouse gas emissions that could conflict with applicable plans, policies, and regulations for reducing GHG emissions. **Impact C.3.8-1: LTS.** Less than the Project because this alternative's contribution to the cumulative generation of greenhouse gas emissions would be less. **Impact C.3.8-2: LTS.** Less than the Project because this alternative's contribution to the cumulative generation of greenhouse gas emissions that could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases would be less.

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Hazards and Hazardous Materials				
Impact 3.9-1: LTS. The Project would involve the routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment. **Impact 3.9-2: LTS.** The Project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing school. **Impact 3.9-3: LTS.** The Project would create a hazard to the public or the environment by being located on and adjacent to sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. **Criterion e:** No Impact. The Project would result in no impact associated with a safety hazard relative to a public airport. **Impact 3.9-4: LSM.** Project construction could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.9-5a: LSM.** Project construction could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.9-5b: LTS.** Project operation and maintenance could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **Impact 3.9-6: LSM.** The Project could create a significant hazard to air traffic from the installation of new power lines and structures. The implementation of Mitigation Measures 3.9-6a and 3.9-6b would reduce the impact to less than significant. **Impact 3.9-7: LSM.** The Project could create a significant hazard to the public or environment through the transport of heavy materials using helicopters. The implementation of Mitigation Measure 3.9-6a would reduce the impact to less than significant. **Impact 3.9-8: LTS.** The Project could expose people to a risk of injury or death involving unexploded ordnance (UXO). **Impact 3.9-9: LTS.** The Project would not expose workers or the public to excessive shock hazards. **Impact C.3.9-1: LTS.** The Project impact of routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment would not be cumulatively considerable. **Impact C.3.9-2: LTS.** The Project impact of hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing school would not be cumulatively considerable. **Impact C.3.9-3: LTS.** The Project impact of creating a hazard to the public or the environment by being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 would not be cumulatively considerable. **Cumulative – Criterion e:** (No Impact). Given that the Project would result in no impact associated with a safety hazard relative to a public airport, there would be no Project impact that could combine with the incremental impacts of other projects to cause or contribute to a cumulative effect.	**Overall: Less than the Project** **Criteria a and b:** No Impact (less than the Project) because no transmission project–related development would occur that could involve the routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. **Criterion d:** No Impact (less than the Project) because no transmission project–related development would occur that could be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment. **Criterion e:** No Impact (same as the Project) because no transmission project–related development would occur that could a safety hazard relative to a public airport. **Criterion f:** No Impact (less than the Project) because no transmission project–related development would occur that could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. **Criterion g:** No Impact (less than the Project) because no transmission project–related development would occur that could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **Criterion h:** No Impact (less than the Project) since this alternative would not create a significant hazard to air traffic from the installation of new power lines and structure. **Criterion i:** No Impact (less than the Project) since this alternative would not create a significant hazard to the public or environment through the transport of heavy materials using helicopters. **Criterion j:** No Impact (less than the Project) since this alternative would not expose people to a significant risk of injury or death involving unexploded ordnances. **Criterion k:** No Impact (less than the Project) because no transmission project–related development would occur that could expose workers or the public to excessive shock hazards. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Less than the Project** **Impact 3.9-1: LTS.** Less than the Project because this alternative would require less pole and access road construction and maintenance that would involve the routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment. **Impact 3.9-2: LTS.** Same as the Project because this alternative would be the same within one-quarter mile of California City High School. **Impact 3.9-3: LTS.** Less than the Project because this alternative would require less pole and access road construction on and adjacent to sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and/or on or adjacent to potential previously unidentified sites. **Criterion e:** No Impact. Same as the Project because this alternative would result in no impact associated with a safety hazard relative to a public airport. **Impact 3.9-4: LSM.** Same as the Project because this alternative would result in the same amount of temporary road and/or lane closures that could physically interfere with an adopted emergency response plan or emergency evacuation plan. The implementation of Mitigation Measure 3.17-2a would be needed to reduce the impact to less than significant. **Impact 3.9-5a: LSM.** Less than the Project because this alternative would require less pole and access road construction that could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The implementation of Mitigation Measure 3.17-2a would be needed to reduce the impact to less than significant. **Impact 3.9-5b: LTS.** Less than the Project because this alternative would require less pole and access road maintenance that could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **Impact 3.9-6: LSM.** Less than the Project because this alternative would require the installation of fewer poles in the vicinity of the Edwards Air Force Base, which would reduce the significant hazard to air traffic. The implementation of Mitigation Measures 3.9-6a and 3.9-6b would reduce the impact to less than significant. **Impact 3.9-7: LSM.** Less than the Project because this alternative would require the installation of fewer poles that could require the transport of heavy materials using helicopters that would create a significant hazard to the public or environment. The implementation of Mitigation Measure 3.9-6a would be needed to reduce the impact to less than significant. **Impact 3.9-8: LTS.** Same as the Project because this alternative would result in approximately the same possibility of people encountering UXO. **Impact 3.9-9: LTS.** Same as the Project because this alternative would result in approximately the same possibility of exposing workers or the public to excessive shock hazards.	**Overall: Less than the Project** **Impact 3.9-1: LTS.** Less than the Project because this alternative would require less subtransmission line construction and maintenance that would involve the routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment. **Impact 3.9-2: LTS.** Same as the Project because this alternative would be the same within one-quarter mile of California City High School. **Impact 3.9-3: LTS.** Less than the Project because this alternative would require less subtransmission line construction on and adjacent to potential previously unidentified sites. **Criterion e:** No Impact. Same as the Project because this alternative would result in no impact associated with a safety hazard relative to a public airport. **Impact 3.9-4: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could physically interfere with an adopted emergency response plan or emergency evacuation plan. The implementation of Mitigation Measure 3.17-2a would be needed to reduce the impact to less than significant. **Impact 3.9-5a: LSM.** Less than the Project because this alternative would require less subtransmission line construction that could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The implementation of Mitigation Measure 3.17-2a would be needed to reduce the impact to less than significant. **Impact 3.9-5b: LTS.** Less than the Project because this alternative would require less conductor and subtransmission line maintenance that could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **Impact 3.9-6: LSM.** Same as the Project because this alternative would require installation of approximately the same number of poles and conductor the vicinity of the Edwards Air Force Base, which would result in the same significant hazard to air traffic. The implementation of Mitigation Measures 3.9-6a and 3.9-6b would be needed to reduce the impact to less than significant. **Impact 3.9-7: LSM.** Less than the Project because this alternative would require the installation of reduced distance of subtransmission line that could require the transport of heavy materials using helicopters that would create a significant hazard to the public or environment. The implementation of Mitigation Measure 3.9-6a would be needed to reduce the impact to less than significant. **Impact 3.9-8: LTS.** Same as the Project because this alternative would result in approximately the same possibility of people encountering UXO. **Impact 3.9-9: LTS.** Same as the Project because this alternative would result in approximately the same	**Overall: Less than the Project** **Impact 3.9-1: LTS.** Less than the Project because this alternative would require less pole, access road, and subtransmission line construction and maintenance that would involve the routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment. **Impact 3.9-2: LTS.** Same as the Project because this alternative would be the same within one-quarter mile of California City High School. **Impact 3.9-3: LTS.** Less than the Project because this alternative would require less pole, access road, and subtransmission line construction on and adjacent to sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and/or on or adjacent to potential previously unidentified sites. **Criterion e:** No Impact. Same as the Project because this alternative would result in no impact associated with a safety hazard relative to a public airport. **Impact 3.9-4: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require fewer lane closures that could physically interfere with an adopted emergency response plan or emergency evacuation plan. The implementation of Mitigation Measure 3.17-2a would be needed to reduce the impact to less than significant. **Impact 3.9-5a: LSM.** Less than the Project because this alternative would require less pole, access road, and subtransmission line construction that could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The implementation of Mitigation Measure 3.17-2a would be needed to reduce the impact to less than significant. **Impact 3.9-5b: LTS.** Less than the Project because this alternative would require less conductor and less pole, access road, and subtransmission line maintenance that could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **Impact 3.9-6: LSM.** Less than the Project because this alternative would require the installation of fewer poles in the vicinity of the Edwards Air Force Base, which would reduce the significant hazard to air traffic. The implementation of Mitigation Measures 3.9-6a and 3.9-6b would be needed to reduce the impact to less than significant. **Impact 3.9-7: LSM.** Less than the Project because this alternative would require the installation of fewer poles and reduced distance of subtransmission line that could require the transport of heavy materials using helicopters that would create a significant hazard to the public or environment. The implementation of Mitigation Measure 3.9-6a would be needed to reduce the impact to less than significant.

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Impact C.3.9-4: LSM. The Project construction impact of impairing implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan would be cumulatively considerable. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.9-5a: LSM.** The Project construction impact relative to contributing to the exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires would be cumulatively considerable. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.9-5b: LTS.** The Project operation and maintenance impact of exposing people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires would not be cumulatively considerable. **Impact C.3.9-6: LSM.** The Project significant hazard to air traffic from the installation of new power lines and structures impact would be cumulatively considerable. The implementation of Mitigation Measures 3.9-6a and 3.9-6b would reduce the impact to less than significant. **Impact C3.9-7: LSM.** The Project impact creating or contributing to a significant hazard to the public or environment through the transport of heavy materials using helicopters would be cumulatively considerable. The implementation of Mitigation Measure 3.9-6a would reduce the impact to less than significant. **Cumulative – Criterion j:** (No Impact). There would be no cumulative impact associated with the exposure of people to a significant risk of injury or death involving unexploded ordnances. **Impact C.3.9-9: LTS.** The Project impact of exposing workers or the public to excessive shock hazards would not be cumulatively considerable.		**Impact C.3.9-1: LTS.** Less than the Project because this alternative would result in less pole and access road construction and maintenance that would reduce its contribution to cumulative impacts associated with routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment would be less. **Impact C.3.9-2: LTS.** Same contribution to the cumulative impact as the Project because as with the Project, this alternative would be within one-quarter mile of an existing school and within the vicinity of a proposed cumulative project (i.e., the SCE Battery Energy Storage System). **Impact C.3.9-3: LTS.** Less than the Project because this alternative would result in less pole and access road construction and maintenance that would reduce its contribution to cumulative impacts on or adjacent to hazardous materials sites compiled pursuant to Government Code Section 65962.5 and/or on or adjacent to potential previously unidentified sites. **Cumulative – Criterion e:** (No Impact). Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.9-4: LSM.** Same as the Project because this alternative would result in the same contribution to the cumulative impact of temporary road and/or lane closures that could physically interfere with an adopted emergency response plan or emergency evacuation plan. The implementation of Mitigation Measure 3.17-2a would be needed to reduce the impact to less than significant. **Impact C.3.9-5a: LSM.** Less than the Project because this alternative's contribution to cumulative exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires during construction would be reduced due to its reduction of construction activities. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.9-5b: LTS.** Less than the Project because this alternative's contribution to cumulative exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires during operation would be reduced due to its reduction of maintenance activities. **Impact C.3.9-6: LSM.** Less than the Project because this alternative's contribution to cumulative hazard to air traffic would be reduced due to the installation of fewer poles in the vicinity of the Edwards Air Force Base. The implementation of Mitigation Measures 3.9-6a and 3.9-6b would reduce the impact to less than significant. **Impact C3.9-7: LSM.** Less than the Project because this alternative's contribution to cumulative hazards to the public or environment would be less due to the installation of fewer poles that could require the transport of heavy materials using helicopters. The implementation of Mitigation Measure 3.9-6a would be needed to reduce the impact to less than significant. **Cumulative – Criterion j:** (No Impact). Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.9-9: LTS.** Same as the Project because this alternative's contribution to cumulative shock hazards impacts would be the same.	possibility of exposing workers or the public to excessive shock hazards. **Impact C.3.9-1: LTS.** Less than the Project because this alternative would result in less subtransmission line construction and maintenance that would reduce its contribution to cumulative impacts associated with routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment would be less. **Impact C.3.9-2: LTS.** Same contribution to the cumulative impact as the Project because as with the Project, this alternative would be within one-quarter mile of an existing school and within the vicinity of a proposed cumulative project (i.e., the SCE Battery Energy Storage System). **Impact C.3.9-3: LTS.** Less than the Project because this alternative would result in less subtransmission line construction and maintenance that would reduce its contribution to cumulative impacts on or adjacent to potential previously unidentified sites. **Cumulative – Criterion e:** (No Impact). Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.9-4: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could physically interfere with an adopted emergency response plan or emergency evacuation plan, which would reduce its contribution to the cumulative impact. The implementation of Mitigation Measure 3.17-2a would be needed to reduce the impact to less than significant. **Impact C.3.9-5a: LSM.** Less than the Project because this alternative's contribution to cumulative exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires during construction would be reduced due to its reduction of construction activities. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.9-5b: LTS.** Less than the Project because this alternative's contribution to cumulative exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires during operation would be reduced due to its reduction of maintenance activities and reduced length of subtransmission line. **Impact C.3.9-6: LSM.** Same as the Project because this alternative's contribution to cumulative hazard to air traffic would be the same due to the installation of the same number of poles in the vicinity of the Edwards Air Force Base. The implementation of Mitigation Measures 3.9-6a and 3.9-6b would reduce the impact to less than significant. **Impact C3.9-7: LSM.** Less than the Project because this alternative's contribution to cumulative hazards to the public or environment would be less due to the installation of fewer miles of subtransmission line that could require the transport of heavy materials using helicopters. The implementation of Mitigation Measure 3.9-6a would be needed to reduce the impact to less than significant.	**Impact 3.9-8: LTS.** Same as the Project because this alternative would result in approximately the same possibility of people encountering UXO. **Impact 3.9-9: LTS.** Same as the Project because this alternative would result in approximately the same possibility of exposing workers or the public to excessive shock hazards. **Impact C.3.9-1: LTS.** Less than the Project because this alternative would result in less pole, access road, and subtransmission line construction and maintenance that would reduce its contribution to cumulative impacts associated with routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment would be less. **Impact C.3.9-2: LTS.** Same contribution to the cumulative impact as the Project because as with the Project, this alternative would be within one-quarter mile of an existing school and within the vicinity of a proposed cumulative project (i.e., the SCE Battery Energy Storage System). **Impact C.3.9-3: LTS.** Less than the Project because this alternative would result in less pole, access road, and subtransmission line construction and maintenance that would reduce its contribution to cumulative impacts on or adjacent to hazardous materials sites compiled pursuant to Government Code Section 65962.5 and/or on or adjacent to potential previously unidentified sites. **Cumulative – Criterion e:** (No Impact). Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.9-4: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could physically interfere with an adopted emergency response plan or emergency evacuation plan, which would reduce its contribution to the cumulative impact. The implementation of Mitigation Measure 3.17-2a would be needed to reduce the impact to less than significant. **Impact C.3.9-5a: LSM.** Less than the Project because this alternative's contribution to cumulative exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires during construction would be reduced due to its reduction of construction activities. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.9-5b: LTS.** Less than the Project because this alternative's contribution to cumulative exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires during operation would be reduced due to its reduction of maintenance activities and reduced length of subtransmission line. **Impact C.3.9-6: LSM. Impact C.3.9-6: LSM.** Less than the Project because this alternative's contribution to cumulative hazard to air traffic would be reduced due to the installation of fewer poles in the vicinity of the Edwards Air Force Base. The implementation of Mitigation Measures 3.9-6a and 3.9-6b would reduce the impact to less than significant.

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
			Cumulative – Criterion j: (No Impact). Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.9-9: LTS.** Same as the Project because this alternative's contribution to cumulative shock hazards impacts would be the same.	**Impact C3.9-7: LSM.** Less than the Project because this alternative's contribution to cumulative hazards to the public or environment would be less due to the installation of fewer poles and reduced miles of subtransmission line that could require the transport of heavy materials using helicopters. The implementation of Mitigation Measure 3.9-6a would be needed to reduce the impact to less than significant. **Cumulative – Criterion j:** (No Impact). Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.9-9: LTS.** Same as the Project because this alternative's contribution to cumulative shock hazards impacts would be the same.
Hydrology and Water Quality				
Impact 3.10-1a: LSM Project construction could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact 3.10-1b: LTS.** Project operation could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. **Impact 3.10-2: LTS.** The Project could decrease groundwater supplies or interfere with groundwater recharge. **Impact 3.10-3a: LSM** Project construction of subtransmission lines and Cal City Substation improvements would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact 3.10-3b: LTS.** Project operation of subtransmission lines and Cal City Substation improvements would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. **Impact 3.10-4a: LSM.** The Project subtransmission lines and Cal City Substation improvements would be located in a flood hazard zone which would present a risk of release of pollutants due to inundation during flooding. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact 3.10-4b: LTS.** The Holgate Switchyard located in a flood hazard zone would risk release of pollutants due to inundation during flooding. **Impact 3.10-5: LSM.** The Project could conflict with or obstruct implementation of a water quality control plan. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.10-1a: LSM.** The Project construction impact on water quality standards, waste discharge requirements, or other Project degradation of surface or ground water quality would be cumulatively considerable. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.10-1b: LTS.** The Project operation impact on water quality standards, waste discharge requirements, or other	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could substantially decrease groundwater supplies or interfere substantially with groundwater recharge. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could substantially alter the existing drainage pattern of the site or area, or create or contribute runoff water which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. **Criterion d:** No Impact (less than the Project) because no transmission project–related development would occur that would be located in a flood hazard zone and risk the release of pollutants due to Project inundation. **Criterion e:** No Impact (less than the Project) because no transmission project–related development would occur that could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. **Cumulative –** No Impact (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Less than the Project** **Impact 3.10-1a: LSM.** Less than the Project because this alternative would include fewer poles and reduced length of access road that would require less construction ground disturbance that could cause a violation of water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.10-1b: LTS.** Less than the Project because this alternative would require maintenance of fewer poles and access roads that could cause a violation of water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. **Impact 3.10-2: LTS.** Less than the Project because this alternative would include construction and operation of fewer poles and reduced length of access roads that could decrease groundwater supplies or interfere with groundwater recharge. **Impact 3.10-3a: LSM.** Less than the Project because this alternative would include fewer poles and reduced length of access road, construction of which would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.10-3b: LTS.** Less than the Project because this alternative would include fewer poles and reduced length of access road, operation of which would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. **Impact 3.10-4a: LSM.** Less than the Project because this alternative would include fewer poles and reduced length of access road in a flood hazard zone which would reduce the risk of release of pollutants due to inundation during flooding. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant.	**Overall: Less than the Project** **Impact 3.10-1a: LSM.** Less than the Project because this alternative would include fewer miles of subtransmission line that would require less construction ground disturbance that could cause a violation of water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.10-1b: LTS.** Less than the Project because this alternative would require maintenance of fewer miles of subtransmission line that could cause a violation of water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. **Impact 3.10-2: LTS.** Less than the Project because this alternative would include construction and operation of fewer miles of subtransmission line that could decrease groundwater supplies or interfere with groundwater recharge. **Impact 3.10-3a: LSM.** Less than the Project because this alternative would include fewer miles of subtransmission line, construction of which would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.10-3b: LTS.** Less than the Project because this alternative would include fewer miles of subtransmission line, operation of which would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. **Impact 3.10-4a: LSM.** Less than the Project because this alternative would include a shorter distance of subtransmission line in a flood hazard zone, which would reduce the risk of release of pollutants due to inundation during flooding. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant.	**Overall: Less than the Project** **Impact 3.10-1a: LSM.** Less than the Project because this alternative would include fewer poles, shorter distance of access roads, and reduced miles of subtransmission line that would require less construction ground disturbance that could cause a violation of water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.10-1b: LTS.** Less than the Project because this alternative would require maintenance of fewer poles, access roads, and miles of subtransmission line that could cause a violation of water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. **Impact 3.10-2: LTS.** Less than the Project because this alternative would include construction and operation of fewer poles, reduced length of access roads, and fewer miles of subtransmission line that could decrease groundwater supplies or interfere with groundwater recharge. **Impact 3.10-3a: LSM.** Less than the Project because this alternative would include fewer poles, shorter access roads, and fewer miles of subtransmission line, construction of which would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.10-3b: LTS.** Less than the Project because this alternative would include fewer poles, shorter access roads, and fewer miles of subtransmission line, operation of which would alter drainage patterns and result in erosion and runoff in a manner which could exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. **Impact 3.10-4a: LSM.** Less than the Project because this alternative would include fewer poles, shorter access roads, and a shorter distance of subtransmission line in a flood hazard zone, which would reduce the risk of release of pollutants due to inundation during flooding. The

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
degradation of surface or ground water quality would not be cumulatively considerable. **Impact C.3.10-2: LTS.** The Project impact on groundwater supplies or interference with groundwater recharge would not be cumulatively considerable. **Impact C.3.10-3a: LSM.** The Project construction impact on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would be cumulatively considerable. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.10-3b: LTS.** The Project operation impact on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would not be cumulatively considerable. **Impact C.3.10-4a: LSM.** The Project impact of risk of release of pollutants due to inundation during flooding at the subtransmission lines and Cal City Substation improvements would be cumulatively considerable. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.10-4b: LTS.** The Project impact of risk of release of pollutants due to inundation during flooding at Holgate Switchyard would not be cumulatively considerable. **Impact C.3.10-5: LSM.** The Project impact of conflicting with or obstructing implementation of a water quality control plan would be cumulatively considerable. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant.		**Impact 3.10-4b: LTS.** Same as the Project because this alternative would include the same improvements at Holgate Switchyard in a flood hazard zone that would risk release of pollutants due to inundation during flooding. **Impact 3.10-5: LSM.** Less than the Project because this alternative would include construction of fewer poles and reduced length of access road that could conflict with or obstruct implementation of a water quality control plan. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-1a: LSM.** Less than the Project because this alternative's contribution to cumulative construction impacts on water quality standards, waste discharge requirements, or other degradation to surface or ground water quality would be reduced because it would include less construction of poles and access roads that would affect water quality. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-1b: LTS.** Less than the Project because this alternative's contribution to cumulative operational impacts on water quality standards, waste discharge requirements, or other degradation to surface or ground water quality would be reduced because it would include less maintenance of poles and access roads that would affect water quality. **Impact C.3.10-2: LTS.** Less than the Project because this alternative's contribution to cumulative impacts on groundwater supplies or interference with groundwater recharge would be reduced because it would include less construction and maintenance of poles and access roads that would affect groundwater. **Impact C.3.10-3a: LSM.** Less than the Project because this alternative's contribution to cumulative construction impacts on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would be reduced because it would include less construction of poles and access roads that would affect drainage patterns. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-3b: LTS.** Less than the Project because this alternative's contribution to cumulative operational impacts on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would be reduced because it would include less maintenance of poles and access roads that would affect drainage patterns. **Impact C.3.10-4a: LSM.** Less than the Project because this alternative's contribution to cumulative impacts in a flood hazard zone would be reduced because it would include less construction and operation of poles and access roads that could cause the release of pollutants due to inundation during flooding. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-4b: LTS.** Same as the Project because this alternative's contribution to the cumulative flood hazard zone impact due to improvements at Holgate Switchyard that would risk release of pollutants due to	**Impact 3.10-4b: LTS.** Same as the Project because this alternative would include the same improvements at Holgate Switchyard in a flood hazard zone that would risk release of pollutants due to inundation during flooding. **Impact 3.10-5: LSM.** Less than the Project because this alternative would include construction of a shorter distance of subtransmission line that could conflict with or obstruct implementation of a water quality control plan. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-1a: LSM.** Less than the Project because this alternative's contribution to cumulative construction impacts on water quality standards, waste discharge requirements, or other degradation to surface or ground water quality would be reduced because it would include less construction of subtransmission line that would affect water quality. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-1b: LTS.** Less than the Project because this alternative's contribution to cumulative operational impacts on water quality standards, waste discharge requirements, or other degradation to surface or ground water quality would be reduced because it would include less maintenance of subtransmission line that would affect water quality. **Impact C.3.10-2: LTS.** Less than the Project because this alternative's contribution to cumulative impacts on groundwater supplies or interference with groundwater recharge would be reduced because it would include less construction and maintenance of subtransmission line that would affect groundwater. **Impact C.3.10-3a: LSM.** Less than the Project because this alternative's contribution to cumulative construction impacts on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would be reduced because it would include less construction of subtransmission line that would affect drainage patterns. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-3b: LTS.** Less than the Project because this alternative's contribution to cumulative operational impacts on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would be reduced because it would include less maintenance of subtransmission line that would affect drainage patterns. **Impact C.3.10-4a: LSM.** Less than the Project because this alternative's contribution to cumulative impacts in a flood hazard zone would be reduced because it would include less construction and operation of subtransmission line that could cause the release of pollutants due to inundation during flooding. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-4b: LTS.** Same as the Project because this alternative's contribution to the cumulative flood hazard zone impact due to improvements at Holgate Switchyard that would risk release of pollutants due to inundation during flooding would be the same as the Project.	implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact 3.10-4b: LTS.** Same as the Project because this alternative would include the same improvements at Holgate Switchyard in a flood hazard zone that would risk release of pollutants due to inundation during flooding. **Impact 3.10-5: LSM.** Less than the Project because this alternative would include construction of fewer poles, shorter access roads, and a shorter distance of subtransmission line that could conflict with or obstruct implementation of a water quality control plan. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-1a: LSM.** Less than the Project because this alternative's contribution to cumulative construction impacts on water quality standards, waste discharge requirements, or other degradation to surface or ground water quality would be reduced because it would include less construction of poles, access roads, and subtransmission line that would affect water quality. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-1b: LTS.** Less than the Project because this alternative's contribution to cumulative operational impacts on water quality standards, waste discharge requirements, or other degradation to surface or ground water quality would be reduced because it would include less maintenance of poles, access roads, and subtransmission line that would affect water quality. **Impact C.3.10-2: LTS.** Less than the Project because this alternative's contribution to cumulative impacts on groundwater supplies or interference with groundwater recharge would be reduced because it would include less construction and maintenance of poles, access roads, and subtransmission line that would affect groundwater. **Impact C.3.10-3a: LSM.** Less than the Project because this alternative's contribution to cumulative construction impacts on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would be reduced because it would include less construction of poles, access roads, and subtransmission line that would affect drainage patterns. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-3b: LTS.** Less than the Project because this alternative's contribution to cumulative operational impacts on drainage patterns that could result in erosion and runoff or provide substantial additional sources of polluted runoff; or impede or redirect flood flows would be reduced because it would include less maintenance of poles, access roads, and subtransmission line that would affect drainage patterns. **Impact C.3.10-4a: LSM.** Less than the Project because this alternative's contribution to cumulative impacts in a flood hazard zone would be reduced because it would include less construction and operation of poles, access roads, and subtransmission line that could cause the release of pollutants due to inundation during flooding. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant. **Impact C.3.10-4b: LTS.** Same as the Project because this alternative's contribution to the cumulative flood

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
		inundation during flooding would be the same as the Project. **Impact C.3.10-5: LSM.** Less than the Project because this alternative's contribution to cumulative impacts on a water quality control plan would be reduced because it would include construction of fewer poles and reduced length of access road that could affect water quality. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant.	**Impact C.3.10-5: LSM.** Less than the Project because this alternative's contribution to cumulative impacts on a water quality control plan would be reduced because it would include construction of less subtransmission line that could affect water quality. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant.	hazard zone impact due to improvements at Holgate Switchyard that would risk release of pollutants due to inundation during flooding would be the same as the Project. **Impact C.3.10-5: LSM.** Less than the Project because this alternative's contribution to cumulative impacts on a water quality control plan would be reduced because it would include construction of fewer poles, reduced length of access road, and less subtransmission line that could affect water quality. The implementation of Mitigation Measure 3.10-1a would be needed to reduce the impact to less than significant.
Land Use and Planning				
Criterion a: No Impact. The Project would not physically divide an established community. **Criterion b:** No Impact. No local land use plans, policies, or regulations requiring discretionary approval would apply to the Project, therefore, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. **Cumulative:** No Impact. The Project would not contribute to any cumulative impacts.	**Overall: Same as the Project** **Criterion a:** No Impact (same as the Project) because no transmission project–related development would occur that could physically divide an established community. **Criterion b:** No Impact (same as the Project) because no transmission project–related development would occur that could cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. **Cumulative –** No Impacts (same as the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Overall: Same as the Project** **Criteria a and b:** No Impact. Same as the Project because this alternative would have no impact on land use and planning. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Criteria a and b:** No Impact. Same as the Project because this alternative would have no impact on land use and planning. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Criteria a and b:** No Impact. Same as the Project because this alternative would have no impact on land use and planning. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could cause or contribute to cumulative impacts.
Mineral Resources				
Criterion a: No Impact. No oil wells would be affected by any Project activities. **Criterion b:** No Impact. The Project would not have an impact on any mineral resource recovery sites. **Cumulative:** No Impact. The Project would not contribute to any cumulative impacts.	**Overall: Same as the Project** **Criterion a:** No Impact (same as the Project) because no transmission project–related development would occur that could affect oil wells. **Criterion b:** No Impact (same as the Project) because no transmission project–related development would occur that could affect a mineral resource recovery site. **Cumulative –** No Impacts (same as the Project) because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Criteria a and b:** No Impact. Same as the Project because this alternative would have no impact on mineral resources. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Criteria a and b:** No Impact. Same as the Project because this alternative would have no impact on mineral resources. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Criteria a and b:** No Impact. Same as the Project because this alternative would have no impact on mineral resources. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could cause or contribute to cumulative impacts.
Noise and Acoustics				
Impact 3.13-1: SU. Project construction activities and helicopter O&M activities would generate a temporary increase in ambient noise levels that would exceed the City of California City Noise Ordinance. The implementation of Mitigation Measures 3.13-1a and 3.13-1b would reduce the severity of the impact, but not to less than significant. **Impact 3.13-2: LTS.** Project construction activities would generate a temporary increase in ambient noise levels in unincorporated jurisdictions. **Impact 3.13-3: LTS.** The Project would generate groundborne vibration or groundborne noise levels. **Criterion c:** No Impact**.** The Project would not expose people working in the Project area to excessive airport noise levels. **Impact C.3.13-1: LSM.** The Project construction activities and helicopter O&M activities impact associated with the generation of a temporary increase in ambient noise levels that would exceed the City of California City Noise Ordinance would be cumulatively considerable. The implementation of Mitigation	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could generate groundborne vibration or groundborne noise levels. **Criterion c:** No Impact (same as the Project) because no transmission project–related development would occur that could expose people working in the Project area to excessive airport noise levels. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Impact 3.13-1: SU.** Same as the Project because this alternative has the same alignment in near the closest sensitive receptors in the City of California City as the Project. The implementation of Mitigation Measures 3.13-1a and 3.13-1b would reduce the impact, but not to less than significant. **Impact 3.13-2: LTS.** Same as the Project because this alternative has the same alignment near the closest sensitive receptors in unincorporated jurisdictions as the Project. **Impact 3.13-3: LTS.** Same as the Project because this alternative has the same alignment near the closest off-site buildings that would be affected by vibration. **Criterion c:** No Impact. Same as the Project because this alternative would have no impact regarding airport noise levels. **Impact C.3.13-1: LSM.** Same as the Project because this alternative's contribution to the cumulative construction	**Overall: Same as the Project** **Impact 3.13-1: SU.** Same as the Project because this alternative has the same alignment in near the closest sensitive receptors in the City of California City as the Project. The implementation of Mitigation Measures 3.13-1a and 3.13-1b would reduce the impact, but not to less than significant. **Impact 3.13-2: LTS.** Same as the Project because this alternative has the same alignment near the closest sensitive receptors in unincorporated jurisdictions as the Project. **Impact 3.13-3: LTS.** Same as the Project because this alternative has the same alignment near the closest off-site buildings that would be affected by vibration. **Criterion c:** No Impact. Same as the Project because this alternative would have no impact regarding airport noise levels. **Impact C.3.13-1: LSM.** Same as the Project because this alternative's contribution to the cumulative construction	**Overall: Same as the Project** **Impact 3.13-1: SU.** Same as the Project because this alternative has the same alignment in near the closest sensitive receptors in the City of California City as the Project. The implementation of Mitigation Measures 3.13-1a and 3.13-1b would reduce the impact, but not to less than significant. **Impact 3.13-2: LTS.** Same as the Project because this alternative has the same alignment near the closest sensitive receptors in unincorporated jurisdictions as the Project. **Impact 3.13-3: LTS.** Same as the Project because this alternative has the same alignment near the closest off-site buildings that would be affected by vibration. **Criterion c:** No Impact. Same as the Project because this alternative would have no impact regarding airport noise levels. **Impact C.3.13-1: LSM.** Same as the Project because this alternative's contribution to the cumulative construction

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Measure 3.13-1b would reduce the impact to less than significant. **Impact C.3.13-2: LTS.** The Project construction impact of generating a temporary increase in ambient noise levels in unincorporated jurisdictions would not be cumulatively considerable. **Impact C.3.13-3: LTS.** The Project impact of groundborne vibration or groundborne noise levels would not be cumulatively considerable. **Cumulative – Criterion c:** The Project would not cause or contribute to any cumulative impacts related to this criterion.		noise impact in City of California City would be the same as the Project. The implementation of Mitigation Measure 3.13-1b would be needed to reduce the impact to less than significant. **Impact C.3.13-2: LTS.** Same as the Project because this alternative's contribution to the cumulative construction noise impact in unincorporated jurisdictions would be the same as the Project. **Impact C.3.13-3: LTS.** Same as the Project because this alternative's contribution to the cumulative construction vibration impact would be the same as the Project. **Cumulative – Criterion c:** No Impact. Same as the Project because this alternative would not result in airport noise impacts that could cause or contribute to cumulative impacts.	noise impact in City of California City would be the same as the Project. The implementation of Mitigation Measure 3.13-1b would be needed to reduce the impact to less than significant. **Impact C.3.13-2: LTS.** Same as the Project because this alternative's contribution to the cumulative construction noise impact in unincorporated jurisdictions would be the same as the Project. **Impact C.3.13-3: LTS.** Same as the Project because this alternative's contribution to the cumulative construction vibration impact would be the same as the Project. **Cumulative – Criterion c:** No Impact. Same as the Project because this alternative would not result in airport noise impacts that could cause or contribute to cumulative impacts.	noise impact in City of California City would be the same as the Project. The implementation of Mitigation Measure 3.13-1b would be needed to reduce the impact to less than significant. **Impact C.3.13-2: LTS.** Same as the Project because this alternative's contribution to the cumulative construction noise impact in unincorporated jurisdictions would be the same as the Project. **Impact C.3.13-3: LTS.** Same as the Project because this alternative's contribution to the cumulative construction vibration impact would be the same as the Project. **Cumulative – Criterion c:** No Impact. Same as the Project because this alternative would not result in airport noise impacts that could cause or contribute to cumulative impacts.
Population and Housing				
Impact 3.14-1: LTS. The Project could induce unplanned population growth. **Criterion b:** No Impact. The Project would not displace substantial numbers of existing people or housing. **Impact C.3.14-1: LTS.** The Project impact of unplanned population growth would not be cumulatively considerable. **Cumulative – Criterion b:** The Project would not cause or contribute to any cumulative impacts related to this criterion.	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could induce substantial unplanned population growth in an area. **Criterion b:** No Impact (same as the Project) because no transmission project-related development would occur that could displace substantial numbers of existing people or housing. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Impact 3.14 1: LTS.** Same as the Project because this alternative would have approximately the same short-term lodging demands and other growth inducing factors as the Project. **Criterion b:** No Impact. Same as the Project because this alternative would not displace people or housing. **Impact C.3.14-1: LTS.** Same as the Project because this alternative's contribution to the cumulative unplanned population growth impact would be the same as the Project. **Cumulative – Criterion b:** No Impact. Same as the Project because this alternative would not result in displaced people or housing impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Impact 3.14 1: LTS.** Same as the Project because this alternative would have approximately the same short-term lodging demands and other growth inducing factors as the Project. **Criterion b:** No Impact. Same as the Project because this alternative would not displace people or housing. **Impact C.3.14-1: LTS.** Same as the Project because this alternative's contribution to the cumulative unplanned population growth impact would be the same as the Project. **Cumulative – Criterion b:** No Impact. Same as the Project because this alternative would not result in displaced people or housing impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Impact 3.14 1: LTS.** Same as the Project because this alternative would have approximately the same short-term lodging demands and other growth inducing factors as the Project. **Criterion b:** No Impact. Same as the Project because this alternative would not displace people or housing. **Impact C.3.14-1: LTS.** Same as the Project because this alternative's contribution to the cumulative unplanned population growth impact would be the same as the Project. **Cumulative – Criterion b:** No Impact. Same as the Project because this alternative would not result in displaced people or housing impacts that could cause or contribute to cumulative impacts.
Public Services				
Criterion a: No Impact. Construction and operation of the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities; nor would it create the need for new or physically altered governmental facilities. **Cumulative – Criterion a:** No Impact. The Project would not cause or contribute to any cumulative impacts related to this criterion.	**Overall: Same as the Project** **Criterion a:** No Impact (same as the Project) because no transmission project-related development would occur that could result in a substantial adverse physical impact associated with the provision of new or physically altered governmental facilities or create the need for new or physically altered governmental facilities. **Cumulative – Criterion a:** No Impact (same as the Project) because this alternative would not cause or contribute to any cumulative impacts related to this criterion.	**Overall: Same as the Project** **Criterion a:** No Impact. Same as the Project because this alternative would have no impact on public services. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Criterion a:** No Impact. Same as the Project because this alternative would have no impact on public services. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	**Overall: Same as the Project** **Criterion a:** No Impact. Same as the Project because this alternative would have no impact on public services. **Cumulative –** No Impact. Same as the Project because this alternative would not result in impacts that could cause or contribute to cumulative impacts.
Recreation				
Impact 3.16-1: LTS. Project construction could increase the use of existing neighborhood and regional parks or other recreational facilities. **Criterion b**: No Impact. The Project would not include recreational facilities or require the construction or expansion of recreational facilities. **Impact 3.16-2: LTS.** The Project would reduce or prevent access to designated recreation facilities or areas. **Impact 3.16-3a: LTS.** Project construction would alter the character of a recreational area by reducing the scenic characteristics that contribute to the value of recreational facilities or areas.	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could 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. **Criterion b:** No Impact (same as the Project) because no transmission project-related development would occur that could include recreational facilities or require the construction or expansion of recreational facilities. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur	**Overall: Less than the Project** **Impact 3.16-1: LTS.** Same as the Project because this alternative would result in approximately the same short-term demand for use of parks and other recreational facilities as the Project. **Criterion b**: No Impact. Same as the Project because this alternative would not include recreational facilities. **Impact 3.16-2: LTS.** Less than the Project because this alternative would include fewer poles and reduced length of access road in the Red Mountain Special Recreation Management Area that could reduce or prevent access during construction.	**Overall: Less than the Project** **Impact 3.16-1: LTS.** Same as the Project because this alternative would result in approximately the same short-term demand for use of parks and other recreational facilities as the Project. **Criterion b**: No Impact. Same as the Project because this alternative would not include recreational facilities. **Impact 3.16-2: LTS.** Less than the Project because this alternative would avoid the El Paso/Rand Special Recreation Management Area that could reduce or prevent access during construction.	**Overall: Less than the Project** **Impact 3.16-1: LTS.** Same as the Project because this alternative would result in approximately the same short-term demand for use of parks and other recreational facilities as the Project. **Criterion b**: No Impact. Same as the Project because this alternative would not include recreational facilities. **Impact 3.16-2: LTS.** Less than the Project because this alternative would avoid the El Paso/Rand Special Recreation Management Area and reduce activities in the Red Mountain Special Recreation

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Impact 3.16-3b: SU. Project operation would substantially alter the character of a recreational area by reducing the scenic characteristics that contribute to the value of recreational facilities or areas. The implementation of Mitigation Measure 3.1-1 would reduce the severity of the impact, but not to less than significant. **Impact 3.16-4: LTS.** The Project could damage recreational trails or facilities. **Impact C.3.16-1: LTS.** The Project construction impact of increasing the use of existing neighborhood and regional parks or other recreational facilities would not be cumulatively considerable. **Cumulative – Criterion b:** No Impact. The Project would not cause or contribute to any cumulative impacts related to this criterion. **Impact C.3.16-2: LTS.** The Project impact of reducing or preventing access to designated recreation facilities and areas during construction or operation would not be cumulatively considerable. **Impact C.3.16-3: LTS.** The Project impact of alteration of the character of a recreational area through reduction of scenic characteristics that contribute to the value of recreational facilities or areas would not be cumulatively considerable. **Impact C.3.16-4: LTS.** The Project impact of damaging recreational trails or facilities would not be cumulatively considerable.	that could reduce or prevent access to a designated recreation facility or area. **Criterion d:** No Impact (less than the Project) because no transmission project–related development would occur that could substantially change the character of a recreational area. **Criterion e:** No Impact (less than the Project) because no transmission project–related development would occur that could damage recreational trails or facilities. **Cumulative –** No Impact (less than the Project) because this alternative would not result in impacts that could cause or contribute to cumulative impacts on recreation.	**Impact 3.16-3a: LTS.** Less than the Project because this alternative would include construction of fewer poles and access road that would reduce the alteration of character of the recreational area. **Impact 3.16-3b: SU.** Same as the Project because this alternative has the same alignment as the Project near OHV designated recreational areas, facilities, and routes. The implementation of Mitigation Measure 3.1-1 would reduce the impact, but not to less than significant. **Impact 3.16-4: LTS.** Same as the Project because this alternative has the same alignment as the Project near recreational trails and facilities that could be damaged. **Impact C.3.16-1: LTS.** Same as the Project because this alternative's contribution to the cumulative short-term demand for use of parks and other recreational facilities impact would be the same as the Project. **Cumulative – Criterion b:** No Impact. Same as the Project because this alternative would not result in an impact that could cause or contribute to cumulative impacts. **Impact C.3.16-2: LTS.** Less than the Project because this alternative's contribution to the cumulative recreational access impact would be reduced because it would include construction of fewer poles and shorter access roads that could affect recreational facility access compared to the Project. **Impact C.3.16-3: LTS.** Same as the Project because this alternative's contribution to the cumulative impact on the value of the recreational facilities would be the same as the Project. **Impact C.3.16-4: LTS.** Same as the Project because this alternative's contribution to the cumulative impact on the equestrian trail would be the same as the Project.	**Impact 3.16-3a: LTS.** Less than the Project because this alternative would include less construction activities that would reduce the alteration of character of the recreational area. **Impact 3.16-3b: LTS.** Less than the Project because this alternative would avoid the OHV designated recreational areas, facilities, and routes west of Borax Bill Park. **Impact 3.16-4: LTS.** Less than the Project because this alternative has less alignment near recreational trails and facilities than the Project that could be damaged. **Impact C.3.16-1: LTS.** Same as the Project because this alternative's contribution to the cumulative short-term demand for use of parks and other recreational facilities impact would be the same as the Project. **Cumulative – Criterion b:** No Impact. Same as the Project because this alternative would not result in an impact relative to this criterion that could cause or contribute to cumulative impacts. **Impact C.3.16-2: LTS.** Less than the Project because this alternative's contribution to the cumulative recreational access impact would be reduced because it would include construction of less subtransmission line that could affect recreational facility access compared to the Project. **Impact C.3.16-3: LTS.** Less than the Project because this alternative's contribution to the cumulative impact on the value of the recreational facilities would be reduced compared to the Project because it would include less subtransmission parallel to the equestrian trail. **Impact C.3.16-4: LTS.** Less than the Project because this alternative's contribution to the cumulative impact on the equestrian trail would be reduced compared to the Project because it would include less subtransmission parallel to the trail.	Management Area that could reduce or prevent access during construction. **Impact 3.16-3a: LTS.** Less than the Project because this alternative would include fewer construction activities that would reduce the alteration of character of the recreational area. **Impact 3.16-3b: LTS.** Less than the Project because this alternative would avoid the OHV designated recreational areas, facilities, and routes west of Borax Bill Park. **Impact 3.16-4: LTS.** Less than the Project because this alternative would result in reduced alignment near recreational trails and facilities than the Project that could be damaged. **Impact C.3.16-1: LTS.** Same as the Project because this alternative's contribution to the cumulative short-term demand for use of parks and other recreational facilities impact would be the same as the Project. **Cumulative – Criterion b:** No Impact. Same as the Project because this alternative would not result in an impact relative to this criterion that could cause or contribute to cumulative impacts. **Impact C.3.16-2: LTS.** Less than the Project because this alternative's contribution to the cumulative recreational access impact would be reduced because it would include construction of less subtransmission line that could affect recreational facility access compared to the Project. **Impact C.3.16-3: LTS.** Less than the Project because this alternative's contribution to the cumulative impact on the value of the recreational facilities would be reduced compared to the Project because it would include less subtransmission parallel to the equestrian trail. **Impact C.3.16-4: LTS.** Less than the Project because this alternative's contribution to the cumulative impact on the equestrian trail would be reduced compared to the Project because it would include less subtransmission parallel to the trail.
Transportation				
Criterion a: No Impact. The Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system. **Impact 3.17-1: LTS.** Project operation and maintenance would result in an increase in daily vehicle miles traveled. **Impact 3.17-2a: LSM.** Project construction could substantially increase hazards due to a geometric design feature. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-2b: LTS.** Project operation and maintenance would not substantially increase hazards due to a geometric design feature. **Impact 3.17-3: LSM.** Project construction could result in inadequate emergency access. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-4a: LSM.** Project construction could create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant.	**Overall: Less than the Project** **Criterion a**: No Impact (same as the Project) because no transmission project-related development would occur that could conflict with a program, plan, ordinance, or policy addressing the circulation system. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could substantially increase hazards due to a geometric design feature. **Criterion d:** No Impact (less than the Project) because no transmission project–related development would occur that could result in inadequate emergency access. **Criterion e:** No Impact (less than the Project) because no transmission project–related development would occur that could create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations.	**Overall: Same as the Project** **Criterion a**: No Impact. Same as the Project because this alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system. **Impact 3.17-1: LTS.** Same as the Project because this alternative would result in approximately the same amount of operational daily vehicle miles traveled as the Project. **Impact 3.17-2a: LSM.** Same as the Project because this alternative would result in the same amount of temporary road or lane closures as the Project that could increase hazards. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-2b: LTS.** Same as the Project because this alternative would result in the same amount poles immediately adjacent (i.e., within 100 feet) to a public roadway as the Project that could increase operational road hazards. **Impact 3.17-3: LSM.** Same as the Project because this alternative would result in the same amount of temporary road and/or lane closures that could result in inadequate	**Overall: Less than the Project** **Criterion a**: No Impact. Same as the Project because this alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system. **Impact 3.17-1: LTS.** Same as the Project because this alternative would result in approximately the same amount of operational daily vehicle miles traveled as the Project. **Impact 3.17-2a: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could increase hazards. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-2b: LTS.** Less than the Project because this alternative would result in a reduced amount of subtransmission line poles immediately adjacent to public roads that could increase hazards. **Impact 3.17-3: LSM.** Less than the Project because this alternative would result in a reduced distance of	**Overall: Less than the Project** **Criterion a**: No Impact. Same as the Project because this alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system. **Impact 3.17-1: LTS.** Same as the Project because this alternative would result in approximately the same amount of operational daily vehicle miles traveled as the Project. **Impact 3.17-2a: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could increase hazards. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-2b: LTS.** Less than the Project because this alternative would result in a reduced amount of subtransmission line poles immediately adjacent to public roads that could increase hazards. **Impact 3.17-3: LSM.** Less than the Project because this alternative would result in a reduced distance of

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Impact 3.17-4b: LTS. Project operations could create potentially hazardous conditions for people driving. **Impact 3.17-5: LSM.** Project construction would interfere with walking or bicycling accessibility. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-6: LSM.** Project construction could substantially delay public transit. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Cumulative – Criterion a**: No Impact. The Project would not cause or contribute to any impacts related to this criterion. **Impact C.3.17-1: LTS.** The Project operation and maintenance daily vehicle miles traveled impact would not be cumulatively considerable. **Impact C.3.17-2a: LSM.** The Project construction increased hazards due to a geometric design feature impact would be cumulatively considerable. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-2b: LTS.** The Project operational hazards impact due to a geometric design feature would not be cumulatively considerable. **Impact C3.17-3: LSM.** The Project construction emergency access impact would be cumulatively considerable. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-4a: LSM.** The Project construction hazardous conditions for people walking, bicycling, or driving, and for public transit operations impact would be cumulatively considerable. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-4b: LTS.** The Project operations hazardous conditions for people driving impact would not be cumulatively considerable. **Impact C.3.17-5: LSM.** The Project construction interference to walking or bicycling accessibility impact would be cumulatively considerable. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-6: LSM** The Project construction impact delaying public transit would be cumulatively considerable. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant.	**Criterion f:** No Impact (less than the Project) because no transmission project–related development would occur that could interfere with walking or bicycling accessibility. **Criterion g:** No Impact (less than the Project) because no transmission project–related development would occur that could substantially delay public transit. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could cause or contribute to cumulative impacts.	emergency access. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-4a: LSM.** Same as the Project because this alternative would result in the same amount of temporary road and/or lane closures that could create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-4b: LTS.** Same as the Project because this alternative would result in the same amount poles immediately adjacent (i.e., within 100 feet) to a public roadway as the Project that could increase operational hazardous conditions for people driving. **Impact 3.17-5: LSM.** Same as the Project because this alternative would result in the same amount of temporary road or lane closures as the Project that could interference with walking or bicycling accessibility. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-6: LSM.** Same as the Project because this alternative would result in the same amount of temporary road or lane closures as the Project that could delay public transit operations. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Cumulative – Criterion e:** (No Impact). Same as the Project because this alternative would not cause or contribute to cumulative impacts related to this criterion. **Impact C.3.17-1: LTS.** Same as the Project because this alternative's contribution to the cumulative daily vehicle miles traveled impact would be the same as the Project. **Impact C.3.17-2a: LSM.** Same as the Project because this alternative's contribution to the cumulative construction road hazards impact would be the same as the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-2b: LTS.** Same as the Project because this alternative's contribution to the cumulative operational road hazards impact would be the same as the Project. **Impact C3.17-3: LSM.** Same as the Project because this alternative would result in the same contribution to the cumulative impact of temporary road and/or lane closures that could result in inadequate emergency access as the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-4a: LSM.** Same as the Project because this alternative would result in the same contribution to the cumulative impact of create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations as the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-4b: LTS.** Same as the Project because this alternative's contribution to the cumulative operational driving hazards impact would be the same as the Project. **Impact C.3.17-5: LSM.** Same as the Project because this alternative's contribution to the cumulative construction	subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could result in inadequate emergency access. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-4a: LSM.** Less than the Project because this alternative would result in a reduced number of temporary road and/or lane closures that could create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-4b: LTS.** Less than the Project because this alternative would result in a reduced amount of subtransmission line poles immediately adjacent to public roads that could increase operational hazardous conditions for people driving. **Impact 3.17-5: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that could interference with walking or bicycling accessibility. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-6: LSM.** Same as the Project because this alternative would result in the same amount of temporary road or lane closures as the Project that could delay public transit operations. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Cumulative – Criterion e:** (No Impact). Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.17-1: LTS.** Same as the Project because this alternative's contribution to the cumulative daily vehicle miles traveled impact would be the same as the Project. **Impact C.3.17-2a: LSM.** Less than the Project because this alternative's contribution to the cumulative construction road hazards would be less than the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-2b: LTS.** Less than the Project because this alternative's contribution to the cumulative operational road hazards impact would be reduced because there would be fewer subtransmission line poles immediately adjacent to public roads compared to the Project that could increase hazards. **Impact C3.17-3: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could result in inadequate emergency access than the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-4a: LSM.** Less than the Project because this alternative would result in less of a contribution to the cumulative impact of creating potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations than the Project. The	subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could result in inadequate emergency access. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-4a: LSM.** Less than the Project because this alternative would result in a reduced number of temporary road and/or lane closures that could create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-4b: LTS.** Less than the Project because this alternative would result in a reduced amount of subtransmission line poles immediately adjacent to public roads that could increase operational hazardous conditions for people driving. **Impact 3.17-5: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that could interference with walking or bicycling accessibility. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.17-6: LSM.** Same as the Project because this alternative would result in the same amount of temporary road or lane closures as the Project that could delay public transit operations. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Cumulative – Criterion e:** (No Impact). Same as the Project because this alternative would not contribute to cumulative impacts related to this criterion. **Impact C.3.17-1: LTS.** Same as the Project because this alternative's contribution to the cumulative daily vehicle miles traveled impact would be the same as the Project. **Impact C.3.17-2a: LSM.** Less than the Project because this alternative would result in a reduced number of temporary road or lane closures compared to the Project that could increase hazards. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-2b: LTS.** Less than the Project because this alternative's contribution to the cumulative operational road hazards impact would be reduced because there would be fewer subtransmission line poles immediately adjacent to public roads compared to the Project that could increase hazards. **Impact C3.17-3: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could result in inadequate emergency access. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-4a: LSM.** Less than the Project because this alternative would result in less of a contribution to the cumulative impact of creating potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations than the Project. The

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
		walking and bicycling hazards impact would be the same as the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-6: LSM.** Same as the Project because this alternative's contribution to the cumulative transit delays impact would be the same as the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant.	implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-4b: LTS.** Less than the Project because this alternative's contribution to the cumulative operational road hazards impact would be reduced because there would be fewer subtransmission line poles immediately adjacent to public roads compared to the Project that could increase driving hazards. **Impact C.3.17-5: LSM.** Less than the Project because this alternative's contribution to cumulative construction hazards associated with walking and bicycling would be reduced compared to the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-6: LSM.** Same as the Project because this alternative's contribution to the cumulative transit delays impact would be the same as the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant.	implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-4b: LTS.** Less than the Project because this alternative's contribution to the cumulative operational road hazards impact would be reduced because there would be fewer subtransmission line poles immediately adjacent to public roads compared to the Project that could increase driving hazards. **Impact C.3.17-5: LSM.** Less than the Project because this alternative's contribution to cumulative construction hazards associated with walking and bicycling would be reduced compared to the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.17-6: LSM.** Same as the Project because this alternative's contribution to the cumulative transit delays impact would be the same as the Project. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant.
Tribal Cultural Resources				
Impact 3.18-1: SU. The Project would 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, or 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. The implementation of Mitigation Measure 3.18-1 would reduce the severity of the impact, but not to less than significant. **Impact C.3.18-1: SU.** The Project impact related to 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, or 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, would be cumulatively considerable. The implementation of Mitigation Measure 3.18-1 would reduce the severity of the cumulative impact, but not to less than significant.	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could cause a substantial adverse change in the significance of a tribal cultural resource, feature, place, or cultural landscape. **Impact C.3.18.1:** No Impact (less than the Project) because no transmission project-related development would occur that could contribute to any cumulative impacts associated with this criterion.	**Overall: Less than the Project** **Impact 3.18 1: SU.** Less than the Project because this alternative would include less ground disturbance that could cause a substantial adverse change in the significance of a tribal cultural resource. The implementation of Mitigation Measure 3.18-1 would reduce the severity of the impact, but not to less than significant. **Impact C.3.18.1: SU.** Less than the Project because this alternative's contribution to the cumulative impact on tribal cultural resources reduced compared to the Project. The implementation of Mitigation Measure 3.18-1 would reduce the severity of the cumulative impact, but not to less than significant.	**Overall: Less than the Project** **Impact 3.18 1: SU.** Less than the Project because this alternative would include less ground disturbance that could cause a substantial adverse change in the significance of a tribal cultural resource. The implementation of Mitigation Measure 3.18-1 would reduce the severity of the impact, but not to less than significant. **Impact C.3.18.1: SU.** Less than the Project because this alternative's contribution to the cumulative impact on tribal cultural resources reduced compared to the Project. The implementation of Mitigation Measure 3.18-1 would reduce the severity of the cumulative impact, but not to less than significant.	**Overall: Less than the Project** **Impact 3.18 1: SU.** Less than the Project because this alternative would include less ground disturbance that could cause a substantial adverse change in the significance of a tribal cultural resource. The implementation of Mitigation Measure 3.18-1 would reduce the severity of the impact, but not to less than significant. **Impact C.3.18.1: SU.** Less than the Project because this alternative's contribution to the cumulative impact on tribal cultural resources reduced compared to the Project. The implementation of Mitigation Measure 3.18-1 would reduce the severity of the cumulative impact, but not to less than significant.
Utilities and Service Systems				
Impact 3.19-1a: LSM. The Project would require construction of new, expanded stormwater drainage that could cause significant environmental effects. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact 3.19-1b: LTS.** The Project would require operation of new, expanded stormwater drainage; relocation/construction of new electrical and telecommunications facilities; and relocation of natural gas facilities that could cause significant environmental effects. **Impact 3.19-2: LTS.** The Project would require water supplies. **Impact 3.19-3: LTS.** Project construction would result in a temporary demand for wastewater treatment during construction. **Impact 3.19-4: LTS.** The Project would generate solid waste potentially in excess of local capacities. **Impact 3.19-5: LTS**. The Project could conflict with state and local management and reduction statutes and regulations related to solid waste.	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project–related development would occur that could require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could 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.	**Overall: Less than the Project** **Impact 3.19-1a: LSM.** Less than the Project because this alternative would include fewer poles and reduced length of access road that would require less construction ground disturbance that could contribute to the need for new stormwater drainage due to runoff to the storm drains or surface waters. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact 3.19-1b: LTS.** Less than the Project because this alternative would include operation of fewer poles and reduced length of access road that could contribute to the need for new stormwater drainage due to runoff to the storm drains or surface waters. **Impact 3.19-2: LTS.** Less than the Project because this alternative would include fewer pole construction areas and reduced length of access road that would require less water.	**Overall: Less than the Project** **Impact 3.19-1a: LSM.** Less than the Project because this alternative would include reduced length of subtransmission line that would require less construction ground disturbance that could contribute to the need for new stormwater drainage due to runoff to the storm drains or surface waters. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact 3.19-1b: LTS.** Less than the Project because this alternative would include operation of reduced length of subtransmission line that could contribute to the need for new stormwater drainage due to runoff to the storm drains or surface waters. **Impact 3.19-2: LTS.** Less than the Project because this alternative would include reduced length of subtransmission line that would require less water.	**Overall: Less than the Project** **Impact 3.19-1a: LSM.** Less than the Project because this alternative would include fewer poles, reduced length of access road, and reduced length of subtransmission line that would require less construction ground disturbance that could contribute to the need for new stormwater drainage due to runoff to the storm drains or surface waters. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact 3.19-1b: LTS.** Less than the Project because this alternative would include operation of fewer poles, reduced length of access road, and reduced length of subtransmission line that could contribute to the need for new stormwater drainage due to runoff to the storm drains or surface waters **Impact 3.19-2: LTS.** Less than the Project because this alternative would include fewer pole construction areas, reduced length of access road, and reduced length of subtransmission line that would require less water.

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Impact 3.19-6: LTS. The Project could increase the rate of corrosion of adjacent utility lines as a result of alternating current. **Impact C.3.19-1a: LSM.** The Project construction impact of new, expanded stormwater drainage would be cumulatively considerable. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.19-1b: LTS.** The Project operation impact of new, expanded stormwater drainage; relocation/construction of new electrical and telecommunications facilities; and relocation of natural gas facilities would not be cumulatively considerable. **Impact C.3.19-2: LTS.** The Project impact on water supplies would not be cumulatively considerable. **Impact C.3.19-3: LTS.** The Project construction impact related to temporary demand for wastewater treatment would not be cumulatively considerable. **Impact C.3.19-4: LTS.** The Project impact associated with the generation of solid waste would not be cumulatively considered. **Impact C.3.19-5: LTS.** The Project impact of potential conflicts with state and local management and reduction statutes and regulations related to solid waste would not be cumulatively considerable. **Impact C.3.19-6: LTS.** The Project impact related to increasing the rate of corrosion of adjacent utility lines as a result of alternating current impacts would not be cumulatively considerable.	**Criterion d:** No Impact (less than the Project) because no transmission project–related development would occur that could generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. **Criterion e:** No Impact (less than the Project) because no transmission project–related development that could conflict with compliance with federal, state, and local management and reduction statutes and regulations related to solid waste. **Criterion f:** No Impact (less than the Project) because no transmission project–related development would occur that could increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could contribute to cumulative impacts.	**Impact 3.19-3: LTS.** Less than the Project because this alternative would result in the generation of less wastewater. **Impact 3.19-4: LTS.** Less than the Project because this alternative would result in the generation of less solid waste. **Impact 3.19-5: LTS**. Less than the Project because this alternative would result in the generation of less solid waste. **Impact 3.19-6: LTS.** Same as the Project because this alternative would result in the same amount of alternating current subtransmission near natural gas facilities. **Impact C.3.19-1a: LSM.** Less than the Project because this alternative's contribution to the cumulative need for new stormwater drainage impact would be reduced because it would include construction of fewer poles and shorter access roads that could affect stormwater compared to the Project. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.19-1b: LTS.** Less than the Project because this alternative's contribution to the cumulative need for new stormwater drainage during operations impact would be reduced because it would include operation of fewer poles and shorter access roads that could affect stormwater compared to the Project. **Impact C.3.19-2: LTS.** Less than the Project because this alternative's contribution to the cumulative water use impact would include less compared to the Project. **Impact C.3.19-3: LTS.** Less than the Project because this alternative's contribution to the cumulative wastewater impact would be less than the Project. **Impact C.3.19-4: LTS. LTS.** Less than the Project because this alternative's contribution to the cumulative solid waste impact would be less than the Project. **Impact C.3.19-5: LTS.** Less than the Project because this alternative's contribution to the cumulative solid waste impact would be less than the Project. **Impact C.3.19-6: LTS.** Same as the Project because this alternative's contribution to the cumulative corrosion of adjacent utility lines impact would be the same as the Project.	**Impact 3.19-3: LTS.** Less than the Project because this alternative would result in the generation of less wastewater. **Impact 3.19-4: LTS.** Less than the Project because this alternative would result in the generation of less solid waste. **Impact 3.19-5: LTS**. Less than the Project because this alternative would result in the generation of less solid waste. **Impact 3.19-6: LTS.** Same as the Project because this alternative would result in the same amount of alternating current subtransmission near natural gas facilities. **Impact C.3.19-1a: LSM.** Less than the Project because this alternative's contribution to the cumulative need for new stormwater drainage impact would be reduced because it would include construction of reduced length of subtransmission line that could affect stormwater compared to the Project. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.19-1b: LTS.** Less than the Project because this alternative's contribution to the cumulative need for new stormwater drainage during operations impact would be reduced because it would include operation of reduced length of subtransmission line that could affect stormwater compared to the Project. **Impact C.3.19-2: LTS.** Less than the Project because this alternative's contribution to the cumulative water use impact would include less compared to the Project. **Impact C.3.19-3: LTS.** Less than the Project because this alternative's contribution to the cumulative wastewater impact would be less than the Project. **Impact C.3.19-4: LTS. LTS.** Less than the Project because this alternative's contribution to the cumulative solid waste impact would be less than the Project. **Impact C.3.19-5: LTS.** Less than the Project because this alternative's contribution to the cumulative solid waste impact would be less than the Project. **Impact C.3.19-6: LTS.** Same as the Project because this alternative's contribution to the cumulative corrosion of adjacent utility lines impact would be the same as the Project.	**Impact 3.19-3: LTS.** Less than the Project because this alternative would result in the generation of less wastewater. **Impact 3.19-4: LTS.** Less than the Project because this alternative would result in the generation of less solid waste. **Impact 3.19-5: LTS**. Less than the Project because this alternative would result in the generation of less solid waste. **Impact 3.19-6: LTS.** Same as the Project because this alternative would result in the same amount of alternating current subtransmission near natural gas facilities. **Impact C.3.19-1a: LSM.** Less than the Project because this alternative's contribution to the cumulative need for new stormwater drainage impact would be reduced because it would include construction of few poles, shorter access roads, and reduced length of subtransmission line that could affect stormwater compared to the Project. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.19-1b: LTS.** Less than the Project because this alternative's contribution to the cumulative need for new stormwater drainage during operations impact would be reduced because it would include operation of fewer poles, shorter access roads, and reduced length of subtransmission line that could affect stormwater compared to the Project. **Impact C.3.19-2: LTS.** Less than the Project because this alternative's contribution to the cumulative water use impact would include less compared to the Project. **Impact C.3.19-3: LTS.** Less than the Project because this alternative's contribution to the cumulative wastewater impact would be less than the Project. **Impact C.3.19-4: LTS. LTS.** Less than the Project because this alternative's contribution to the cumulative solid waste impact would be less than the Project. **Impact C.3.19-5: LTS.** Less than the Project because this alternative's contribution to the cumulative solid waste impact would be less than the Project. **Impact C.3.19-6: LTS.** Same as the Project because this alternative's contribution to the cumulative corrosion of adjacent utility lines impact would be the same as the Project.
Wildfire				
Impact 3.20-1: LSM. Project construction could substantially impair an adopted emergency response plan or conflict with emergency evacuation. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.20-2: LTS.** The Project could, due to downslope winds, or other factors, exacerbate wildfire risks, and thereby contribute to the uncontrolled spread of a wildfire. **Impact 3.20-3: LTS.** The Project would require the installation and maintenance of access roads, subtransmission power lines, and associated infrastructure that could exacerbate fire risk or result in temporary or ongoing impacts to the environment.	**Overall: Less than the Project** **Criterion a:** No Impact (less than the Project) because no transmission project-related development would occur that could substantially impair an adopted emergency response plan or emergency evacuation plan. **Criterion b:** No Impact (less than the Project) because no transmission project–related development would occur that could, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. **Criterion c:** No Impact (less than the Project) because no transmission project–related development would occur that could require the installation or maintenance of	**Overall: Less than the Project** **Impact 3.20-1: LSM.** Same as the Project because this alternative would result in the same amount of temporary road and/or lane closures that could impair an adopted emergency response plan or conflict with emergency evacuation. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.20-2: LTS.** Less than the Project because this alternative would result in less construction activity that could exacerbate wildfire risks and thereby contribute to the uncontrolled spread of a wildfire. **Impact 3.20-3: LTS.** Less than the Project because this alternative would result in the installation of fewer poles and less installation and maintenance of access roads	**Overall: Less than the Project** **Impact 3.20-1: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could impair an adopted emergency response plan or conflict with emergency evacuation. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.20-2: LTS.** Less than the Project because this alternative would result in less construction activity that could exacerbate wildfire risks and thereby contribute to the uncontrolled spread of a wildfire.	**Overall: Less than the Project** **Impact 3.20-1: LSM.** Less than the Project because this alternative would result in a reduced distance of subtransmission line construction activities within or immediately adjacent to public roads that would require less lane closures that could impair an adopted emergency response plan or conflict with emergency evacuation. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact 3.20-2: LTS.** Less than the Project because this alternative would result in less construction activity that could exacerbate wildfire risks and thereby contribute to the uncontrolled spread of a wildfire.

Impacts of the Project	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project	Impacts of Alternative 2 Compared to the Project	Impacts of Alternative 3 Compared to the Project
Impact 3.20-4: LSM. The Project could expose people or structures to significant risks as a result of runoff or drainage changes. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.20-1: LSM.** The Project impact relative to construction substantially impairing an adopted emergency response plan or conflicting with emergency evacuation would be cumulatively considerable. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.20-2: LTS**. The Project impact of exacerbating wildfire risks and thereby contributing to the uncontrolled spread of a wildfire would not be cumulatively considerable. **Impact C.3.20-3: LTS.** The Project impact associated with installation and maintenance of access roads, subtransmission power lines, and associated infrastructure that could exacerbate fire risk or result in temporary or ongoing impacts to the environment would not be cumulatively considerable. **Impact C.3.20-4: LSM.** The Project impact associated with exposing people or structures to significant risks as a result of runoff or drainage changes would be cumulatively considerable. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant.	associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. **Criterion d:** No Impact (less than the Project) because no transmission project-related development would occur that could expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. **Cumulative –** No Impacts (less than the Project) because this alternative would not result in impacts that could result in or contribute to cumulative impacts.	that could exacerbate fire risk or result in temporary or ongoing impacts to the environment. **Impact 3.20-4: LSM.** Less than the Project because this alternative would result in less construction activity that could expose people or structures to significant risks as a result of post-fire slope instability or drainage changes. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.20-1: LSM.** Same as the Project because this alternative would result in the same contribution to the cumulative impact of temporary road and/or lane closures that could result in impairment of an adopted emergency response plan or conflict with emergency evacuation. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.20-2: LTS**. Less than the Project because this alternative's contribution to the cumulative wildfire risks would be less. **Impact C.3.20-3: LTS.** Less than the Project because this alternative's contribution to the cumulative fire risk would be less. **Impact C.3.20-4: LSM.** Less than the Project because this alternative's contribution to the cumulative impact of exposing people or structures to significant risks as a result of post-fire slope instability or drainage changes would be less. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant.	**Impact 3.20-3: LTS.** Less than the Project because this alternative would result in the installation of fewer miles of subtransmission line that could exacerbate fire risk or result in temporary or ongoing impacts on the environment. **Impact 3.20-4: LSM.** Less than the Project because this alternative would result in less construction activity that could expose people or structures to significant risks as a result of post-fire slope instability or drainage changes. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.20-1: LSM.** Same as the Project because this alternative would result in the same contribution to the cumulative impact of temporary road and/or lane closures that could result in impairment of an adopted emergency response plan or conflict with emergency evacuation. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.20-2: LTS**. Less than the Project because this alternative's contribution to the cumulative wildfire risks would be less. **Impact C.3.20-3: LTS. LTS.** Less than the Project because this alternative's contribution to the cumulative fire risk would be less. **Impact C.3.20-4: LSM.** Less than the Project because this alternative's contribution to the cumulative impact of exposing people or structures to significant risks as a result of post-fire slope instability or drainage changes would be less. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant.	**Impact 3.20-3: LTS.** Less than the Project because this alternative would result in the installation of fewer poles, less installation and maintenance of access roads, and the installation of fewer miles of subtransmission line that could exacerbate fire risk or result in temporary or ongoing impacts to the environment. **Impact 3.20-4: LSM.** Less than the Project because this alternative would result in less construction activity that could expose people or structures to significant risks as a result of post-fire slope instability or drainage changes. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant. **Impact C.3.20-1: LSM.** Same as the Project because this alternative would result in the same contribution to the cumulative impact of temporary road and/or lane closures that could result in impairment of an adopted emergency response plan or conflict with emergency evacuation. The implementation of Mitigation Measure 3.17-2a would reduce the impact to less than significant. **Impact C.3.20-2: LTS**. Less than the Project because this alternative's contribution to the cumulative wildfire risks would be less. **Impact C.3.20-3: LTS. LTS.** Less than the Project because this alternative's contribution to the cumulative fire risk would be less. **Impact C.3.20-4: LSM.** Less than the Project because this alternative's contribution to the cumulative impact of exposing people or structures to significant risks as a result of post-fire slope instability or drainage changes would be less. The implementation of Mitigation Measure 3.10-1a would reduce the impact to less than significant.

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CHAPTER 5
Other CEQA Considerations

5.1 Introduction

CEQA Guidelines Section 15126 requires an EIR to discuss certain topics that were not specifically discussed in previous EIR chapters. Accordingly, this chapter discusses the following topics:

(1) Significant environmental effects of the Project that cannot be avoided.

(2) Significant irreversible environmental changes that would result from the Project.

(3) Growth-inducing impacts of the Project.

(4) Environmental justice considerations.

5.2 Significant Unavoidable Environmental Effects

Section 15126.2(c) of the CEQA Guidelines requires that an EIR identify significant environmental effects of the Project that cannot be avoided, including those that can be mitigated, but not to a less-than-significant level. The Project's significant unavoidable impacts are described in Chapter 3, *Environmental Analysis of the Project*, of this Draft EIR and summarized here. The Project would result in long-term significant unavoidable impacts on aesthetics, recreation, and tribal cultural resources, and a short-term significant unavoidable impact associated with construction noise. These impacts would remain significant and unavoidable even with implementation of mitigation measures.

5.2.1 Aesthetics

The proposed new Kramer–Cal City 115 kV Subtransmission Line would substantially degrade the existing visual character or quality of public views, which would result in significant unavoidable environmental effects (see Section 3.1, *Aesthetics*, Impact 3.1-2c). As shown in Figures 3.1-14b and 3.1-15b, and Appendix E BLM KOP 3, *Simulated View*, the Project would result in a significant impact by creating a strong visual contrast and high level of visual change along Rudnick Boulevard (Key Observation Point 2), Lindbergh Boulevard (Key Observation Point 3), and Twenty Mule Team Parkway (BLM-Suggested Key Observation Point 3), respectively. Implementation of Mitigation Measure 3.1-2c would reduce the significant impact by reducing the visual contrast created by the new subtransmission poles and line, but not to a less-than-significant level.

Alternative 2, the Twenty Mule Team Parkway Alternative, or Alternative 3, the Cal City/Ivanpah–Control Collocation with Twenty Mule Team Parkway Alternative, would eliminate the significant long-term aesthetics impact of the proposed Kramer–Cal City 115 kV Subtransmission Line along Rudnick Boulevard by placing the subtransmission line to the south along Lindbergh Boulevard in a similar alignment as proposed for the Cal City–Edwards-Holgate 115 kV Subtransmission Line. With implementation of Alternative 2 or Alternative 3, the significant aesthetics impact in the vicinity of Rudnick Boulevard would be eliminated; however, the significant aesthetics impact in the vicinity of Lindbergh Boulevard would remain and would be more severe because the Kramer–Cal City 115 kV Subtransmission Line would be within the same alignment as the Cal City–Edwards-Holgate 115 kV Subtransmission Line for approximately 2.5 miles, which would increase the visibility of the Project in that area. The Project's significant aesthetics impact along Twenty Mule Team Parkway near U.S. Highway 395 would also remain under Alternatives 1, 2, or 3. There is not a feasible Project alternative available that could reduce the significant and unavoidable aesthetics impact along Lindbergh Boulevard and/or Twenty Mule Team Parkway to a less-than-significant level.

5.2.2 Recreation

The proposed new Kramer–Cal City 115 kV Subtransmission Line would alter the character of a recreational area by reducing the scenic characteristics that contribute to the value of recreational facilities or areas (see Section 3.16, *Recreation*, Impact 3.16-3b). Implementation of Mitigation Measure 3.1-2c would lessen impacts west of Borax Bill Park and the California City off-highway vehicle trail by reducing the visual contrast created by new subtransmission poles and lines, but not to a less-than-significant level. The impact would be significant and unavoidable. However, Alternative 2 or Alternative 3 would eliminate the significant long-term recreation impact of the proposed subtransmission line along Rudnick Boulevard by placing the subtransmission line to the south along Lindbergh Boulevard in the same alignment as proposed for the Cal City–Edwards-Holgate 115 kV Subtransmission Line. With implementation of Alternative 2 or Alternative 3, the significant unavoidable recreation impact in the vicinity of Rudnick Boulevard would be avoided.

5.2.3 Noise

Construction activities from the Project associated with the proposed Kramer–Cal City 115 kV Subtransmission Line would result in a substantial temporary increase in ambient noise levels above California City noise standards at a single-family residence near Borax Bill Park (see Section 3.13, *Noise and Vibration*, Impact 3.13-1). The impact would be significant and unavoidable even with implementation of Mitigation Measures 3.13-1a and 3.13-1b, which would require preparation of a construction noise reduction plan and construction helicopter flight restrictions, respectively. Although effects would be temporary, there is not a feasible Project alternative available that could reduce the significant and unavoidable construction noise impact at the residence near Borax Bill Park to a less-than-significant level.

5.2.4 Tribal Cultural Resources

Based on the archaeological sensitivity analysis conducted for the Project, there is a high potential for unrecorded subsurface archaeological materials to be uncovered during the proposed ground-disturbing activities, particularly in areas that are undisturbed. Should any previously unrecorded archaeological resource and/or human remains be identified during Project ground-disturbing construction activities that are found to qualify as a tribal cultural resource pursuant to Public Resources Code Section 21074(a)(1) (determined to be eligible for listing in the California Register of Historical Resources or a local register of historical resources), the Project impact on tribal cultural resources could be potentially significant (see Section 3.18, *Tribal Cultural Resources*, Impact 3.18-1). Implementation of Mitigation Measure 3.18-1 would reduce the significant impact by supporting tribal visibility and promoting tribal interests, which may reduce intangible impacts to tribal cultural resources, but the overall impact would not be reduced to a less-than-significant level. Because complete avoidance of impacts on tribal cultural resources is considered unattainable, tribal cultural resources impacts were determined to be significant and unavoidable. Cumulative impacts on tribal cultural resources associated with the Project would also be significant and unavoidable (see Section 3.18, *Tribal Cultural Resources*, Impact C.3.18-1). There is not a feasible Project alternative available that could reduce the significant and unavoidable impact on tribal cultural resources to a less-than-significant level.

5.3 Significant Irreversible Changes

Section 15126.2(c) of the CEQA Guidelines requires that an EIR identify significant irreversible environmental changes that would be caused by the Project. These changes may include, for example, uses of non-renewable resources, or provision of access to previously inaccessible areas, as well as project accidents that could change the environment in the long term, or a change in land use that commits future generations to similar uses. Project development would require permanent commitment to natural resources resulting from the direct consumption of fossil fuels, including diesel fuel and gasoline; construction materials; the manufacture of new equipment that largely cannot be recycled at the end of the Project's useful lifetime; and energy required to produce the fuels and materials.

Furthermore, Project construction could also result in loss of habitat from the Cal City Substation expansion, pole bases, and access roads that provide habitat and can support special-status plant and wildlife species. However, as evaluated in Section 3.4, *Biological Resources*, while the Project would result in significant impacts on biological resources, with implementation of recommended mitigation measures, impacts on biological resources would be reduced to a less-than-significant level.

Project operation would allow for the transmission of additional electrical power generated from renewable and non-renewable resources, although the Project itself would require only limited future use of non-renewable resources. Although the Project would facilitate the delivery of electrical power generated partially from non-renewable resources (e.g., natural gas), these resources would be exploited and expended now and in the near future regardless of the Project, as the production and use of the carbon-based products that would become electricity transported

by the Project has been, or will be, approved by permitting agencies. Therefore, the primary and secondary impacts resulting from the Project would be less than significant.

Accidents, such as the release of hazardous materials, could trigger irreversible environmental damage. As discussed in Section 3.9, *Hazards and Hazards Materials*, Project construction would involve the use of limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, and oils, in order to fuel and maintain vehicles and other motorized equipment. An accidental spill of any of these substances could impact water and/or groundwater quality and, if a spill of significant quantity were to occur, the release could pose a hazard to construction workers and the public, as well as the environment. Considering the types and minimal quantities of hazardous materials that would be used for the Project and the emergency response plans and other procedures that would be required by the Applicant proposed measures and numerous laws and regulations, the accidental release of hazardous materials is unlikely. State and federal regulations and safety requirements, as described in the regulatory setting in Section 3.9, *Hazards and Hazardous Materials*, would ensure that public health and safety risks would be maintained at acceptable levels, so that significant irreversible changes from accidental releases would not be expected.

Project implementation would introduce an industrial element of visual quality within the expansive natural surroundings. Given the visibility of the steel subtransmission line poles that would be associated with the Project, the distinctive natural scenic quality of the view at certain locations along the alignments would be diminished. As described in Section 3.1, *Aesthetics*, implementation of mitigation would lessen the impacts by reducing the visual contrast created by new subtransmission poles and lines, but not to a less-than-significant level. Therefore, the aesthetics change would be irreversible, and the impact would remain significant and unavoidable. Although implementation of Alternative 2 or Alternative 3 would reduce the severity of the impact, it would remain significant and unavoidable (see Section 4.6.3, *Alternative 2: Twenty Mule Team Parkway Alternative*).

Additionally, because the Project would introduce subtransmission lines in areas where there are no existing power lines, it could provide the opportunity to collocate future lines with the proposed lines within or along the proposed alignments as recommended by the Garamendi Principles.[1] Therefore, the Project could result in a change in land use associated with the new proposed subtransmission lines that could commit future generations to collocating similar uses (e.g., electric power lines) along or within the proposed alignments.

[1] The Garamendi Principles for electric transmission corridor planning were passed in Senate Bill 2431 (Statutes of 1988, Chapter 1457). The Garamendi Principles consist of the following:

(1) Using existing right-of-way by upgrading existing subtransmission facilities, where technically and economically justifiable.

(2) Encouraging the expansion of existing right-of-way when construction of new transmission lines is required, where technically and economically feasible.

5.4 Growth-Inducing Effects

CEQA requires a discussion of the ways in which a project could induce growth. CEQA Guidelines Section 15126.2(e) identifies an impact as growth-inducing if it fosters economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. New employees hired for proposed commercial and industrial development projects and population growth resulting from residential development projects represent direct forms of growth. Other examples of projects that are growth-inducing are the expansion of urban services into a previously unserved or under-served area, the creation or extension of transportation links, or the removal of major obstacles to growth. It is important to note that these direct forms of growth have secondary effects of expanding the size of local markets and attracting additional economic activity to the area.

A project would be considered growth-inducing if it would foster growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Growth-inducing impacts could also occur if the project would provide infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

5.4.1 Growth Caused by Direct and Indirect Employment

As described in the Project Description (see Section 2.7, *Construction*), the number of workers required during peak construction would be a maximum of approximately 140 construction personnel working on any given day. The Project construction activities would be temporary, estimated to last at least 24 months. It is expected that all temporary positions would be filled from the local labor pool available in Kern and San Bernardino counties, with workers expected to commute to the site rather than move. However, some construction personnel may need temporary accommodations. An adequate supply of hotels and motels are in the Project area that could be used by the out-of-town personnel. Therefore, no growth in housing needed for construction workers would occur.

As described in the Project Description (see Section 2.9, *Operation and Maintenance*), Project operation and maintenance would require minimal staffing that would be handled by current Southern California Edison (SCE) employees. Therefore, no new permanent jobs would be created. Overall, employment generated by the Project would not have a significant impact on population growth or new housing because any short-term housing demand created during construction could be accommodated by existing units, and no long-term growth would result from Project operation and maintenance.

5.4.2 Growth Related to Provision of Additional Electric Power

Project construction is needed to meet planned demand in the California City portion of the electrical needs area (ENA) and to increase system reliability and operational flexibility. The Project would be in portions of eastern Kern County, including the city of California City; in portions of western San Bernardino County; North Edwards; and within Edwards Air Force Base. As described in Section 3.14, *Population and Housing*, the Project could have an indirect impact

on population growth if it would generate growth or contribute to a concentration of people (e.g., add new residents) at levels above what is assumed in local and regional land use plans or in projections made by regional planning authorities. Because adding electrical infrastructure to an area can result in the unplanned indirect growth of population and housing, this could occur as a result of this Project. However, it is not typical for an area to experience population growth solely as a result of more available electrical capacity. Other factors, such as water supply, economic conditions, land availability, population trends, availability of sewer services, and local planning policies, more directly affect growth.

The Project is designed to accommodate existing and planned electrical load and increase system reliability and operational flexibility, rather than to induce unplanned growth. Therefore, indirect operational impacts associated with population growth would be less than significant (see Impact 3.14-1).

5.5 Environmental Justice Considerations

5.5.1 Regulatory Background

A CEQA Lead Agency may use information about the economic or social impacts of a project to determine the significance of physical changes caused by the project, but the economic or social effects of a project are not treated as significant effects on the environment.

Per CEQA Guidelines Section 15131, "Economic or social information may be included in an EIR or may be presented in whatever form the agency desires." The section continues:

> a) *Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.*
>
> b) *Economic or social effects of a project may be used to determine the significance of physical changes caused by the project. […] Where an EIR uses economic or social effects to determine that a physical change is significant, the EIR shall explain the reason for determining that the effect is significant.*
>
> c) *Economic, social, and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment identified in the EIR. […]*

The Office of the California Attorney General (OAG) has clarified that environmental justice concerns are relevant to the analysis of a project under CEQA, and has recommended that lead agencies address environmental justice by evaluating whether a project's impacts would affect a community whose residents are particularly sensitive to the impact (i.e., sensitive receptors) and whether a project would have significant effects on communities when considered together with

any environmental burdens those communities already are bearing, or may bear from probable future projects (i.e., cumulative impacts). Additionally, OAG indicates that a CEQA lead agency must be clear and transparent in its Statement of Overriding Considerations about the balances it has struck in approving a project. For example, in situations where the benefits of the project will be enjoyed widely, but the environmental burdens of a project will be felt particularly by the neighboring communities, this should be clearly disclosed in the statement of overriding considerations (OAG 2012).

On February 22, 2018, Attorney General Becerra established the Bureau of Environmental Justice, and, on April 28, 2021, Attorney General Bonta announced the expansion of the Bureau of Environmental Justice, which currently comprises 12 attorneys who address environmental injustices on communities that are often under-resourced and overburdened. The Bureau of Environmental Justice's mission is to protect people and communities that endure a disproportionate share of environmental pollution and public health hazards. The Attorney General's Office and its Bureau of Environmental Justice use several tools to advance environmental justice, including CEQA reviews. CEQA requires government agencies in California to consider potentially significant environmental impacts on communities already burdened with pollution when reviewing and permitting new projects (OAG 2024).

The California Public Utilities Commission (CPUC) updated its *Environmental and Social Justice Action Plan* in 2022. The plan serves as both a commitment to further environmental and social justice principles, and an operating framework with which to integrate environmental and social justice considerations throughout the agency's work. In the context of the plan pursuant to Government Code Section 65040.12(e), *environmental justice* means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. Because the CPUC regulated utility services beyond those tied to the environment, the term environmental and social justice was adopted to encompass a broader effort and potential population (CPUC 2022).

The information presented in this section informs such environmental justice considerations should the Project or one of the alternatives to the Project be approved.

5.5.2 Environmental Justice Setting

The State Office of Environmental Health Hazard Assessment, on behalf of the California Environmental Protection Agency, developed a screening tool used to help identify communities disproportionately burdened by multiple sources of pollution and with population characteristics that make them more sensitive to pollution, relative to other communities (OEHHA 2023). The CalEnviroScreen 4.0 screening tool considers such indicators as existing conditions with respect to environmental pollution burden (pollution load/exposures), population sensitivity (i.e., age, low birth weight, and cardiovascular disease), and other socioeconomic factors (e.g., education level, poverty, unemployment). The tool ranks various factors and assigns an overall CalEnviroScreen score as a percentile (from 0 to 100, with low indicating below average relative to other communities and high indicating above average weighted pollution burden and socioeconomic factors).

The portions of the Project sites and alignments within California City would be in Census Tract 6029005508, which has a CalEnviroScreen percentile score of 48. This score indicates a low average pollution burden, relative to other parts of California. Most of the remaining portions of the Project sites and alignments that encompass unincorporated land in eastern Kern County on the outskirts of California City would be in Census Tract 6029006500, which has a CalEnviroScreen percentile score of 77. This score indicates that the census tract experiences higher pollution and secondary effects compared to other parts of California. The three most burdened pollution indicators are ambient ozone, toxic releases, and lead from housing. Other environmental conditions in the census tract are related to the presence of toxic cleanup sites, hazardous waste, and solid waste. Population vulnerabilities (e.g., socioeconomics factors) also contribute to the relatively high overall percentile score. CalEnviroScreen indicates that the census tract is heavily affected by education quality, poverty, and unemployment (OEHHA 2023). Based on these conditions, the census tract is a Senate Bill 535-designated disadvantaged community and Assembly Bill 1550 low-income community.

The Applicant conducted an environmental justice analysis (as described in the Proponent's Environmental Assessment Appendix M, *Cal City Substation 115 kV Upgrade Project Routing Report*) to screen for potential environmental justice communities that may be present within the study area. The two demographic indicators from the U.S. Environmental Protection Agency's mapping tool, people of color and low-income communities, were evaluated to identify the presence of a potential environmental justice community within the study area. SCE determined that based on the screening, approximately 90 percent of the study area is within a potential environmental justice community. SCE's Cal City, Edwards, and Kramer substations and Holgate Switchyard are all within or adjacent to environmental justice communities. Based on this information, in the context of preliminary routing analysis, SCE determined that it would not be feasible to identify efficient Project route combinations that would effectively avoid potential environmental justice communities (SCE 2022).

5.5.2.1 Impacts on Sensitive Receptors and Cumulative Environmental Burdens

The environmental impacts of the Project on sensitive receptors and the Project's impacts together with existing or foreseeable cumulative environmental burdens experienced by nearby communities are analyzed in the EIR in Section 3.3, *Air Quality*; Section 3.9, *Hazards and Hazardous Materials*; and Section 3.13, *Noise and Vibration*. For summaries of the impacts that would be associated with the alternatives, refer to Table 4-15, *Summary of Impacts of the Project and Alternatives*. The air quality, hazards and hazardous materials, and noise impacts of the Project and alternatives on sensitive receptors are described below.

Air Quality

The Project would expose sensitive receptors to pollutant concentrations (Impacts 3.3-3 and C.3.3-3, *Less than Significant*), would result in emissions (such as those leading to odors) that could adversely affect people (Impacts 3.3-4 and C.3.3-4, *Less than Significant*), and would result in construction activities that would expose local sensitive receptors to *Coccidioides immitis*

spores (Impacts 3.3-5 and C.3.3-5, *Less than Significant*). Brief descriptions of these impacts relative to the Project alternatives are as follows:

- Alternative 1: Cal City/Ivanpah–Control Collocation, *Less than Significant*. Construction activities would be at a similar distance from sensitive receptors as those identified for the Project. The impact on any one sensitive receptor would be approximately the same as the Project.
- Alternative 2: Twenty Mule Team Parkway Alternative, *Less than Significant*. Construction activities would be at a closer distance from sensitive receptors as those identified for the Project; however, given the short period of emissions exposure that would be associated with the linear pace of subtransmission line construction activities, the impact on any one sensitive receptor would be approximately the same as the Project.
- Alternative 3: Cal City/Ivanpah–Control Collocation with Twenty Mule Team Parkway Alternative, *Less than Significant*. Construction activities would be at a closer distance from sensitive receptors as those identified for the Project; however, given the short period of emissions exposure that would be associated with the linear pace of subtransmission line construction activities, the impact on any one sensitive receptor would be approximately the same as the Project.

Hazards and Hazardous Waste

The Project would involve the routine transport, use, and disposal of hazardous materials that could result in an accidental release of hazardous materials into the environment (Impacts 3.9-1 and C.3.9-1, *Less than Significant*), would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing school (Impacts 3.9-2 and C.3.9-2, *Less than Significant*), and would be located on and adjacent to sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a hazard to the public or the environment (Impacts 3.9-3 and C.3.9-3, *Less than Significant*). Brief descriptions of these impacts relative to the Project alternatives are as follows:

- Alternative 1: Cal City/Ivanpah–Control Collocation, *Less than Significant*. Construction and operational activities would be at a similar distance from sensitive receptors as those identified for the Project. The impact on any one sensitive receptor would be approximately the same as the Project.
- Alternative 2: Twenty Mule Team Parkway Alternative, *Less than Significant*. Construction and operational activities would be at a closer distance from sensitive receptors as those identified for the Project; however, given the short period of potential hazardous materials exposure that would be associated with the linear pace of subtransmission line construction activities, the impact on any one sensitive receptor would be approximately the same as the Project.
- Alternative 3: Cal City/Ivanpah–Control Collocation with Twenty Mule Team Parkway Alternative, *Less than Significant*. Construction and operational activities would be at a closer distance from sensitive receptors as those identified for the Project; however, given the short period of potential exposure that would be associated with the linear pace of subtransmission line construction activities, the impact on any one sensitive receptor would be approximately the same as the Project.

Noise

The Project construction activities would generate a temporary increase in ambient noise levels that would exceed the City of California City Noise Ordinance (Impact 3.13-1, *Significant and Unavoidable*, and Impact C.3.13-1, *Less than Significant with Mitigation*) and would generate a temporary increase in ambient noise levels in unincorporated jurisdictions (Impacts 3.13-2 and C.3.13-2, *Less than Significant*). Brief descriptions of these impacts relative to the Project alternatives are as follows:

- Alternative 1: Cal City/Ivanpah–Control Collocation, Impact 3.13-1, *Significant and Unavoidable*; Impact C.3.13-1, *Less than Significant with Mitigation*; and Impacts 3.12-2, and C.3.12-2, *Less than Significant*. Construction activities would be at a similar distance from sensitive receptors as those identified for the Project. The impact on any one sensitive receptor would be approximately the same as the Project.
- Alternative 2: Twenty Mule Team Parkway Alternative, Impact 3.13-1, *Significant and Unavoidable*; Impact C.3.13-1, *Less than Significant with Mitigation*; and Impacts 3.12-2, and C.3.12-2, *Less than Significant*. Construction and operational activities would be at a closer distance from sensitive receptors as those identified for the Project; however, given the short period of potential noise exposure that would be associated with the linear pace of subtransmission line construction activities, the impact on any one sensitive receptor would be approximately the same as the Project.
- Alternative 3: Cal City/Ivanpah–Control Collocation with Twenty Mule Team Parkway Alternative, *Less than Significant*. Construction and operational activities would be at a closer distance from sensitive receptors as those identified for the Project; however, given the short period of potential noise exposure that would be associated with the linear pace of subtransmission line construction activities, the impact on any one sensitive receptor would be approximately the same as the Project.

Summary

As described previously, Alternatives 1, 2, and 3 would result in approximately the same air quality, hazardous materials, and noise impacts on nearby sensitive receptors compared to the Project. From an environmental justice perspective, Alternatives 1, 2, or 3 would generate approximately the same impacts on sensitive receptors as the Project.

5.5.2.2 Balance of Impacts and Benefits

Project construction and operation is proposed to address planned demand in the California City portion of the ENA and to increase system reliability and operational flexibility. Therefore, the benefits of the Project would occur throughout the ENA, which includes the southeastern Kern County area, including the city of California City and part of Edwards Air Force Base. The ENA is shown in Figure 1-1.

As analyzed in the impacts identified previously, some of the site-specific burdens would occur within the ENA; however, most of the impacts would occur on sensitive receptors outside of the ENA along the Kramer–Cal City 115 kV Subtransmission Line and Cal City–Edwards-Holgate 115 kV Subtransmission Line alignments. These sensitive receptors (residences) would experience the burdens of the Project and would not be within the area served by improved

electrical reliability. However, given the relatively small number of residences that would be affected outside of the ENA, temporary impacts outside this area would not cause a substantial imbalance of impacts and benefits.

In addition to the impacts on sensitive receptors identified previously, letters received on the Project during the EIR scoping period indicate a concern about property values. As described in Appendix B, *Scoping Report*, Section 4.2, *Raised Issues Not to Be Analyzed under CEQA*, the CEQA Guidelines state that "Economic or social effects of a project shall not be treated as significant effects on the environment." Therefore, potential economic or social effects of Project siting (e.g., changes in residential property values) are not environmental impacts that must be considered in the scope of this EIR. Nonetheless, the comments received on this topic are part of the record for this Project and will be considered along with the EIR at its decision-making stage.

5.6 References

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CHAPTER 6
Report Preparers

6.1 Report Authors

6.1.1 Lead Agency

California Public Utilities Commission
Energy Division
505 Van Ness Avenue, 4th Floor
San Francisco, California 94102

Mr. Boris Sanchez	CPUC Project Manager
Ms. Michelle Wilson	CPUC Program and Project Supervisor

6.1.2 Consultants

Prime Consultant

Environmental Science Associates
575 Market Street, Suite 3700
San Francisco, California 94102

Michael Manka	Project Director
Silvia Yanez	Assisting Project Director
Matthew Fagundes	Project Manager, Air Quality, Alternatives
Maria Hensel	Deputy Project Manager, Hydrology and Water Quality, Utilities and Service Systems, Wildfire
Janna Scott	Alternatives
Dave Davis	Aesthetics
Stephanie Villegas	Aesthetics
Ryan Carew	Agriculture and Forestry Resources, Hazards and Hazardous Materials, Population and Housing, Public Services, Recreation
Olivia Silverstein	Agriculture and Forestry Resources, Recreation,
Jyothi Iyer	Air Quality
Scott Holbrook	Biological Resources
Brian Pittman	Biological Resources
Ashleigh Sims	Cultural Resources, Tribal Cultural Resources
Heidi Koenig	Cultural Resources, Tribal Cultural Resources
Joneil Manansala	Energy, Greenhouse Gas Emissions

Chris Sanchez	Noise, Energy, Greenhouse Gas Emissions
Selena Whitney	Land Use and Planning, Wildfire, Public Services
Nick Reynoso	Noise
Michael Burns	Geology, Soils, and Paleontology; Hazards and Hazardous Materials; Hydrology and Water Quality; Mineral Resources
Emily Kline	Geology, Soils, and Paleontology; Mineral Resources; Utilities and Service Systems
Jonathan Teofilo	Transportation
Vincent Molina	Transportation
Savannah Battista	Wildfire

Sub Consultant

Grid SME

Gary Brown	Electrical Engineering
Lowell Watros	Electrical Engineering